

Universitat de les Illes Balears

**CATÀLEG DE PROJECTES
D'INVESTIGACIÓ
DE LA UNIVERSITAT
DE LES ILLES BALEARS**

2000

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**PROJECTES DE RECERCA
EN EL MARC DE LA UNIO EUROPEA, I ALTRES
ACCIONS**



SERVEI I+D (OTRI)

- Operation of an Innovation Relay Centre in Murcia, Valencia and Balears.
GARCIA MORENO, Eugeni

Referència: NRC3. 41 (CENEMES 2nd. Phase).

Títol: Operation of an Innovation Relay Centre in Murcia, Valencia and Balears.

Centre: Servei I+D (OTRI). Edifici Mateu Orfila i Rotger.

Investigador principal: GARCIA MORENO, Eugeni.

Categoria: CU (àrea de coneixement: Tecnologia Electrònica).

Inici: 1997. **Fi:** 2000.

Socis:

Instituto de Fomento de la Región de Murcia (INFO)
Asociación de Investigación de la Industria Agroalimentaria (AINIA)

Coordinador: Universitat d'Alacant

Summary

Directorate General XII of the European Union finances the Spanish Mediterranean Relay Centre (CENEMES) in which R+D Service (OTRI) of the University of the Balearic Islands takes part together with the University of Alacant (coordinator), the Promotion Institute of Murcia (INFO) and Medium and Small Industry Institute of Valencia (IMPIVA), so the area that this centre extends have in common particular socio-economic characteristics and problems. Furthermore, CENEMES is one of the 52 relay centres already established all around Europe that have the following objectives:

—Innovation promotion in the local industry, specially by exploiting the research results and transferring of technology.

—Participation promotion in European Union R+D Programmes and the diffusion and application of their results.

—Information spreading on transfer, results exploitation and participation in research projects.

—Partners searching for national and european projects.

—Scientific and technological offer and demand diffusion.

The activities of this centre do not concentrate inside the University of the Balearic Islands, but its aim is mainly to increase the participation of Balearic enterprises in research and technological development projects and the results transfer from projects carried out in our University to the productive system, both in our geographical area and all around Europe.



SERVEI DE CÀLCUL I INFORMATITZACIÓ

- ARIADNE. Academic Experience at Balearic Islands (AACEBI).
SERRA CIFRE, Bartomeu J.

Referència: ET 4001(ET).

Títol: ARIADNE. Academic Experience at Balearic Islands (AACEBI).

Centre: Servei de Càlcul i Informatització. Edifici Anselm Turmeda.

Investigador principal: SERRA CIFRE, Bartomeu J.

Categoria: CU (àrea de coneixement: Ciències de la Computació i Intel·ligència Artificial).

Inici: 1998.

Fi: 2000.

Socis:

Department Computerwetenschappen. Katholieke Universiteit Leuven (Bèlgica)
Dipartimento di Ingegneria Biofisica e Elettronica. Univesità degli Studi di Genova (Itàlia)
Faculté des Sciences Agronomiques. Université Catholique de Louvain (Bèlgica)
Institut d'Informatique et d'Organisation HEC. Université de Lausanne (Suïssa)
Insitut de Recherche en Informatique et Télécommunication. Université Paul Sabatier
(França)

Coordinador: Laboratoire d'Enseignement Assisté par Ordinateur. Ecole Polytechnique
Fédérale de Lausanne (Suïssa)

Summary:

Due to the geographical environment of the University of the Balearic Islands (UIB) -it covers several islands- we are a good testbed for demonstration experiments like those of ARIADNE Extension proposal. The UIB has its head office at Mallorca, major island of the Balearic Islands. The following table shows the implementation plan of studies in Menorca and Eivissa and estimated number of people attending them in Menorca and Eivissa:

	<u>Menorca</u>	<u>Eivissa</u>	<u>Number of students</u>
1st year	Teacher: infant education (I)	Teacher: infant education (I)	120
2nd year	Teacher: infant education (I, II) Business administration	Teacher: infant education (I, II) Business administration	240 120
3rd year	Teacher: infant education (I, II, III) Business administration (I, II) Telematics (I)	Teacher: infant education (I, II, III) Business administration (I, II) Telematics (I)	360 240 120

In this scenario we will mix traditional classes and methodologies with distance learning classes and new methodologies based on telematics services (videoconferencing, telematic information, computer based systems, electronic mail communication, etc). In this way we will be providing an easier access to education to students of the other islands that have socio-geographic and economical disadvantages. We will use the tools developed for ARIADNE project in order to produce the pedagogical material, offered as on-line material and to process and evaluate the response of the academic community (teachers and students) to this innovative approach.



DEPARTAMENT DE BIOLOGIA

- Optimização da produção e propagação da alfarrobeira.
LOPES ROMANO, Anabela M
- Time resolved study of chlorophyll fluorescence changes induced by water-waste.
MEDRANO GIL, Hipólito
- Development and evaluation of improved fruit fly attractants in the Balearic Islands.
ALEMANY FERRÀ, Aina

Referència: INTERREG II, contracte núm. 20/REGII/6/96.

Títol: [Optimização da produção e propagação da alfarrobeira.](#)

Centre: Departament de Biologia-IMEDEA. Edifici Guillem Colom Casanovas.

Investigadora principal: [LOPES ROMANO, Anabela M. Universidade do Algarve \(Portugal\).](#)

Investigador associat: MEDRANO GIL, Hipólito.

Categoria: CU (àrea de coneixement: Biologia Vegetal).

Inici: 1997. **Fi:** 2000.

Socis:

Fundação da Faculdade de Ciências da Universidade de Lisboa (Portugal)
CIA General del Algarrobo de España, S.A. (Espanya)
Coordinador: Universidade do Algarve (Portugal)

Summary

Carob is an important crop for mediterranean countries, usually founded in marginal soils. Market expectatives for pod and mainly seeds is very promising. Therefore different efforts should be devoted to improve the basic and applied knowledge on this crops.

The different groups of this Project are aimed to develop basic research on mineral nutrition physiology of the tree, propagation techniques, by cuttings or "in vitro" culture, and other basic aspects of the field behaviour of this crop. Applied research will be also done in these groups as well as in the new orchards of carob trees located in Andalusia property of the company also included in the Project.

Referència: BF 026-98.

Títol: Time resolved study of chlorophyll fluorescence changes induced by water-waste.

Centre: Departament de Biologia. Edifici Guillem Colom Casanovas.

Investigador principal: MEDRANO GIL, Hipólito.

Categoria: CU (àrea de coneixement: Biologia Vegetal).

Socis:

Coordinador: LURE, CNRS. Université de Paris-Sud

Summary

The interest of chlorophyll fluorescence as a putative signal for detection and accurate analyses of physiological phenomena associated with water stress, the most limiting factor for crops yield over the world, led us to apply for the series of projects developed at LURE since 1996 (see Experimental Report).

The results of previous projects revealed that several signals related with chlorophyll fluorescence (particularly the steady-state signal, F_s), can be excellent tools for early detection of water stress (Cerovic et al., 1996; Flexas et al., 1998a, b, c; Flexas et al., 1999). Also, evidences for a qE-related process involved in the down-regulation of F_s as a response to water stress have been obtained through time-resolved measurements using the Super-ACO equipment and from photochemical reflectance index (see Experimental Report).

Now, apart of the possibility of repeating some of the previous experiments due to technical problems during the previous measurements (see Experimental Report), we are interested into extend our study to fluorescence signals different to that of chlorophyll. It has been recently reviewed the special index of blue-green fluorescence and of red(chlorophyll) to blue fluorescence ratios for plant stress assessment (Lichtenthaler, 1996; Cerovic et al., 1999). Blue-green fluorescent molecules in leaf epidermis are mainly phenolic and other compounds related with plant secondary metabolism, which increase their content as a response to environmental stressed, like water stress (Cerovic et al., 1999). Of particular interest for stress assessment is the shift from a dominant chlorophyll fluorescence and low blue-green fluorescence under control conditions. Grapevines have important amounts of phenolic compounds in leaves and, specially, in fruits, to which they confer most of the characteristics related with fruit quality. It is now that water stress strongly affects to the characteristics of phenolic metabolism, at least in fruits (Escalona et al., 1999 and unpublished). Thus, blue-green fluorescence studies seem to be also a promising tool for water stress detection in grapevines. The multiwavelength capability of synchrotron radiation makes it a good instrument for this kind of analyses (Cerovic et al., 1994).

The aim of the present project is to obtain a first collection of data of combined measurements of chlorophyll fluorescence and blue-green fluorescence throughout a period of continuous water stress development in plants of grapevine. These first results may indicate if the study of blue-green fluorescence is or not a good, new way, for stress monitoring in grapevine crops. The proposed experiment is:

1. Cultivation of grapevine plants at the greenhouse of Orsay University, under conditions of high light and temperature, as already done in previous experiments (Flexas et al., 1998a).
2. During the development of water stress in these plants, continuous monitoring of chlorophyll fluorescence and gas exchange ratios under greenhouse conditions, to get good estimations of F_s variations with water stress (Flexas et al., 1998a).
3. Also, leaf samples will be taken daily along the time of water stress development. These samples will be kept in cold several days until they were analysed using the synchrotron radiation. Excitation spectra of red and blue-green fluorescence will be determined.

Títol: Development and evaluation of improved fruit fly attractants in the Balearic Islands.

Centre: Departament de Biologia. Edifici Guillem Colom Casanovas.

Investigador principal: ALEMANY FERRÀ, Aina.

Categoria: TU (àrea de coneixement: Biologia Animal).

Inici: 2000.

Fi: 2001.

Socis:

Coordinador: International Atomic Energy Agency (IAEA)

Summary

Ceratitis capitata is in Spain a key pest due to its destructive effect on so many commercial fruits as citrus, peach and apricots. Other non commercial host as *Ficus carica* and *Opuntia ficus-indica* are also key host because of their importance as medfly reservoirs. At the moment, control measures are based on repetitive insecticides bait sprays which have serious effects on natural enemies and on fruit quality. In this sense, it is important to reduce insecticide treatments using environment-friendly and cost effective techniques as an alternative to conventional insecticides. Environmental protection measures are also increasing the need for alternatives to conventional pest control, and we have to consider that Menorca island and some areas of Ibiza island have been declared Reserves of Biosphere by UNESCO. Standard and effective monitoring systems are needed for IPM strategies, reflecting precise changes in temporal and spatial distributions of the medfly. Detection and monitoring population is critical in the Balearic Islands, because the possibility to control the pest at two moments over the year when the population is very low. At this moment, selective and effective captures will reduce the pest below the economic damage level, thus reducing or even eliminating the use of insecticides. On the other hand, the olive fly *Bactrocera oleae*, is also an important pest in Spain. This monophagous pest requires as in the case of medfly, an area-wide approach. For this reason, it is also important to develop effective attractants for monitoring and for use on a mass trapping strategy basis. Finally, geographical situation of the Balearic Islands is an adequate place to study isolated populations.



DEPARTAMENT DE BIOLOGIA FONAMENTAL I CIÈNCIES DE LA SALUT

•[Helth Telematics Training Network \(HEALTHNET\)](#).

PALOU OLIVER, Andreu; ROCA SALOM, M. del Pilar; OLIVER OLIVER, Jordi

Projecte núm.: CY/97/2/00988/PI/II.1.1.c/CONT.

Títol: Helth Telematics Training Network (HEALTHNET).

Centre: Departament de Biologia Fonamental i Ciències de la Salut. Edifici Guillem Colom Casanovas.

Participants de la UIB: PALOU OLIVER, Andreu; ROCA SALOM, M. del Pilar; OLIVER OLIVER, Jordi.

Socis:

Ministeri de Cultura (Xipre)
Institut Xipriota de Neurologia i Genètica (Xipre)
Associació Mèdica Panxipriota (Xipre)
Govern Balear (Espanya)
Institut de Medicina i Fisiologia Especials (França)
Institut de Ciències de la Computació. Fundació per a la Investigació i Tecnologia ia
(Grècia)
Coordinador: Universitat de Xipre (Xipre)

Summary

The specific objectives of the pilot are summarised as follows:

1. The identification of training needs for the promotion of health telematics technological research, development programme and there application.
2. The development of a health telematics network for training and the transfer of new technology.
3. The development of a new multimedia based training methodology for health telematics.
4. The development of a health telematics educational package organised in modules concerning specific skills which are necessary for teleworking in the health sector.
5. The training of trainer and pilot application involved will lead to the better use of new applications and advance the effectiveness of teleworking in the health sector.



DEPARTAMENT DE CIÈNCIES DE L'EDUCACIÓ

- FARRUTX, towards a township model of environmental interpretation in saturated touristic areas.
SUREDA NEGRE, Jaume

Referència: 99/136576.

Títol: FARRUTX, towards a township model of environmental interpretation in saturated touristic areas.

Centre: Departament de Ciències de l'Educació. Edifici Guillem Cifre de Colonya.

Investigador principal: SUREDA NEGRE, Jaume.

Categoria: CU (àrea de coneixement: Didàctica i Organització Escolar).

Inici: 2000. **Fi:** 2002.

Summary

This project is based on four fundamental premises:

(a) The consideration of interpretation as an instrument or strategy of management for making the conservation of the natural heritage compatible with the offer of services for visitors. With the application of interpretation programmes not only can we promote behaviour which is in harmony with the place visited, by raising the awareness of the importance of conserving it, by stimulating and persuading, but we can also promote economic and social development. Interpretation makes up one of the most effective indirect methods for controlling the impact of visitors, for redirecting the influx of tourist and for managing the natural and historic heritage.

(b) The consideration of a township as the most suitable space for the development of programmes which are directed at making economic development through tourism compatible with environmental conservation.

(c) The widely accepted consideration that educational strategies directed at solving environmental problems must intervene from the local dimension of an environmental problem, from the conservation of a territory, of a heritage asset, etc. so as, from here, to begin to introduce a broader, worldwide dimension of the environmental issue.

(d) The observation of the scarce development of interpretation in countries in the south of Europe. This situation is in contrast with the capacity that this strategy possesses as a means for the management of visitors.

This project seeks to design, perform and test an environmental programme that makes possible the definition of a model for carrying out environmental interpretation programmes in tourist resort of Mediterranean Europe. Within this framework, the main goal of the project is to offer a product -the model- based on the theory and the practice -the programme- that can become a motivating and exemplifying element in the use of interpretive and educational strategies for the protection and improvement of the environment in tourist areas.



DEPARTAMENT DE CIÈNCIES MATEMÀTIQUES I INFORMÀTICA

- **Successful User Centred Systems Engineering Development and Environment (SUCSEDE).**
PUIGJANER TREPAT, Ramon
- **Viscosity solutions and their applications.**
CASELLES COSTA, Vicent
- **Multi-site cooperative 3D design system for architecture (M3D).**
LUO, Yuhua

Referència: Esprit Project 23242.

Títol: Successful User Centred Systems Engineering Development and Environment (SUCSEDE).

Centre: Departament de Ciències Matemàtiques i Informàtica. Edifici Anselm Turmeda.

Investigador principal: PUIGJANER TREPAT, Ramon.

Categoria: CU (àrea de coneixement: Arquitectura i Tecnologia de Computadors).

Inici: 1998. **Fi:** 2000.

Socis:

Quality Systems and Software Limited (Regne Unit)

Caixa de Balears 'Sa Nostra' (Espanya)

University of Ulster (Regne Unit)

Coordinador: Matra Bae Dynamics Limited (Regne Unit)

Summary

There are many examples of failures in the development of both Management Information Systems (MIS) and Real Time and Embedded Systems (RTES) domains. These failures can almost always be traced to mis-management in the early phases. Therefore this project will concentrate on these phases to generate soundly based development processes in the transformation of user requirements into an architectural design. It is also recognised that there is still significant immaturity in the way in which software intensive computer based systems are developed. This indicates that there are serious gaps in processes and methods which are in general use. The methods used offer only single point solutions; the tools tend to be stand-alone with no facility for integration. The situation is not improved by the lack of any proven, universally accepted, foundation for the engineering of software-based systems. What is required is sound architectural foundation capable of providing a meaningful understanding of crucial aspects such as: system behaviour, resource utilisation, performance, reliability, maintainability and reconfigurability. Developers tend not to adopt component based construction (composition) strategies and thus cannot exploit re-use during design, implementation and evolution in service. The need for V&V during the early stages is not generally recognised, and its absence contributes to many problems in development projects. The issue of risk is an all pervading aspect of systems engineering which is not given full consideration during the formative early stages. The increasing number of computer base systems indicates that it is necessary to improve the process so that better quality systems can be developed and also that these better quality systems must be developed significantly more quickly than is currently the norm.

Referència: FMRX-CT98-0234.

Títol: Viscosity solutions and their applications.

Centre: Departament de Ciències Matemàtiques i Informàtica. Edifici Anselm Turmeda.

Investigador principal: CASELLES COSTA, Vicent.

Categoria: TU (àrea de coneixement: Matemàtica Aplicada).

Inici: 1998. **Fi:** 2001.

Socis:

Université de Tours (França)
Rheinische Friedrich-Wilhelms-Universität (Alemanya)
Foundation for Research and Technology-Hellas (Grècia)
Universita degli studi di Milano (Itàlia)
Universita degli studi di Padova (Itàlia)
Universita degli studi di Roma-La Sapienza (Itàlia)
Universidad de Las Palmas de Gran Canaria (Espanya)
Kungl Tekniska Högskolan (Suècia)
Coordinador: Université de Paris IX-Dauphine

Summary

This is a proposal for research on problems related to the theory of viscosity solutions and its applications. The theory of viscosity solutions is one of the most central and fastest growing areas in the field of nonlinear partial differential equations. Its scope extends from rather deep and challenging mathematical problems to the modelling and analysis of a large number of applied problems in science, engineering, atmospheric/ocean studies and economics, which include, among others, phase transitions, moving fronts, statistical mechanics, combustion, turbulent reaction-diffusions, optimal and stochastic control, mathematical finance, image processing, etc... The understanding of such applications obviously requires, in addition to theoretical results, extensive computations and efficient numerical methods, which can be derived and analysed using the theory of viscosity solutions.

The long list of applied areas and problems which can be studied using methods related to viscosity solutions, the rather difficult and challenging mathematical problems that encompasses as well as the astonishing progress already achieved, in such a relatively short (for mathematics) period, using viscosity solutions has generated an ever growing interest in Europe, US, Japan and China. An indication of the growing importance of this theory for mathematics is that, since 1981 when M. G. Crandall and P.-L. Lions introduced the concept of the viscosity solution, more than one thousand papers related to the subject have been published in mathematical journals of high quality, a rather amazing fact for mathematics. A proof of the importance and relevance of viscosity solutions for applied mathematics is the fact that they have already been used successfully to analyse a large number of questions related to the applications mentioned above. Europe is in a unique position to be at the forefront of this theory. Some of the leading groups in the world in the theory of viscosity solutions and its applications are located in Europe and all of them are participating in this project. Bringing them together increases the talent, the ability and the expertise needed to address the new problems. The resulting interaction among groups working in some aspects of the applications will definitely increase the understanding and provide the necessary input and ability to address the even more challenging problems

lying ahead of us. Besides its mathematical importance, further progress in the theory of viscosity solutions and its applications will lead to better, and, in some occasions, important, understanding in sciences like physics, chemistry, in atmospheric-ocean studies and medicine through progress in, for example, material sciences, image processing, front propagation, microphysics of clouds, in engineering and technology in general, through progress in combustion, material sciences (crystal growth, phase transitions) and image processing, and in socio-economic issues, like mathematical finance, environmental economics, the study of the environment, etc. Finally carrying out research in the theory of viscosity solutions and the activities surrounding this research will result in educating a whole new generation of young researchers, the so-called New Applied Mathematicians, who will be able to do modelling, theoretical work at the highest possible level of Mathematics and numerical computations, and will be involved in real problems.

Referència: Esprit Project 26287.

Títol: Multi-site cooperative 3D design system for architecture (M3D).

Centre: Departament de Ciències Matemàtiques i Informàtica. Edifici Anselm Turmeda.

Investigadora principal: LUO, Yuhua.

Categoria: AS. ESTR. (àrea de coneixement: Ciències de la Computació i Intel·ligència Artificial).

Inici: 1998.

Fi: 2001.

Socis:

Associação para o Desenvolvimento das Telecomunicações e Técnicas de Informatica
(Portugal)

Grupo ARMAQ I+D (Espanya)

European Design Centre BV (Holanda)

IDOM Ingenieria y Sistemas SA (Espanya)

Oficina de Arquitectura, Urbanismo, Construção e Imagens, LDA (Portugal)

Superscape LTD (Regne Unit)

Coordinador: Universitat de les Illes Balears

Keywords: high performance computing and networking, networked architecture design, 3D CAD, cooperative work, virtual studio, multimedia interactive communication service.

Summary

The objective of the project is to integrate the CAD technology with the VR and high performance network technology to be a prototype multi-site cooperative 3D system for architecture design. The foreseen prototype system will extend the major functions of the single user CAD architecture design tools to a networked cooperative system at multiple locations. Real time interactive cooperative design with audio/video conferencing will be realized in the systems with other off-line functions. The current target geographic area to cover is at the European scale. It can be extended in the future. For cooperative architecture design, real time cooperative design working sessions linking long distance users will be available. The project will develop all the necessary multi-site cooperative editing tool, real time distributed visualisation tool and network communication tool for this purpose. As an important element, a shared databasa containing all the architecture designs information, not only geometry, but other related information will be developed for the system. The multi-site users will be able to input their own 3D designed components together into the system to form a global design, visualize them, modify the attributes of the component and the whole environment. Modifications of the design will be sent back to the related users. High volume, high speed network connection will be established for data transmission including image data, digitized audio/video signal, text, graphic primitives, control signal, etc. Euro-ISDN network will be considered first for the system, due to the wide availability and flexibility of changing the bandwidth according to the workload. It will be linked to the local ETHERNET or ATM networks. An interactive approach will be taken for the development of the project. The rich experience of the user partners in the construction industry will be most valuable for the project since the system will be most valuable for the project since the system will be developed for their use. The user partners in the project will be actively involved in the project definition phase, project development phase and the integration phase. In general, M3D system development will

be user-oriented instead of technology-push. The user partners will play a major role in the definition of the project. The users will also make simple trial in the prototype system. They will test critical elements during the development phase such as the multi-site editor, distributed visualiser, the network connection, etc. The iterative approach will be even emphasized in the third project year. The test results of the user to all the elements will be taken into account for the integration of the alpha, and beta version of the system (user feedback integration). They will have a full trial test using real like architecture project during the third project year. The foreseen prototype system will supply the necessary turnkey technology for a significant change of the traditional architecture design process in Europe. The project will demonstrate how the cooperative networked integrated system of architecture can provide much higher accuracy, efficiency, and flexibility in the architecture design process. It will also show the potential of the new market in Europe for architects in each country to work in international consortiums within architectural projects. The result of the project will facilitate the application of the HCPN in this high potential, cata extensive industry sector. It will contribute to strengthen the competitiveness of the european architecture design sector. The consortium will pay special effort for the exploitation of the project result. To make the industry aware of the new system and collect the feedback from the industry during the project time, dissemination activities such as workshops and demonstrations will be organized. The organization work for exploitation of the project result will be implemented at two different levels: within the consortium and outside the consortium. A product will be defined from the project and commercialization of the product will be strongly welcome.



DEPARTAMENT DE CIÈNCIES DE LA TERRA

- Design and evaluation of residential patterns in the Mediterranean region appropriate to sustainable development of environmentally deteriorated rural areas (ARTEMIS).
PETRUS BEY, Joana Maria
- European Shore Platform Erosion Dynamics (ESPED).
FORNÓS ASTÓ, Joan Josep
- Articulations du tourisme international et du tourisme national dans les pays des rives sud et est de la Méditerranée.
SEGUÍ LLINÀS, Miquel

Referència: ENV4-CT97-0656.

Títol: Design and evaluation of residential patterns in the Mediterranean region appropriate to sustainable development of environmentally deteriorated rural areas (ARTEMIS).

Centre: Departament de Ciències de la Terra. Edifici Guillem Colom Casanovas.

Investigadora principal: PETRUS BEY, Joana Maria.

Categoria: TU (àrea de coneixement: Anàlisi Geogràfica Regional).

Inici: 1998. **Fi:** 2000.

Socis:

Conseil d'Architecture d'Urbanisme et d'Environment. Section Recherche (França)

Instituto Superior de Agronomia. Secção Autonoma de Arquitectura Paisagista.

Universidade Técnica de Lisboa (Portugal)

Department of Urban and Regional Planning. Aristotle University of Thessaloniki (Grècia)

Instituto di Ricerche Ambiente Italia Srl (Itàlia)

Coordinador: Departament d'Urbanisme i Ordenació del Territori. Universitat Politècnica de Catalunya (Espanya)

Summary

Objetives:

1. Develop a series of designs of new sustainable patterns for the low density residential areas that improve the environmental adequacy of current solutions. In that way proposed patterns have to be adapted to the specific character of Mediterranean landscapes as a climatic and cultural region. These patterns will be designed to act today in the same way as traditional constructions in urban and rural developments have done versus environmental policies and will function as an appropriate alternative to current touristic and suburban settlements very inadequate from the point of view of sustainability and not concerned with supporting and improving the identity of regions in South Europa.
2. The design of an informatic product that permits to introduce projectual arguments in the definition of parameters that describe territories in a global environmental vision and then an IAM -integrated assessment model- which introduces, in addition to the well -known system of environmental factors of common IEA, the visual and cultural aspects and, in that sense, to integrate planning policies with design issues of transformation.

Work content outline

1. Elaboration of an IAM (4 entries: environmental factors, image and cultural heritage aspects, planning and management, socio-anthropologic factors).
2. Design of new touristic/low density residential patterns.
3. Definition of the conditions assumed by the patterns (feedback the IAM).
4. Verify the adequacy of patterns. Introduction of uncertainty factors as probable alternative scenarios. Readjustment of the design of the patterns.
5. Verify the capacity of the areas through the multiplication of the selected patterns, establishment of limiting situations.
6. Configuration of criteria of implementation of new patterns in the Mediterranean region.
7. Final formulation of the Integrated Environmental Assessment.

From the point of view of the methodology, two entries of work are proposed. The first deals with the analysis of 6-12 units of 400 km², to the scale of 1:25.000 (during the

process through a sequential zoom we reach the scale 1:2.000) in countries such as Spain, Portugal, Greece, South of France and the South of Italy, understood as reference areas of characteristic landscapes. The second one consist of the research of new patterns based on recent needs associated with touristic developments and new lifestyles such as rural and “telework” developments and the study of the traditional types of residential units to the scale 1:2.000. Both are the basis to elaborate an IAM that can be translated in an informatic product directed to evaluate criteria of a sustainable implementation of new residential patterns in the mediterranean region.

Claimed innovative aspects of this proposal include:

- the introduction of visual parameters in the environmental assessment. The role of the image is considered basic in the pondering of values, especially in areas where sustainability is supported by the touristic development or in deteriorated ones where the achievement of a “good landscape” is vital for their revaloration.
- the incorporation of cultural factors in the environmental assessment which are considered as a means for the modeling of the form and the establishment of strong points in the area of cultural heritage. In that sense, the study of basic traditional settlements is of great significance.
- to consider the feed back process -patterns-IAM- to the re-design of new patterns and first proposal of IAM with the aim on one hand to integrate patterns into appropriate areas and on the other to directly improve both them and the IAM.

Referència: MAS3-CT98-0173.

Títol: European Shore Platform Erosion Dynamics (ESPED).

Centre: Departament de Ciències de la Terra. Edifici Guillem Colom Casasnovas.

Investigador principal: FORNÓS ASTÓ, Joan Josep.

Categoria: TU (àrea de coneixement: Estratigrafia).

Inici: 1998. **Fi:** 2001.

Socis:

Institut de Géographie. Université de Nantes (França)

Centro de Geologia. Fundação da Faculdade de Ciências da Universidade de Lisboa
(Portugal)

Department of Nature and Environment-Earth Sciences. University of Karlstad (Suècia)

Coordinador: School of Chemistry, Physics and Environmental Science. University of
Sussex (Regne Unit)

Summary

The project aims to improve scientific knowledge and understanding of the development and downwearing of shore platforms and of the relationships between shore platform change and the rates of retreat of sea cliffs on the landward side of the platforms. Shore platforms are a major component of European rocky shore environments, but in the past there has been a dearth of hard data concerning the weathering and erosion of the platforms on which to base long-term planning strategies. The project brings together a multidisciplinary team of scientists from universities in five EU member states to employ a newly developed laser scanner and a standardised methodology. It will further understanding of the development and dynamic of shore platforms in contrasting rock types at sites representative of the full range of wave and tidal environments experienced around the shores of Europe, from the Mediterranean northwards along the Atlantic coast and into the Baltic.

Projecte: Mediterranean Programme (Robert Shuman Centre for Advanced Studies).

Títol: [Articulations du tourisme international et du tourisme national dans les pays des rives sud et est de la Méditerranée.](#)

Centre: Departament de Ciències de la Terra. Edifici Guillem Colom Casasnovas.

Investigador principal: [SEGUÍ LLINÀS, Miquel.](#)

Categoria: TEU int. (àrea de coneixement: Anàlisi Geogràfica Regional).

Inici: 2000. **Fi:** 2002.

Socis:

Institut Universitarie Européen de Florence (Itàlia)

Coordinador: Faculté des Lettres et des Sciences Humaines de Rabat. Université
Mohamed V-Agdal (Marroc)

Summary

The research program of the Mediterranean Programme is structured in the following way. It is characterised by one key research perspective and structured into research topics. The research perspective is that flows of persons, goods, and ideas between the Northern (Europe) and Southern Mediterranean, as well as among the Southern Mediterranean countries are fundamental in understanding the crucial dynamics in the area. The Mediterranean Programme has indicated a few research topics. In the realm of socio-political studies (alphabetical order): Business and politics, euro-mediterranean partnership, images and discourses, Islam and politics & economics, migration, political regime analysis. In the realms of political economy studies (alphabetical order): competition policy and implementation, development of financial markets-banks, the stock exchange and order financial intermediaries, private sector and corporate structures, privatization policy and practise.



DEPARTAMENT DE DRET PRIVAT

- **Electronic Commerce Legal Issues Platform (E-CLIP II).**
CAVANILLAS MÚGICA, Santiago
- **Information Network for Business & Employment Creation (INFOBusiness).**
CAVANILLAS MÚGICA, Santiago
- **Study and implementation of an extra-judicial body for the settlement of consumer disputes in the field of electronic commerce.**
CAVANILLAS MÚGICA, Santiago

Referència: IST-1999-12278.

Títol: [Electronic Commerce Legal Issues Platform \(E-CLIP II\)](#).

Centre: Departament de Dret Privat. Edifici Anselm Turmeda.

Investigador principal: [CAVANILLAS MÚGICA, Santiago](#).

Categoria: CU (àrea de coneixement: Dret Civil).

Inici: 2000.

Fi: 2001.

Socis:

Bureau Van Dijk Ingénieurs Conseils en Gestion (BvD) (Bèlgica)

Facultés Universitaires Notre-Dame de la Paix (CRID) (Bèlgica)

Queen Mary and Westfield College (QMW) (Regne Unit)

University of Oslo (NRCCL) (Noruega)

Coordinador: Westfaelische Wilhems-Universitaet (ITM) (Alemanya)

Summary

Policy questions are considered as some of the most important barriers vis-à-vis the development of electronic commerce for different reasons. At the same time, regulatory and self-regulatory solutions are a key element to enhance trust in e-commerce both in business-to-business transactions and in business-to-consumer ones. Nevertheless, the recent European Commission Proposal for a Directive on certain legal aspects of electronic commerce in the internal market has clearly underlined the significance of legal costs for operators wishing to develop on-line activities. According to the survey undertaken by DGXV, 36 % of respondents did not consider the legal situation of their product or services. A third thereof could not afford to undertake an evaluation of the regulatory framework, such an analysis being considered as too expensive. The estimated costs given by those operators having carried out such an evaluation, are very high. Therefore, a great number of SMEs, not capable of affording such costs, could be discouraged from exploiting new possibilities offered by the information society, or could run into illegal practices, etc.

ECLIP II Project seeks to fill this gap by analysing the delicate above-mentioned new questions, and by assisting all the interested actors on that basis. Therefore, the main objectives of ECLIP II are :

1. increase awareness of the regulatory framework in which e-commerce is developing and of the legal, extra-legal (such as self-regulation, alternative dispute resolution, labelling of web sites, ...), and technological (such as Privacy-Enhancing Technologies, PICS, Electronic Copyright Management Systems, watermarking, electronic signature, etc...) solutions to policy issues
2. provide education and information on the regulatory framework of electronic commerce
3. set up an distance teaching program on the legal issues of e-commerce
4. help RTD projects, funded by the 5th Framework Program, to address and integrate early on ethical and legal concerns in the design and development of their e-commerce project
5. build practical tools and guidelines to help consideration of legal constraints
6. initiate, carry out and stimulate new study on the policy issues of e-commerce, namely by integrating in the reflection extra-legal approach, such as self-regulatory mechanisms or best practice, and technological resources and solutions
7. support and stimulate EC policy in the field of e-commerce, namely by highlighting the need for legislation or discrepancies and inconsistencies in the existing Member States or European regulatory framework.

Referència: PUB1222-INFOBUSINESS 26443.

Títol: Information Network for Business & Employment Creation (INFOBusiness).

Centre: Departament de Dret Privat. Edifici Anselm Turmeda.

Investigador principal: CAVANILLAS MÚGICA, Santiago.

Categoria: CU (àrea de coneixement: Dret Civil).

Inici: 2000. **Fi:** 2001.

Socis:

BITEL, Balears Innovació Telemàtica, SA (Espanya)

Organismo Autónomo Informática y Comunicaciones de la Comunidad de Madrid (ICM)
(Espanya)

STE Consulting, SA, Grupo Altran (STE) (Espanya)

The National Microelectronics Applications Centre Limited (MAC) (Irlanda)

Wirtschaftsförderungsgesellschaft für Das Land Sachsen-Anhalt MBH (Wisa) (Alemanya)

Teleport Sachsen Anahalt GMBH (TSA) (Alemanya)

Shannon Free Airport Development Company Limited (SHANNON) (Irlanda)

Fábrica Nacional de Moneda y Timbre (FNMT) (Espanya)

Coordinador: Govern de les Illes Balears-Fundació IBIT (Espanya)

Summary

Public Administration organization and proceedings have to be transparent for the citizens. Public administrations should be seen as a set of separate entities, without any sort of relationship among them, geographically scattered and with different opening hours to the public. On the contrary, the concept of "one stop shopping" will imply a better accessibility and a quick answer by Public Administrations. With the introduction of the new technologies, the service quality will be significantly improved and thus enhancing the image that society has of the public sector in general. Public Administration on line will allow citizens to break with the geographic and demographic barriers and the lack of proper information thereby boosting the interaction with citizens. Obviously, one of the issues that European Public Administrations need to improve is their efficiency and effectiveness in order to increase the standard of living of the present residents, to improve business conditions and to facilitate companies creation. Public Administrations cannot follow traditional lines; they have to firmly commit themselves for the integration of new technologies as an instrument for promoting development. Within economic and social policy of the European Union and its Member States, employment creation is on the top of the agenda of all governments. One of the most successful ways to support employment creation are to promote competitive companies, in particular SMEs, and the setting up of new ones. Even if national and regional governments make great efforts to attract new businesses the reality demonstrates that there are a great number of barriers and impediments to create new business.

One of these barriers is the infinity of bureaucratic procedures that have to be fulfilled in different Public Administration (national, regional and local) until arriving to constitute formally a company. To request a presentation, a subsidy or a license to constitute a company is often a long process. Citizens who wish to set up their own company are victims of the lack of information, a heavy administrative burden, etc. These problems are even more important and difficult to overcome if a European citizen wants to establish his company outside of the region or country of origin. Different legislative documents in

different languages, the lack of knowledge regarding procedures to follow or which administration to attend, poses a real obstacle in time and money for SMEs.

It is evident that the European Public Administrations need to improve their efficiency to increase the standard of living of the residents, to improve economic conditions, and to facilitate the business creation. European Public Administrations can not continue to follow traditional approaches and procedures, they need to encourage and foster the transfer of know-how and the integration of the new technologies as instrument to promote regional development. The INFOBusiness project (Information Network for Business and Employment Creation) aims at reducing administrative barriers and support citizens in the process of creation a new business. This will be achieved by a greater transparency on the steps required to set up a new business and the electronic procurement of the documentation. The consortium set up a Site and a database, containing the necessary documents from different parts of the administration and provide easy to understand guidance to entrepreneurs on how to overcome the administrative barriers.

INFOBusiness objectives are:

- To facilitate administrative procedures in the business creation
- To help to overcome administrative barriers
- To collaborate with entrepreneurial organizations
- To review administrative procedures for setting up new business
- To collaborate with public and private employment agencies to provide required staff
- To create a link to the transnational employment seeker database EURES

These objectives will be achieved through:

- Changes in the procedures
- Public Administrations focus on client
- Improvement of the communication among and within Administrations
- Continuously improved business environment

The bottom line of INFOBusiness will be:

- To develop a pilot system that brings to administrations in the area of business and employment creation closer to the public and to prove its validity of this system and its applicability by any European Administration
- To establish a European multilingual information network for business and employment creation on the Internet integrates know-how and documentation of several Public Administration of three different countries (Spain, Ireland and Germany)

The strategical importance of this project for the Administrations and entities involved guarantees its continuity, as thanks to INFOBusiness, the wealth and employment level in the regions will increase. Moreover, due to the INFOBusiness partners, it will be easier to draw the attention from other European administrations for their possible integration into the system in future phases.

Referència: 2000/9102 ECODIR.

Títol: Study and implementation of an extra-judicial body for the settlement of consumer disputes in the field of electronic commerce.

Centre: Departament de Dret Privat. Edifici Anselm Turmeda.

Investigadora principal: CAVANILLAS MÚGICA, Santiago.

Categoria: CU (àrea de coneixement: Dret Civil).

Inici: 2000. **Fi:** 2001.

Socis:

Coordinador: Centre de Recherches Informatique et Droit (CRID) (França)

Summary

The action of the European Commission concerning *extra-judicial body for the settlement of consumer disputes in the field of electronic commerce* is aimed at enforcing European consumers rights in the context of the Internet. The aim of the ECODIR project is to set up a prototype devoted to the electronic resolution of consumer disputes arising on the Internet. The prototype created will allow all steps of the resolution process to be electronic. To reach this objective, the ECODIR project has a double advantage:

- First, the ECODIR project has constituted a Consortium of experienced partners, including European Universities as well as American partners specialised in the resolution of disputes on the Internet. Those American partners are the CRDP (Centre de Recherche en Droit Public) of the University of Montreal, who has set up the CyberTribunal (<http://www.cybertribunal.org/>); and Professor Ethan Katsh from the University of Massachusetts who has created the Online Ombuds Office (<http://www.ombuds.org>).
- Second, the approach of the Consortium is multi-disciplinary: it takes into account the European specificity on a cultural, social, organisational, economical, institutional and legal basis.

The participation in the Consortium of this Canadian partner brings the following advantages:

- It allows the ECODIR project to benefit from the Canadian prototype and to implement it in Europe;
- It enables the ECODIR to provide European consumers, as soon as the project begins, with the possibility to submit their disputes to the Canadian body, having the disputes treated by a European secretariat;
- It allows the project to take an international dimension due to the participation of the Canadian partner, ensuring consumers to enforce their rights granted by national and European legislation.

It is important to mention that the CyberTribunal already takes into account the principles set up in the European Commission Recommendation on the principles applicable to the bodies responsible for out-of-court settlement of consumer disputes (refer to <http://www.cybertribunal.org/english/html/principles.htm>). One important fact about the practice of the CyberTribunal, 90% had a European dimension (i.e. at least one of the party was European). The ECODIR project plans to implement a European prototype approximately at the half of the project (i.e. beginning of 2001). This implementation at the half of the project is aimed at ensuring a monitoring by the partners of the project in order to improve the prototype until the end of the project. Finally, the ECODIR project should deliver an operational prototype consumers could refer to when a dispute arises on the Internet.



DEPARTAMENT D'ECONOMIA I EMPRESA

- EUROMOD: an integrated european benefit-tax model.
SPADARO, Amedeo

Referència: CT97-3060. Programa TSER.

Títol: [EUROMOD: an integrated european benefit-tax model.](#)

Centre: Departament d'Economia i Empresa. Edifici Mateu Orfila i Rotger.

Investigador principal: [SPADARO, Amedeo.](#)

Categoria: TU int. (àrea de coneixement: Economia Aplicada).

Inici: 1997.

Fi: 2000.

Socis:

Coordinador: University of Cambridge (Regne Unit)

Summary

It is proposed to construct an integrated benefit-tax model covering all 18 European countries, focused on social and integration policies and their implications for the economic resources of people who are socially excluded. The 'model' will be independent of any particular theoretical perspective, relying on the richness of the information provided in available household micro-data. It will therefore be of considerable use in the evaluation of a wide range of policy proposals in many contexts over a long period of time. The model, EUROMOD, will provide a consistent Europe-wide framework for the analysis of public policy changes and their impact on the socially excluded. It will make a significant contribution to European social science research infra-structure, and hence to the objectives of Area III.5.

It is proposed to build EUROMOD in conjunction with a group of potential users of the model's output. In addition to actually constructing the model, a preliminary set of analyses will be carried out in collaboration with this group. These analyses will focus on some major issues related to the promotion of social integration.

The immediate aim of the proposal is to build a durable and robust framework for Europe-wide policy analysis over the short-term. It will also provide a platform for more speculative and experimental research exercises in the future. The model will be built with both these objectives in mind.

EUROMOD will be of value both in assessing the consequences of consolidated social policies and in understanding how different countries may contribute to the common objective of reducing social exclusion. It will be of as much significance in evaluating national policies as in evaluating policies at the level of the European Union.



DEPARTAMENT DE FÍSICA

- Setting-up a pilot inter-university centre at the level of Electrotechnics Department.
GARCIA MORENO, Eugeni
- Quantum structures (QSTRUCT).
SAN MIGUEL RUIBAL, Maximino
- Theoretical foundations of sources for gravitational wave astronomy of the next century: synergy between supercomputer simulations and approximation techniques.
BONA GARCIA, Carles

Referència: S-JEP-8001-94. Programa europeu estructural JEP TEMPUS.

Títol: [Setting-up a pilot inter-university centre at the level of Electrotechnics Department.](#)

Centre: Departament de Física. Edifici Mateu Orfila i Rotger.

Investigador principal: [GARCIA MORENO, Eugeni.](#)

Categoria: CU (àrea de coneixement: Tecnologia Electrònica).

Socis:

Catholic University of Leuven (Bèlgica)

University of Southampton (Regne Unit)

University of Gent (Bèlgica)

Technische Universität Chemnitz (Alemanya)

University of Naples (Itàlia)

Technical University of Salonic (Grècia)

Coordinador: Universitatea Technica diu Cluj-Napoca (Romania)

Keywords: electromagnetic fields.

Summary

- Curriculum development in teaching areas of Electromagnetic Field Theory, Computational Models and Methods in Analysis and Synthesis of Electromagnetic Fields.
- Organization of a Post Graduate Training Center of CAD/CAE in Electrical Engineering.
- Mobility of romanian students and professors to EC countries and also mobility of foreigner professors coming to Romania to deliver intensive courses.

Referència: ERB FMRX-CT96-0077.

Títol: Quantum structures (QSTRUCT).

Centre: Departament de Física-IMEDEA. Edifici Mateu Orfila i Rotger.

Investigador principal: SAN MIGUEL RUIBAL, Maximino.

Categoria: CU (àrea de coneixement: Física de la Matèria Condensada).

Inici: 1996. **Fi:** 2000.

Socis:

Universität Innsbruck (Àustria)
Université Pierre et Marie Curie (França)
Ecole Normale Supérieure (França)
Istituto Nazionale per la Fisica della Materia (Itàlia)
Max-Planck-Institut für Quantenoptik (Alemanya)
Coordinador: University of Strathclyde (Regne Unit)

Summary

The development of increasingly sophisticated lasers, nonlinear optical materials, detectors and traps has made possible the observation of an impressive range of nonlinear and quantum optical effects. Among these are the self-organisation of the light produced by nonlinear optical systems, the production of intrinsically quantum states of light and the trapping and cooling of small numbers of atoms or ions. The principal objective of this network is to bring together expertise in nonlinear optical patterns, atom and ion trapping and cooling, and the quantum properties of light in order to carry out a comprehensive study of the quantum features associated with self-organising systems. To date, almost all of the work on such systems has been limited to the classical regime, but our experience with quantum effects leads us to believe that we can extend these studies into the fully quantum regime of operation. Indeed, the teams forming our proposed network are uniquely qualified to undertake this study. Such an extension is important and novel for two reasons: Firstly, this is a new regime of optical physics at the interface between nonlinear dynamics and quantum physics and it provides scope for new and rich behaviors such as those predicted in studies of quantum chaos. Secondly, as optical devices get smaller we can expect quantum effects become of increasing significance in their operation, with the most interesting behavior arising from the interplay between nonlinearity and quantum effects. Although there is a strong interdependence between the underlying tasks of these two research topics, it is natural to divide our programme into two main objectives:

- Quantum effects in optical patterns (quantum images). To carry out an experimental, computational and theoretical study of quantum properties associated with spatio-temporal patterns produced in optical parametric oscillators (OPO), intracavity second harmonic generation (ISHG) and Kerr media.
- Preparation and study of ordered arrays of ions and atoms. To carry out an experimental, computational and theoretical study of the quantum properties associated with ordered arrays of trapped atoms and ions.

Referència: HPRN-CT-2000-00137.

Títol: Theoretical foundations of sources for gravitational wave astronomy of the next century: synergy between supercomputer simulations and approximation techniques.

Centre: Departament de Física. Edifici Mateu Orfila i Rotger.

Investigador principal: BONA GARCIA, Carles.

Categoria: CU (àrea de coneixement: Física Teòrica).

Inici: 2000. **Fi:** 2003.

Socis:

Friedrich Schiller Universität Jena (Alemanya)

Observatoire de Paris. Section de Meudon (França)

Universitat de València. Estudi General (Espanya)

Aristotle University of Thessaloniki. Department of Physics (Grècia)

Universita di Roma 'La Sapienza'. Dipartimento di Fisica (Itàlia)

Scuola Internazionale Supeiore di Studi Avanzati (Itàlia)

University of Southampton (Regne Unit)

University of Portsmouth (Regne Unit)

Coordinador: Max Planck Institut für Gravitationsphysik. Albert Einstein Institut
(Alemanya)

Summary

There are five major objectives that will be achieved through this Network, important for GWA, that will not be possible without it. In summary they are: (1) The formation of a close alliance among the different expert groups to solve urgent problems required for GWA, too large and complex for any single group to tackle. Such a Network is needed, but does not exist at present. (2) The development and training of a young community of researchers to populate this emerging research area of GWA. Although there are strong, isolated European groups working in relevant research areas, there is no coordinated effort to build up the broad-based expertise required for a systematic attack on these problems. (3) The development of a community simulation code for relativistic astrophysics: Cactus. Simulation tools are essential for the success of this research area. As described below, the development and use of Cactus will be an important part of the training program for this Network. (4) The development of appropriate approximation tools, such as perturbation and post-Newtonian theory, to provide better physical understanding and conformation of numerical simulations. Without such schemes, simulations may provide little insight into the actual physics, and may be completely misinterpreted. Further, semi-analytic results may be used to confirm and validate numerical simulations in appropriate regimes. (5) The application of these tools to a set of core astrophysics problems, considered among the most urgent for the detection and interpretation of the first signals seen in the GEO and VIRGO detectors, and also seen as excellent focus problems for the development and training of the community and its research tools. These problems include GW signals from NSs and BHs.



INSTITUT MEDITERRANI D'ESTUDIS AVANÇATS (IMEDEA)

- Otolith microchemistry as a means of identifying stocks of deep-water demersal fish (OTOMIC).
MORALES NIN, Beatriu
 - European Fish-Network (EFAN).
MORALES NIN, Beatriz
- Impact fishery and environment on hake recruitment in Northwester Mediterranean (LLUCET).
MORALES NIN, Beatriu
 - Environment and biology of deep-water species *Aphanopis carbo* in NE Atlantic: basis for its management (BAS BLACK).
MORALES NIN, Beatriu
 - Effects of entrophicated seawater on rocky shore ecosystems studied in large littoral mesocosm (EULIT).
DUARTE QUESADA, Carlos
- Prediction of the resilience and recovery of distribeb coastal communities in the tropics (PREDICT).
DUARTE QUESADA, Carlos
- Implementation and networking of large-scale long-term marine biodiversity research in Europe (BIOMARE).
DUARTE QUESADA, Carlos
 - Microlasers and cavity QED.
SAN MIGUEL RUIBAL, Maximino
 - VCSELs for Information Society Technology Applications (VISTA).
SAN MIGUEL RUIBAL, Maximino
- Quantum information processing & communications network of excellence (QUIPROCONE).
SAN MIGUEL RUIBAL, Maximino
 - Processing of information by arrays of non-linear optical solitons (PIANOS).
BALLE MONJO, Salvador
 - Non linear and non-adiabatic magnetohydrodynamic waves in solar coronal structures.
BALLESTER MORTES, Josep L.
 - Interaction of magnetohydrodynamic waves and flows in astrophysical plasmas.
BALLESTER MORTES, Josep L.
 - Study on obesity and functional foods in Europe.
PALOU OLIVER, Andreu
- Body weight and energy expenditure. Functional food and nutrition technology.
PALOU OLIVER, Andreu
 - Wavelength scale photonic components for telecommunications.
SAN MIGUEL RUIBAL, Maximino
 - Semiconductor devices for signal processing.
BALLE MONJO, Salvador
- Aplicaciones del principio de máxima entropía al estudio de sistemas ligados por interacción electromagnética y/o fuerte en el espacio de coordenadas y en el espacio de momentos.
CASAS AMETLLER, Montserrat; PLASTINO, Ángel

Projecte núm: FAIR-CT98-4365.

Títol: Otolith microchemistry as a means of identifying stocks of deep-water demersal fish (OTOMIC).

Centre: Institut Mediterrani d'Estudis Avançats (IMEDEA).

Investigadora principal: MORALES NIN, Beatriu.

Categoria: Investigador científic CSIC.

Inici: 1999. **Fi:** 2001.

Socis:

University of Liverpool. Port Erin Marine Laboratory (Regne Unit)

Coordinador: Scottish Association for Marine Science (Regne Unit)

Summary

The objective of this proposal is therefore to investigate the elemental composition of the otoliths of deep-water fish species using the latest ICP-MS techniques.

Projecte núm: FAIR-CT96-1304.

Títol: [European Fish-Network \(EFAN\)](#).

Centre: Institut Mediterrani d'Estudis Avançats (IMEDEA).

Investigadora principal: [MORALES NIN, Beatriz](#).

Categoria: Investigador científic CSIC.

Inici: 1996. **Fi:** 2000.

Socis:

Coordinador: Institut of Marine Research "Flodewinger Marine Research Station"
(Noruega)

Summary

To develop a competent network of laboratoires with the capacity to develop, conduct and coordinate collaborative research and training, and thereby ensure that age determination becomes a reliable element of the assessments underlying the scientific management advice on fisheries and environmental resources

Objectives:

To stimulate international collaboration by offering services and facilities to workshops, conferences, visiting scientists and students focussing on ageing research and methods.

To recommend practical development of existing ageing methods, including computer techniques, with a view towards rationalising current practices while satisfying the demands for speed, accuracy and consistency.

To develop and update a library of methods descriptions and reference collections for different species and stocks for use in training and intercalibration exercises.

To improve the accuracy of current and new ageing procedures by recommending a range of verification procedures based on both classical and novel techniques

Projecte núm: FAIR-CT97-3522.

Títol: Impact fishery and environment on hake recruitment in Northwester Mediterranean (LLUCET).

Centre: Institut Mediterrani d'Estudis Avançats (IMEDEA).

Investigadora principal: MORALES NIN, Beatriu.

Categoria: Investigador científic CSIC.

Inici: 1998. **Fi:** 2000.

Socis:

IFREMER (França)

Centre Universitario di Biologia Marina ed Ecologia Applicata (Itàlia)

Università degli Studi di Genova (Itàlia)

Coordinador: Instituto de Ciencias del Mar (CSIC)

Summary

Objetives:

The main objective of this proposal is to study the relationships between the recruitment process of European hake (Merluccius merluccius) and its fishery in the NW Mediterranean.

This objective is itemised as follows:

To analyse the effects of the young hake fishery on the demersal community, This includes the effect of fishing on the demersal communities and the geographic allocation of the fishing effort.

Study of the hake recruitment processes. Spatial distribution of eggs and larvae. Settlement process. Juveniles and larval growth and ecology.

To analyse the impact of the fishery on the spawning stock.

Referència: 97/0084.

Títol: Environment and biology of deep-water species *Aphanopis carbo* in NE Atlantic: basis for its management (BAS BLACK).

Centre: Institut Mediterrani d'Estudis Avançats (IMEDEA).

Investigadora principal: MORALES NIN, Beatriu.

Categoria: Investigador científic CSIC.

Inici: 1998. **Fi:** 2000.

Socis:

Scottish Association for Marine Science (Regne Unit)

Marine Laboratoire (Regne Unit)

Instituto Español de Oceanografía (Espanya)

Direcção-General dos Pescas (Portugal)

Universidade dos Açores (Portugal)

Coordinador: Instituto Portugues de Investigação do Mar (Portugal)

Summary

The objective of this Project will be to provide the basis for the development and implementation of a programme for the routine study and management of the black scabbardfish. Owing to the lack of biological and environmental information critical for the assessment and management of the species a special effort will be put into investigations of its biology, stock discrimination and habitat characterisation.

Referència: MAS3-CT97-0153.

Títol: Effects of entrophicated seawater on rocky shore ecosystems studied in large littoral mesocosm (EULIT).

Centre: Institut Mediterrani d'Estudis Avançats (IMEDEA).

Investigador principal: DUARTE QUESADA, Carlos.

Categoria: Professor d'investigació del CSIC.

Inici: 1998. **Fi:** 2001.

Socis:

Roskilde Universitet Center (Dinamarca)

Aabo Akademi University (Finlàndia)

Stockholms Universitet (Suècia)

Chistian-Albrechts Universität Kiel (Alemanya)

Norsk Hydro AS (Noruega)

Coordinador: Norwegian Institute for Water Research (Noruega)

Summary

Objectives:

The overall objectives are to predict the response of rocky ecosystems to increased nutrient availability by

- 1) modelling the changes in ecosystem processes
- 2) evaluating the increased production of herbivores
- 3) assessing effects on growth responses of key organisms
- 4) predicting the resulting ecosystem structure and metabolism.

In doing so, EULIT would allow the formulation of tolerable nutrient inputs to coastal waters, and to evaluate the capacity for increased production of animal protein as a side benefit of the buffering effect exerted by herbivores.

Referència: IC18-CT98-0292.

Títol: Prediction of the resilience and recovery of distribeb coastal communities in the tropics (PREDICT).

Centre: Institut Mediterrani d'Estudis Avançats (IMEDEA).

Investigador principal: DUARTE QUESADA, Carlos.

Categoria: Professor d'investigació del CSIC.

Inici: 1998. **Fi:** 2002.

Socis:

Hanoi National Pedagogic University (Vietnam)

Instituto do Mar (Portugal)

University of Wales (Regne Unit)

Kobenhvns Universitet (Dinamarca)

Internat. Instit. for Infrastrustural, Hydraulic and Envir. Engineering (Holanda)

University of the Philippines (Filipines)

Coordinador: Institut Mediterrani d'Estudis Avançats (IMEDEA)

Summary

The objective is to contribute to the sustainability of SE Asian coastal ecosystems through the development of models predicting the resilience of SE Asian seagrass and mangrove ecosystems against human pressure. These models, simple enough as to be readily embedded in current frameworks for integrated coastal management, will assist decisions by coastal managers an policy makers.

Referència: EVR1-CT-2000-20002.

Títol: Implementation and networking of large-scale long-term marine biodiversity research in Europe (BIOMARE).

Centre: Institut Mediterrani d'Estudis Avançats (IMEDEA).

Investigador principal: DUARTE QUESADA, Carlos.

Categoria: Professor d'investigació del CSIC.

Inici: 2000. **Fi:** 2002.

Socis:

National Environment Research Council
Centre National de la Recherche Scientifique
Ecological Consultancy Services Ltd
Instituto do Mar
Akvaplan-niva AS
Institute of Marine Biology of Crete
Institute of Oceanology-Polish Academy of Sciences
Alfred Wegener Insitut für Polar un Meeresforschung
Stazione Zoologica Anton Dohrn
University of Ljubljana
Université de la Méditerranée Aix-Marseille II
Israel Oceanographic & Limnological Research Ltd
Middle-East Technical University
Centre National de la Recherche Scientifique
Universiteit Gent
Centre for Environmental Research into Coastal Issues
ABO Akademi University
Helsinki University of Technology
Klaipedos Universitetas
Université de Nantes
Université Pierre et Marie Curie-Paris VI
Coordinador: Nederlands Instituut voor Oecologisch Onderzoek

Summary

The objectives of the concerted action are to achieve a European consensus on the selection and implementation of:

- 1) a network of reference sites as the basis for long-term and large-scale marine biodiversity research in Europe.
- 2) internationally agreed standardised and normalised measures and indicators for (the degree of) biodiversity.
- 3) facilities for capacity building, dissemination and networking of marine biodiversity research, by a) workshops, b) improving training and mobility, c) an internet web-site including an overview of ongoing research programs and existing infrastructure for marine biodiversity research in Europe, d) a database on, reviewed and evaluated, available data, aiming at employing data for socio-economic questions such as the impact of fisheries or tourism.

Referència: FMRX-CT96-0066.

Títol: [Microlasers and cavity QED](#).

Centre: Institut Mediterrani d'Estudis Avançats (IMEDEA).

Investigador principal: [SAN MIGUEL RUIBAL, Maximino](#).

Categoria: CU (àrea de coneixement: Física de la Matèria Condensada).

Inici: 1996. **Fi:** 2000.

Socis:

Imperial College (Regne Unit)
Max-Planck-Institut fur Quantum Optik (Alemanya)
France Telecom (França)
University of Leiden (Holanda)
Ecole Normale Superieure (França)
Università La Sapienza (Itàlia)
Coordinador: University of Ulm (Alemanya)

Summary

The objectives of this network are twofold and are concerned with both theoretical and experimental results. On the theoretical side, the general objective is to gain a better understanding of microlasers and cavity QED through the establishment of more elaborate theories than existing ones. On the experimental side, the objectives are to demonstrate the effects predicted by the new theories and to propose compact sources of light with tailored quantum noise and methods of measurement taking advantage of the quantum properties of the field.

Referència: HPRN-CT-2000-00034.

Títol: VCSELS for Information Society Technology Applications (VISTA).

Centre: Institut Mediterrani d'Estudis Avançats (IMEDEA).

Investigador principal: SAN MIGUEL RUIBAL, Maximino.

Categoria: CU (àrea de coneixement: Física de la Matèria Condensada).

Inici: 2000. **Fi:** 2003.

Socis:

UCC (Irlanda)
CNET (França)
EPFL (Txèquia)
UNI_ULM (Alemanya)
INFM_MI (Itàlia)
UPMC_LKB (França)
KTH (Suècia)

Coordinador: Istituto Nazionale per la Fisica della Materia (INFM.RUF) (Itàlia)

Summary

Opto-electronics will have to play a crucial role in future development of communications and information processing and, as a consequence, will influence very much our society in the next years. The Vertical Cavity Surface Emitting Lasers (VCSEL) are likely to become much more important than standard semiconductor lasers in the near future in opto-electronic devices. In order to reach this major breakthrough, an effort must be faced for solving some problems related to the VCSEL behaviour, in particular for polarisation instabilities pattern complexity, modulation patterning effects, low power, thermal lensing and feedback effects. Even more important, VCSEL special characteristics can be fruitfully used for improving systems performance, for instance with polarisation control, by employing spatial structures for information processing, by achieving quantum-limited performance. The main objectives of the Project are the understanding of the underlying physical mechanisms relevant to VCSEL operation, the subsequent improvement of their efficiency and the transfer of this knowledge to VCSEL based systems. These objectives are achieved by exploring new possibilities associated with VCSEL features and by novel kind of lasers and device concepts.

At this purpose, a tight collaboration is necessary among laboratories with device construction facilities, laboratories with nonlinear and quantum optics and electronics expertise, theoretical groups. Indeed, the samples production requires a large research infrastructure and few European groups (and in few European countries) have this possibility. Besides, a complete characterisation and understanding of the laser behaviour implies specialised competencies and must be performed by groups with the necessary experience. This network will provide the link between the most important European groups in the involved research fields, connecting device production, characterisation and implementation in communication systems.

Referència: IST-1999-29064.

Títol: Quantum information processing & communications network of excellence (QUIPROCONE).

Centre: Institut Mediterrani d'Estudis Avançats (IMEDEA).

Investigador principal: SAN MIGUEL RUIBAL, Maximino.

Categoria: CU (àrea de coneixement: Física de la Matèria Condensada).

Inici: 2000. **Fi:** 2003.

Socis:

Coordinador: Hewlett-Packard Ltd. (Regne Unit)

Referència: Esprit project núm. 28235.

Títol: Processing of information by arrays of non-linear optical solitons (PIANOS).

Centre: Institut Mediterrani d'Estudis Avançats (IMEDEA).

Investigador principal: BALLE MONJO, Salvador.

Categoria: TU (àrea de coneixement: Física de la Matèria Condensada).

Socis:

University ULM (Alemanya)

University of Strathclyde (Regne Unit)

Centre National de la Recherche Scientifique (França)

Istituto Nazionale per la Fisica della Materia (Itàlia)

France Telecom (França)

Coordinador: Physicalish Technische Bundesanstalt (Alemanya)

Referència: NATO PST.CLG. 976135.

Títol: [Non linear and non-adiabatic magnetohydrodynamic waves in solar coronal structures.](#)

Centre: Departament de Física. Edifici Mateu Orfila i Rotger.

Investigador principal: [BALLESTER MORTES, Josep L.](#)

Categoria: TU (àrea de coneixement: Física de la Terra, Astronomia i Astrofísica).

Inici: 1999. **Fi:** 2001.

Socis:

University of St Andrews (Regne Unit)
Technical University of Lublin (Polònia)
Coordinador: Universitat de les Illes Balears

Referència: INTAS 31931.

Títol: [Interaction of magnetohydrodynamic waves and flows in astrophysical plasmas.](#)

Centre: Departament de Física. Edifici Mateu Orfila i Rotger.

Investigador responsable: [BALLESTER MORTES, Josep L.](#)

Categoria: TU (àrea de coneixement: Física de la Terra, Astronomia i Astrofísica).

Inici: 1999. **Fi:** 2001.

Socis:

Abastumani Astrophysical Observatory (Geòrgia)
University of Nihzny Novgorod (Rússia)
Coordinador: University of St Andrews (Regne Unit)

Projecte: Acció COST 918. ICC2-CT-2000-04003.
Títol: [Study on obesity and functional foods in Europe.](#)
Centre: Departament de Biologia Fonamental i Ciències de la Salut. Edifici Guillem Colom Casanovas.
Investigador principal: [PALOU OLIVER, Andreu.](#)
Categoria: CU (àrea de coneixement: Bioquímica i Biologia Molecular).
Inici: 2000. **Fi:** 2002.

Projecte: Acció COST 918.
Títol: [Body weight and energy expenditure. Functional food and nutrition technology.](#)
Centre: Departament de Biologia Fonamental i Ciències de la Salut. Edifici Guillem Colom Casanovas.
Investigador principal: [PALOU OLIVER, Andreu.](#)
Categoria: CU (àrea de coneixement: Bioquímica i Biologia Molecular).
Inici: 1998. **Fi:** 2003.

Projecte: Acció COST 268.
Títol: [Wavelength scale photonic components for telecommunications.](#)
Centre: Institut Mediterrani d'Estudis Avançats (IMEDEA).
Investigador principal: [SAN MIGUEL RUIBAL, Maximino.](#)
Categoria: CU (àrea de coneixement: Física de la Matèria Condensada).
Inici: 1998. **Fi:** 2001.

Projecte: Acció COST 267.
Títol: [Semiconductor devices for signal processing.](#)
Centre: Departament de Física. Edifici Mateu Orfila i Rotger.
Investigador principal: [BALLE MONJO, Salvador.](#)
Categoria: TU (àrea de coneixement: Física de la Matèria Condensada).

Projecte: Programa de cooperació científica con Iberoamérica 1998-1999.
Títol: [Aplicaciones del principio de máxima entropía al estudio de sistemas ligados por interacción electromagnética y/o fuerte en el espacio de coordenadas y en el espacio de momentos.](#)
Centre: Departament de Física. Edifici Mateu Orfila i Rotger.
Investigadors principals: [CASAS AMETLLER, Montserrat](#); [PLASTINO, Ángel.](#)
Inici: 2000. **Fi:** 2000.

PROJECTES FINANÇATS PER:

GOVERN ESPANYOL

GOVERN DE LES ILLES BALEARS



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- Especiación por aislamiento geográfico en coleópteros: análisis genético y citogenético.
PETITPIERRE VALL, Eduard
- Mecanismos de resistencia al complemento y a los agentes antimicrobianos basados en las porinas de *Klebsiella pneumoniae*.
BENEDÍ BENITO, Vicente Javier
- Evolución molecular de la interacción entre genes y genomas: de bacterias de vida libre a endosimbiontes, mitocondrias y supergenes.
CASTRO OCÓN, José Aurelio
- Mecanismos adaptativos de la raíz al estrés iónico.
CABOT BIBILONI, Catalina
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RAMON JUANPERE, Misericòrdia
- Evaluación de la efectividad de los arrecifes artificiales de la Bahía de Palma.
MORENO CASTILLO, Isabel
- El estado ecológico de los rios temporales en ambientes insulares.
MOYÀ NIELL, Gabriel
- Estudio farmacológico y molecular del efecto del ácido oleico sobre la estructura y función de membranas celulares y evaluación de su utilización clínico-farmacológica en pacientes con diversos procesos tumorales.
ESCRIBÁ RUIZ, Pablo
- Estudio del efecto de fármacos opiáceos sobre la viabilidad neuronal y su relación con el desarrollo de la tolerancia al efecto antinociceptivo.
OLMOS BONAFÉ, Gabriel A
- Dinámica de los haplotipos mitocondriales en poblaciones naturales de *Drosophila subobscura*: aspectos geneticopoblacionales, ecológicos y moleculares (mtDNA).
CASTRO OCÓN, José Aurelio
- Taxonomía, filogenia y ecología de *Salinibacter* (CASAL-1).
ROSSELLÓ MORA, Ramon
- Análisis molecular de comunidades microbianas y teledetección, dos apuestas de futuro en la detección de contaminación y en la gestión de aguas territoriales.
BOSCH ZARAGOZA, Rafel
- Estructura poblacional y variabilidad genética en coleópteros endémicos de las Islas Canarias pertenecientes a diferentes ambientes (CANBIO).
JUAN CLAR, Carles
- Biología y regulación por opiáceos de receptores para imidazolinas (BRORI).
GARCÍA SEVILLA, Jesús A.
- Selección de especies leñosas y diseños de rehabilitación paisajística de riberas para la depuración de aguas residuales (DENDRODEPURACIÓN).
MARTÍNEZ TABERNER, Antoni





- Selección clonal y saneamiento de variedades de vid de Baleares.
MEDRANO GIL, Hipólito
- Aditivos alimentarios E410, E412 y E417: métodos moleculares para su diferenciación y detección en materias primas y alimentos.
BENEDÍ BENITO, Vicente J.
- Aplicació de les noves tecnologies a l'ensenyament de la Biologia Molecular a la UIB.
BENEDÍ BENITO, Vicente J.
- Possibilitats tecnològiques d'aprofitament de l'efluent de les indústries formatgeres de Balears (lactosuero) com a estratègia de depuració.
BOSCH ZARAGOZA, Rafel
- Estudi del procés de compostatge i de la qualitat del compost.
LALUCAT JO, Jordi
- Regulación de la expresión de cápsula y su relación con la respuesta inmunitaria en las infecciones respiratorias causadas por *Streptococcus pneumoniae* y *Klebsiella pneumoniae*.
ALBERTÍ SERRANO, Sebastià.
- Papel de la molécula de la membrana externa de bacterias gram-negativas: como inmunomodulador de la prevención y tratamiento de procesos infecciosos en avicultura.
TOMÁS MAGAÑA, Juan
- Moléculas de la membrana externa y estructuras adicionales de tres bacterias gram-negativas implicadas en la virulencia: estudio genético y su uso como vacunas.
TOMÁS MAGAÑA, Juan.
- Patrones morfológicos en partes esqueléticas de moluscos actuales y fósiles. Origen e implicaciones evolutivas.
CHECA GONZÁLEZ, Antonio G.
- Tipificación, cartografía y evaluación de los pastos españoles.
RALLO GARCÍA, Juan.
- Mejora de la tecnología de obtención, almacenamiento, germinación y uso de semillas de especies silvestres utilizadas en los planes de reforestación y revegetación de la Comunidad Valenciana.
GARCÍA FAYOS, P.



Referència: PB94-0002-C (DGICYT). Programa sectorial de promoció general del coneixement.

Títol: Receptores de imidazolinas y adrenoceptores alfa-2 en sistema nervioso central: caracterización bioquímica/molecular y regulación fisio-farmacológica y patológica.

Classificació UNESCO: 320909.

Centre: Departament de Biologia. Edifici Guillem Colom Casanovas.

Investigador principal: GARCIA SEVILLA, Jesús A.

Categoria: CU (àrea de coneixement: Farmacologia).

Inici: 1995. **Fi:** 2000.

Membres de l'equip	Categoria	Dedicació (h/setm.)
Garcia Sevilla, Jesús A.	CU	32
Miralles Socias, Antoni	TU	32
Esteban Valdés, Susana	TU	32
Olmos Bonafé, Gabriel	TEU	32
Ribas Núñez, Catalina	B	40
Ventayol Bosch, Pere	B	40
Ozaita Mintegui, Andrés	B	40

Nombre total d'investigadors de la UIB: 7.

Total EJC/setmana: 6,2.

Summary

The aim of this project is to characterize further the biochemistry/molecular biology as well as the physio-pharmacologic regulation of imidazoline receptors and alpha-2 adrenoceptors in the central nervous system. The imidazoline receptor, I₂ type, are new molecular entities which appear to be associated with the the enzyme MAO-B and with the expression of GFAP in glial cells. The project therefore will assess the involvement of these receptors in the pathophysiology of endogenous depression and Alzheimer's disease.

Referència: PB96-0090 (DGES). Programa sectorial de promoció general del coneixement.

Títol: Especiación por aislamiento geográfico en coleópteros: análisis genético y citogenético.

Classificació UNESCO: 2409.

Centre: Departament de Biologia. Edifici Guillem Colom Casanovas.

Investigador principal: PETITPIERRE VALL, Eduard.

Categoria: CU (àrea de coneixement: Genètica).

Inici: 1997. **Fi:** 2000.

Membres de l'equip	Categoria	Dedicació (h/setm.)
Petitpierre Vall, Eduard	CU	16
Pons Pons, Joan	Aj. EU	32
Oromí Masoliver, Pedro		32
Garín, Claudia Fabiana	B	40
Gómez-Zurita Frau, Jesús	B	40
Garnería Pico, Irene	B	40

Nombre total d'investigadors de la UIB: 5.

Total EJC/setmana: 4,2.

Keywords: genetic differentiation, coleoptera, geographic isolation, spetiation, phylogeny.

Summary

The Canarian archipelago and the mountain ranges of Iberian Peninsula may be considered as natural laboratories for studying the genetic differentiation of endemic species of coleopterans belonging to the genera *Pimelia*, *Hegeter* (Tenebrionidae), *Timarcha* and *Chrysolina* (Chrysomelidae). These species are characterized by their low dispersal capacity and many of them have been previously investigated in several genetic features. The nucleotide sequences of satellite DNAs in species of *Pimelia* and *Hegeter*, those of mtDNA gene COII and nuclear rDNA spacers in *Timarcha* and *Chrysolina*, will be used as genetic markers to determine the degree of evolutionary divergence and build up phylogenetic trees through appropriate algorithms. The molecular findings will be compared with those derived from molecular cytogenetic analyses on the same species by fluorescent in situ hybridization (FISH) using satDNA probes in *Pimelia* and *Hegeter*, and of ribosomal DNA of 18-28S and 5S in the four genera subjected to study.

Referència: PB96-0197 (DGES). Programa sectorial de promoció general del coneixement.

Títol: Mecanismos de resistencia al complemento y a los agentes antimicrobianos basados en las porinas de *Klebsiella pneumoniae*.

Classificació UNESCO: 320103.

Centre: Departament de Biologia. Edifici Guillem Colom Casanovas.

Investigador principal: BENEDÍ BENITO, Vicente Javier.

Categoria: TU (àrea de coneixement: Microbiologia).

Inici: 1997. **Fi:** 2000.

Membres de l'equip	Categoria	Dedicació (h/setm.)
Benedí Benito, Vicente Javier	TU	16
Barceló Mairata, Francesca	TU	16
Gil Sánchez, José	As.	40
Hernández Allés, Santiago	B	40
Álvarez Díaz, Dolores	B	40
Rubires Ferrer, Francesc X.	B	40

Nombre total d'investigadors de la UIB: 6.

Total EJC/setmana: 4,8.

Keywords: *k. pneumoniae*, outer membrane, porins, LPS, complement, antimicrobials.

Summary

Previous results obtained by our group have demonstrated the important role of outer membrane components, particularly lipopolysaccharide and porins, in the resistance of *K. pneumoniae* to complement-mediated killing and antimicrobial agents. The present project aims to more detailed study of the role of the above two surface components in the cited resistance phenomena by:

1. Determining the unknown bases of complement resistance in lipopolysaccharide O⁻ hospital-occurring isolates.
2. Structural characterization of the site(s) within the OmpK36 porin responsible for the binding of complement component C1q and subsequent antibody-independent activation of the complement system.
- And 3. Determine the mechanisms that lead to the loss of porin expression or the expression of altered porin forms with the subsequent increases in antimicrobial resistance levels.

Referència: PB96-0793-C04-04 (DGES). Programa sectorial de promoció general del coneixement.

Títol: Evolución molecular de la interacción entre genes y genomas: de bacterias de vida libre a endosimbiontes, mitocondrias y supergenes.

Classificació UNESCO: 2409.

Centre: Departament de Biologia. Edifici Guillem Colom Casanovas.

Investigador principal: CASTRO OCÓN, José Aurelio.

Categoria: TU (àrea de coneixement: Genètica).

Inici: 1997. **Fi:** 2000.

Membres de l'equip	Categoria	Dedicació (h/setm.)
Castro Ocón, José Aurelio	TU	16
Ramon Juanpere, Misericòrdia	TU	16
Picornell Rigo, Antònia	Aj. EU	16
Terrassa Pont, Bàrbara	As.	16

Nombre total d'investigadors de la UIB: 4.

Total EJC/setmana: 1,6.

Keywords: symbiosis, molecular coevolution, genomic conflict, darwinian selection, neutral theory, supergen, nucleous-mitochondria interaction.

Summary

Compared to endogenous evolutionary processes, symbiosis is a rare event that increases genetic complexity and the appearance of evolutionary novelties. However, it played an important part in the origin of eukaryotes, and has also been invoked to explain the origin of chromosomes and of the first cells. Nevertheless, the evolutionary success of the symbiotic interactions occurs within biological entities that, depending on the hierarchical level, compete for diverse resources. This competition could result in a genomic conflict between the symbiotic partners and the new symbiotic entity. The aim of the present grant proposal is to elucidate the role that Darwinian selection could play in the evolution and maintenance of: a) the symbiosis between *Buchnera aphidicola*, the endosymbionts of aphids, which is suffering deep structural and regulatory changes compared to close free living bacteria such as *E. coli*; b) the interaction between nuclear and mitochondrial genomes (as a consequence of a very ancient symbiotic process) in *Drosophila subobscura*, for which we have already identified mitochondrial haplotypes exhibiting presumptive fitness differences, and c) chromosome rearrangements (considered as supergenes) in *D. subobscura*, organisms which shows a high plasticity in the generation and adaptive maintenance of chromosomal polymorphisms. The methodology involved in the present proposal is quite diverse, covering from the analysis of the structure and regulation of different genes, to the molecular population and phylogenetic analysis. In reference to section a), we pretend to implement a new methodology, the so called 'molecular coevolution', consisting in the comparative study of the evolution of genes coding for subunits interacting in the same protein complex, that could be encoded in different genomes. This methodology goes beyond the aims of the present proposal, but has been included as an objective because it can also be very useful to unveil the transformations occurred in genomes involved in symbiosis and their causes.

Referència: PB97-0163-C02-02 (DGES). Programa sectorial de promoció general del coneixement.

Títol: Mecanismos adaptativos de la raíz al estrés iónico.

Classificació UNESCO: 241719.

Centre: Departament de Biologia. Edifici Guillem Colom Casasnovas.

Investigadora principal: CABOT BIBILONI, Catalina.

Categoria: TU (àrea de coneixement: Biologia Vegetal).

Inici: 1998. **Fi:** 2001.

Membres de l'equip	Categoria	Dedicació (h/setm.)
Cabot Bibiloni, Catalina	TU	32
Llorens Garcia, Lleonard	TU	32
Bennàsar Roig, Antoni	CEU	16

Nombre total d'investigadors de la UIB: 3.

Total EJC/setmana: 2.

Summary

The primary effects of potentially toxic concentrations of Na⁺ and Cl⁻ on root physiology will be studied using plan genotypes that exhibit considerable differences in salt stress resistance or tolerance (*Phaseolus vulgaris*, *Medicago arborea* and *Medicago citrina*), in order to distinguishing between those alterations that are specifically related to higher stress resistance or tolerance from those that only induce multiple secondary strains which lead to inespecific defense mechanisms that are unable to protect plants from ion toxicity.

Referència: PM97-0041 (DGES). Programa sectorial de promoció general del coneixement.

Títol: Análisis genético a nivel de STRs y secuenciación de la región I del mtDNA. Aplicación de la evolución de las poblaciones chueta y balear y a la genética de la otoparesclerosis y la miopía.

Classificació UNESCO: 2409.

Centre: Departament de Biologia. Edifici Guillem Colom Casanovas.

Investigadora principal: RAMON JUANPERE, Misericòrdia.

Categoria: TU (àrea de coneixement: Genètica).

Inici: 1998. **Fi:** 2001.

Membres de l'equip	Categoria	Dedicació (h/setm.)
Ramon Juanpere, Misericòrdia	TU	16
Castro Ocón, José Aurelio	TU	16
Picornell Rigo, Antònia	Aj. EU	16
Rosell Andreu, Jordi	As.	16
Oliver Capó, Gabriel		16
Frau Rotger, Elisabet		16

Nombre total d'investigadors de la UIB: 4.

Total EJC/setmana: 1,6.

Keywords: chuetas, STRs, mtDNA, human populations, genetics of myopia, genetics of otosclerosis.

Summary

The aim of the project is to study the genetics of the human population of the Balearic Islands by means of the analysis of individuals from Majorca, Minorca, Ibiza and Chueta populations. The level of polymorphism in nuclear genes (STRs) and in the hypervariable region I of mtDNA will be detected. We will establish the filogenetic relationship between our populations and between them and other mediterranean ones of the literature. We are specially interested in confirming the Jewish origin of the Chueta population and also the different substrata of Ibiza Island that previous studies have indicated. The comparison between the evolution nuclear patterns (STRs and hematic markers) and the mitochondrial ones (RFLPs and sequence of region I) provides information about the differences in evolution taxa and also the dynamics of female-vs male mediated movement of DNA in Chueta and Ibiza populations. The study of diseases with a genetic study of myopia and otosclerosis in Balearic Islands. The patterns of inheritance of both diseases and their probable association with hematic markers will be determined with family studies. Also the existence of linkage disequilibria between STRs and disease genes will be tested.

Referència: MAR98-0258-C05-01 (DGES). Programa nacional de ciència i tecnologia marines.

Títol: Evaluación de la efectividad de los arrecifes artificiales de la Bahía de Palma.

Classificació UNESCO: 2510, 3105.

Centre: Departament de Biologia. Edifici Guillem Colom Casanovas.

Investigadora principal: MORENO CASTILLO, Isabel.

Categoria: CU (àrea de coneixement: Biologia Animal).

Inici: 1998. **Fi:** 2000.

Membres de l'equip	Categoria	Dedicació (h/setm.)
Moreno Castillo, Isabel	CU	32
Coll Monserrat, Josep	As.	32
Haroun Tabraue, Ricardo Jesús		16
Castro Hernández, José Juan		16
Mas Hernández, Julio		16
Marcos Diego, Concepción		16
García Charton, José Antonio		16

Nombre total d'investigadors de la UIB: 2.

Total EJC/setmana: 1,6.

Keywords: artificial reefs, coastal resources, artisanal fisheries, recruitment, protected marine areas.

Summary

The work which project we present intends to check "in situ" the results of artificial reef deployment in the littoral zone of different spanish coastal areas. The direct effects, in the short and long run, on the target species of the artisanal fleet and the relation of the artificial reef with the natural environment from the fish aggregation, response to fishing pressure, juvenile recruitment and sea bed regeneration points of view are studied. With it, we obtain knowledge on how the artificial reefs work, with the threefold aim of: 1° answer the questions the administration has now open in this respect, 2° obtain more basic scientific knowledge on the coastal artificial reef ecosystem and 3° contribute to the European Artificial Reef Research Network with data of our reefs to the whole knowledge on artificial reefs in the European Community.

Referència: HID98-0323-C05-02. Programa nacional de recursos hídrics.

Títol: El estado ecológico de los rios temporales en ambientes insulares.

Classificació UNESCO: 250811, 250805.

Centre: Departament de Biologia. Edifici Guillem Colom Casasnovas.

Investigador principal: MOYÀ NIELL, Gabriel.

Categoria: TU (àrea de coneixement: Ecologia).

Inici: 1998. **Fi:** 2001.

Membres de l'equip	Categoria	Dedicació (h/setm.)
Moyà Niell, Gabriel	TU	16
Ramon Pérez de Rada, Guillem	TU	16
Martínez Taberner, Antoni	TU	16

Nombre total d'investigadors de la UIB: 3.

Total EJC/setmana: 1,2.

Keywords: ecological status, water quality, macroinvertebrates, riparian forest.

Summary

The recent proposal of Freshwater Framework Directive (published in 27.2.1997; COM(97) 49 final) implies that member states of the EU should elaborate in the future maps of ecological status of their aquatic ecosystems, including rivers. The ecological status concept is mainly based in the qualification of freshwater quality using its biological components. The objective of our project is to study 10 mediterranean rivers in Spain where the establishment of their ecological status may present several difficulties due to ecological conditions of these rivers (droughts, flash floods). This fact means that methodological problems can be a bottleneck of the applications of these indices to mediterranean rivers and, therefore, studies have to be performed in order to solve these methodological problems. We propose to study 10 rivers basins in the mediterranean coast of Spain with the same sampling systems and data treatment. The result must help us to define an integrate index that using the biological quality of waters and the conservation of the riparian forest, allow us to classify the mediterranean rivers in the five classes of ecological status defined in the proposal of Freshwater Framework Directive. At the moment when the directive should be implemented, managers and policy makers will have a valuable instrument of water quality qualification in order to produce the ecological status maps. This system can be, probably, applied to many other Spanish rivers with minor changes.

Referència: FIS00-1029. Fons d'Investigació Sanitària.

Títol: Estudio farmacológico y molecular del efecto del ácido oleico sobre la estructura y función de membranas celulares y evaluación de su utilización clínico-farmacológica en pacientes con diversos procesos tumorales.

Centre: Departament de Biologia. Edifici Guillem Colom Casasnovas.

Investigador principal: ESCRIBÁ RUIZ, Pablo.

Categoria: TEU (àrea de coneixement: Biologia Cel·lular).

Inici: 2000.

Fi: 2002.

Membres de l'equip	Categoria	Dedicació (h/setm.)
Escribá Ruiz, Pablo	TEU	16
Barceló Mairata, Francisca M.	TU	16
Besalduch Vidal, Joan		16
Galmés Llodrà, Antoni		16
Novo Garcia, Andrés		16
Ventayol Bosch, Pere		40
Vila Bonet, Maria À.		40

Nombre total d'investigadors de la UIB: 2.

Total EJC/setmana: 0,8.

Keywords: cell signaling, receptors, G proteins, blood pathologies.

Summary

During the last few years we have demonstrated that the plasma membrane lipid structure plays a crucial role in peripheral membrane protein-associated signal transduction [Escribá *et al.*, Proc. Natl. Acad. Acad. Sci. USA **92** (1995) 7595-99; Escríbá *et al.*, Proc. Natl. Acad. Acad. Sci. USA **94** (1997) 11375-80]. Recently, we have observed that monounsaturated fatty acids (e. g., oleic acid) are able to regulate (10-50 (M) the interaction between some peripheral proteins involved in signal transduction and the plasma membrane, by modulating the physico-chemical membrane properties provided by phosphatidylethanolamine (unpublished results). Because the consumption of oleic acid is directly associated with a lesser incidence of tumoral processes (Farchi *et al.*, Eur. J. Cancer Prev. **5**, 113-120) and the antitumor drug daunomycin exhibits a similar effect to that of the fatty acid on the modulation of the plasma membrane structure and function, we propose a pharmacological and molecular study of this fatty acid to evaluate its use in onco-hematological processes, which could result in a similar use to that of trans-retinoic acid (vitamin A) for acute promyelocytic leukemia treatment. For this purpose, we plan two well defined experimental strategies. On one side, it will be performed an in-depth study on the molecular mechanism of interaction between oleic acid and the plasma membrane and its effect on plasma membrane-associated signals. This part of the study will allow a later design of new molecules with better pharmacological activity. On the other hand, it will be evaluated its therapeutic effectivity in humans and its pharmacological efficacy in model systems (tissue cultures and laboratory animals). This study constitutes a complete evaluation of a molecule, from its molecular and cellular mechanism of action to the assessment of its pharmacological and clinical applications. The achievement of the proposed basic aims would mean the elucidation of the mechanism of peripheral membrane protein translocation, still unknown, and could result in important pharmacological consequences, derived of its pharmacological application to new therapeutical approaches involving the modulation of the plasma membrane structure and function.

Referència: SAF2000-0164-C02-02. Programa nacional de salud.

Títol: Estudio del efecto de fármacos opiáceos sobre la viabilidad neuronal y su relación con el desarrollo de la tolerancia al efecto antinociceptivo.

Centre: Departament de Biologia. Edifici Guillem Colom Casanovas.

Investigador principal: OLMOS BONAFÉ, Gabriel A.

Categoria: TEU (àrea de coneixement: Biologia Cel·lular).

Inici: 2000. **Fi:** 2003.

Membres de l'equip	Categoria	Dedicació
Olmos Bonafé, Gabriel Iglesias Durán, Montserrat Minteig Florensa, Gerard Segura Ginard, Miguel F.	TEU	Única

Nombre total d'investigadors de la UIB: 1.

Keywords: opioid drugs, morphine, heroine, metadone, tolerance, analgesia, pain, neurotoxicity, apoptosis, neuroprotection, cell culture.

Summary

The development of opioid tolerance (decrease in antinociceptive efficacy) is related to the activation of the N-methyl-D-aspartate receptor which induces increased cytoplasmic calcium levels in the neurone and activation of calcium-dependent nitric oxide synthase. It is known that this morphine exposure to cells induces apoptosis or increases their susceptibility to drugs that stimulate apoptosis. This research project is designed to assess the 'in vitro' effects of opioid drug exposure on the pathways related with neuronal viability, the potential neuronal damage after chronic 'in vivo' treatment and the relationship with the development of tolerance to the antinociceptive effect. The results of this study will help to design new approaches to reduce or protect from the potential neuronal damage after chronic opioid drug exposure and/or block or attenuate tolerance.

Referència: BOS2000-1000. Ministeri de Ciència i Tecnologia.

Modalitat: P1. Projecte d'investigació bàsica no orientada.

Títol: Dinámica de los haplotipos mitocondriales en poblaciones naturales de *Drosophila subobscura*: aspectos geneticopoblacionales, ecológicos y moleculares (mtDNA).

Classificació UNESCO: 2409.

Centre: Departament de Biologia. Edifici Guillem Colom Casanovas.

Investigador principal: CASTRO OCÓN, José Aurelio.

Categoria: TU (àrea de coneixement: Genètica).

Inici: 2000.

Fi: 2003.

Membres de l'equip	Categoria	Dedicació
Castro Ocón, José Aurelio	TU	Compartida
Ramon Juanpere, M. Misericòrdia	TU	Compartida
Picornell Rigo, Antònia	Aj. U	Compartida
Oliver Llamas, Pere	Aj. EU	Única
Terrassa Pont, Bàrbara	As.	Única

Nombre total d'investigadors de la UIB: 5.

Keywords: *Drosophila subobscura*, haplotypes, mitochondrial DNA, linkage disequilibrium, chorosomal arrangements, DNA sequencing, biological fitness.

Summary

In most natural poblations of *Drosophila subobscura* studied it has been found that there are two frequent haplotypes of mitochondrial DNA, I and II, which differ by a synonymus change in a target of the restriction enzyme *HaeIII*, as well as a series of less common haplotypes (less than 5%) that are different in time and location. The results obtained up to now have not solved yet the populational dynamics of these haplotypes in nature, and, although a superiority of the haplotype II over I in populational cages was initially found, this result has not been confirmed in current experiments. The cytonuclear disequilibrium experiments with haplotypes and enzymatic nuclear markers have not been significant. On the contrary, the association with chromosomal arrangements seems to be so. The hypothesis we are carrying out now is that in order to explain the presence of the most common haplotypes and the less frequent ones in nature, this must be studied from a population-genetics, ecologic and molecular point of view that could help to explain their dynamics. For this reason, in the present project we establish the following objectives: 1.- Annual dynamics of the mitochondrial haplotypes in a natural population of *Drosophila subobscura*. 2.- Effect of the environment on the haplotype distribution. 3.- Study of the fitness of the less common haplotypes. 4.- Reaction norm of the population cages with temperature. 5.- Association of mitochondrial haplotypes and chorosomal arrangements. 6.- Association of the mitochondrial haplotypes with nuclear STRs-like markers. 7.- Analysis of the nucleotide sequence in a 5 subunit region of the NADH dehydrogenase.

Referència: BOS2000-1123-C02-01. Ministeri de Ciència i Tecnologia.

Modalitat: P1. Projecte d'investigació bàsica no orientada.

Títol: Taxonomía, filogenia y ecología de *Salinibacter* (CASAL-1).

Classificació UNESCO: 2414.

Centre: Departament de Biologia. Edifici Guillem Colom Casanovas.

Investigador principal: **ROSSELLÓ MORA, Ramon.**

Categoria: TEU (àrea de coneixement: Microbiologia).

Inici: 2000. **Fi:** 2003.

Membres de l'equip	Categoria	Dedicació
Rosselló Mora, Ramon	TEU	Única
Antón Botella, Josefa		Única

Nombre total d'investigadors de la UIB: 1.

Keywords: prokaryotes, bacteria, extremely halophilic organisms, taxonomy, genomics, ecology.

Summary

This project involves a taxonomic, genomic, and autoecologic study of the new taxon *Salinibacter*, included in the Bacteria Domain. We have recently described the occurrence of such bacteria in crystallizer ponds from solar salterns of the West Mediterranean and East Atlantic. Unexpectedly, this bacteria accounted for up to 30% of the total prokaryotic population. *Salinibacter* is the first extremely halophilic bacteria which ecological importance has been reported. Additionally, its phylogenetic affiliation shows that is fairly remote from those bacteria described so far. In this regard, the combined study of physiology, ecology and genomics would help to improve the understanding of the organisms belonging to the domain Bacteria, as well as the mechanisms of haloadaptation. Furthermore, given the extrmophilic nature of *Salinibacter*, likely the study of their physiology may lead to the recognition of new compounds of biotechnological interest.

Referència: COO1999-AX108. Ministeri de Ciència i Tecnologia.

Modalitat: Projecte coordinat amb participació interempresarial. Ministeri de Ciència i Tecnologia.

Títol: Análisis molecular de comunidades microbianas y teledetección, dos apuestas de futuro en la detección de contaminación y en la gestión de aguas territoriales.

Centre: Departament de Biologia. Edifici Guillem Colom Casanovas.

Investigador principal: BOSCH ZARAGOZA, Rafel.

Categoria: Aj. EU (àrea de coneixement: Microbiologia).

Inici: 2000.

Fi: 2002.

Membres de l'equip	Categoria
Bosch Zaragoza, Rafel	Aj. EU
Bergueiro López, José R.	TU
Ruíz Pérez, Maurici	Tèc.
Guasp Mascaró, Caterina	B

Nombre total d'investigadors de la UIB: 4.

Keywords: microbial ecology, littoral waters, microbial populations evolution, microbial community, molecular biology, pollution, hydrocarbons, oil and derivatives, geographical information system, GIS, remote sensing, data base, internet, natural areas management, environmental analysis impact.

Summary

Seas and oceans are masses of water that cover more than the 70% of the Earth surface. Their chemical composition is characterized by, constant, lower amounts of solved organic compounds and nutrients. Exceptionally, offshore zones and coastal waters are areas showing high productivity, mainly due to its relative 'high' concentration of organic compounds and nutrients (due to surgery of nutrients and to the continental waters infllet, respectively). Anyhow, these areas are in ecological equilibrium, and they have 'climax' microbial communities. Human activity is able to dilute this equilibrium and thus, harbours and water treatment plant outlets are, for example, focus of oil and pathogenic bacteria contamination. Expensive and less-sensitive chemical analysis can be performed to detect and quantify this pollution. In this project we propose, using molecular biology, to characterize 'climax' microbial community of coastal waters and to analyze its changes in front of human contamination (harbours and water treatment plants effluent). Our aim is to use microbial community and its variations as sensors of pollution in coastal waters. Furthermore, we also propose to use remote sensing technology to study contamination levles and community changes in littoral waters. If both tehcniques, molecular microbial ecology and remote sensing technology, are able to show presence of pollution, we will posses two really efficient, sensitive, tools to determine the 'health' of a coastal water and to improve its management.

Referència: REN2000-0282 / GLO. Ministeri de Ciència i Tecnologia.

Modalitat: P2. Projecte d'investigació bàsica orientada.

Títol: Estructura poblacional y variabilidad genética en coleópteros endémicos de las Islas Canarias pertenecientes a diferentes ambientes (CANBIO).

Classificació UNESCO: 2409-03.

Centre: Departament de Biologia. Edifici Guillem Colom Casanovas.

Investigador principal: JUAN CLAR, Carles.

Categoria: TEU (àrea de coneixement: Genètica).

Inici: 2000. **Fi:** 2003.

Membres de l'equip	Categoria	Dedicació
Juan Clar, Carles	TEU	Única
Petitpierre Vall, Eduard	CU	Única
Oromi Masoliver, Pedro		Compartida
Fragoso Jerez, Rosario		Compartida

Nombre total d'investigadors de la UIB: 2.

Keywords: genetic variability, biodiversity, *coleoptera*, endemic beetles, Canary Islands, laurel forest, mitochondrial DNA, PCR, DNA sequencing, phylogenetics, conservation.

Summary

The main goal of this project is to determine the effects of humid forest fragmentation on organisms with limited geographic distribution. We will use populations of carabid and tenebrionid beetles endemic to the Canary Islands as a model system. Also, we want to relate the historical (phylogeny and colonization patterns) and ecological factors (specialization to hypogean life and to different food resources) with the evolutionary success, genetic variability and population structure of these insects. The effect of the laurel forest regression on the decrease of biodiversity and in relation to conservation policies of this important habitat will be preferentially studied. To undertake these objectives, we will use DNA sequences of mitochondrial and nuclear markers obtained from individuals collected in populations of Tenerife, La Gomera, La Palma and El Hierro islands for population and phylogeographic analyses. This study should provide a basis from which to understand the genetic variability and biodiversity in a perspective of habitat fragmentation in insular ecosystems. We expect the results will have a broad application strategies in a wide number of organisms.

Referència: BFI2000-0306. Ministeri de Ciència i Tecnologia.

Modalitat: P1. Projecte d'investigació bàsica no orientada.

Títol: *Biología y regulación por opiáceos de receptores para imidazolinas (BRORI).*

Classificació UNESCO: 3209-09.

Centre: Departament de Biologia. Edifici Guillem Colom Casanoves.

Investigador principal: *GARCÍA SEVILLA, Jesús A.*

Categoria: CU (àrea de coneixement: Farmacologia).

Inici: 2000. **Fi:** 2003.

Membres de l'equip	Categoria	Dedicació
García Sevilla, Jesús A.	CU	Única
Miralles Socias, Antoni	TU	Única
Esteban Valdés, Susana	TU	Compartida
Escribá Ruiz, Pablo Vicente	TEU	Compartida
Saus Sarrias, Carlos		Compartida
Gómez Bellvert, Cristina		Compartida

Nombre total d'investigadors de la UIB: 4.

Keywords: imidazoline receptors, opiate addiction, MAP kinases, β -carbolines, neuroprotection.

Summary

The imidazoline receptors are novel ill-defined molecular entities, but with a great physiological/physiopathological and farmacological/therapeutic potentials. The aim of this project (a follow-up of DGICYT 94-0002 project) are, on the one hand, to characterize and eventually clone these receptors, and on the other hand, to unravel their participation in opiate addiction and their interaction with endogenous β -carbolines. It is proposed to prepare various probes (mainly antibodies) directed against purified imidazoline receptors, which will be used to asses the cloning of these receptors through cDNA libraries and to characterize the molecular nature of these receptors. Moreover, it is proposed to study the effects of selective I_2 ligands on the MAP kinase signalling, in various models of opiate addiction, to assess wether these drugs are able to counteract the negative effects of opiate drugs on this signal transduction system. Finally, it is proposed to study the eventual participation of β -carbolines, as neuromodulators of imidazoline receptors, in the processes of opiate addiction. The results of this project will contribute to unravel the nature of imidazoline receptors and their involvement in the complex mechanisms of opioid tolerance and dependence, as well as the eventual potential of I_2 -selective ligands as neuroprotectors.

Referència: BOS2000-1000. Ministeri de Ciència i Tecnologia.

Modalitat: P3. Projecte d'investigació aplicada.

Títol: Selección de especies leñosas y diseños de rehabilitación paisajística de riberas para la depuración de aguas residuales (DENDRODEPURACIÓN).

Classificació UNESCO: 250811, 330806, 330811.

Centre: Departament de Biologia. Edifici Guillem Colom Casanovas.

Investigador principal: MARTÍNEZ TABERNER, Antoni.

Categoria: TU (àrea de coneixement: Ecologia).

Inici: 2000. **Fi:** 2003.

Membres de l'equip	Categoria	Dedicació
Martínez Taberner, Antoni	TU	Compartida
Ramón Pérez de Rada, Guillem	TU	Compartida
Morey Andreu, Miquel	CU	Compartida
Vadell Adrover, Jaume	TEU	Compartida
Moyà Niell, Gabriel	TU	Compartida
Sampol Barceló, Pere		Compartida
Cañellas Serrano, Nicolau		Compartida
Salgot Marçay, Miquel		Compartida
Romero Bosch, Joan J.		Compartida
Ocón Buirra, Rosa		Compartida
Garcia Mas, Francesc		Compartida

Nombre total d'investigadors de la UIB: 5.

Keywords: waste waters, water purification, trees, riverbanks, landscape restoration, purification efficiency, environmental quality.

Summary

The mediterranean basin is one of the world's sites where the recycling of waste waters is most advanced. The European Union is financing diverse projects in relation to this. On the other hand, there is intense activity at local level correctly manage and recycle such scarce resource as water. The Dendropurification, as waste water improvement by means of trees, is a poorly tested method which may be applied to tertiary water treatment and which also benefits the environment, landscape quality and water table levels. It is thus of special importance to areas dedicated to tourism. This project propose the use of secondary waste waters for the restoration of temporary streams and drainage ditch banks with autochthonous trees previously selected for their capacity for purification. Seepage waters, where levels of pathogenic micoorganism are reduced by the filtering action of the soil and nutrient salts by root uptake, will reappear in the watercourses or replenish the water table with an improved quality. This general objective will be structured in two ways: firstly by an analysis under controlled conditions of plant growth and ion accumulation, particularly CL, Na and nutrients and secondly by a study of nutrient cycling applied to different tree species combinations growing in either restored or field environmental conditions.

Referència: VIN00-013. Programa nacional d'alimentació.

Modalitat: Acció estratègica de millora de la qualitat i la competitivitat dels vins.

Títol: Selección clonal y saneamiento de variedades de vid de Baleares.

Centre: Departament de Biologia. Edifici Guillem Colom Casanovas.

Investigador principal: MEDRANO GIL, Hipólito.

Categoria: CU (àrea de coneixement: Biologia Vegetal).

Inici: 2000. **Fi:** 2003.

Membres de l'equip	Categoria	Dedicació (h/setm.)
Medrano Gil, Hipólito	CU	
Bota Salort, Josefina	B	
Sampol Trujillo, Bartolomé	B	
Escalona Lorenzo, José Mariano		

Nombre total d'investigadors de la UIB: 3.

Projectes amb l'Institut Mediterrani d'Estudis Avançats (IMEDEA)

Referència: AGL2000-1397-C02-01. Programa nacional de recursos i tecnologies agroalimentàries.

Modalitat: P3. Projectes d'investigació aplicada.

Títol: Aditivos alimentarios E410, E412 y E417: métodos moleculares para su diferenciación y detección en materias primas y alimentos.

Centre: Departament de Biologia-IMEDEA. Edifici Guillem Colom Casasnovas.

Investigador principal: BENEDÍ BENITO, Vicente J.

Categoria: TU (àrea de coneixement: Microbiologia).

Inici: 2000. **Fi:** 2003.

Membres de l'equip	Categoria	Dedicació (h/setm.)
Benedí Benito, Vicente J.	TU	16
Albertí Serrano, Sebastià	As.	16
Doménech Sánchez, Antoni	B	

Nombre total d'investgadors de la UIB: 3.

Total EJC/setmana: 0,8.

Keywords: food additives, detection, differentiation, identification, molecular, DNA, PCR, E410, E412, E417.

Summary

For food additives E410 (locust bean gum) and E412 (guar gum), we have previously developed molecular methods for the extraction and PCR amplification of DNA of the plants from which they are extracted. This allowed the direct identification of these two additives on their commercial preparations (patent pending). These methods are based on the identified existence in the genomes of these and other plant species of highly repetitive sequences with a high degree of variation between species of the same genus. Following the same molecular strategy, we will here determine diagnostic DNA sequences for food additive E417 (tara gum) extracted from the plant *Caesalpinia spinosa*. They will be applied to the differentiation of this food additive from the other two in raw materials (i.e., commercial food additives and their mixtures) and to the identification in foods of additives E410, E412, and E417. These goals match with objectives 9.2 of the Programa Nacional de Recursos y Tecnologías del Plan Nacional of the Spanish Government and 6.2 of Methodologies for Measurements and Testing from competitive and sustainable growth programme of the European Commission. Both objectives aim to develop new molecular analytical tools to ensure the origin and authenticity of raw materials and food ingredients.

Ajudes de la Comissió Interdepartamental de Ciència i Tecnologia. Conselleria d'Innovació i Energia. Govern Balear

Títol: Aplicació de les noves tecnologies a l'ensenyament de la Biologia Molecular a la UIB.

Centre: Departament de Biologia. Edifici Guillem Colom Casanovas.

Investigador principal: BENEDÍ BENITO, Vicente J.

Categoria: TU (àrea de coneixement: Microbiologia).

Inici: 2000. **Fi:** 2002.

Membres de l'equip	Categoria	Dedicació (h/setm.)
Benedí Benito, Vicente J.	TU	16
Miralles Socias, Antoni	TU	16
Escribá Ruíz, Pablo	TEU	16
Juan Clar, Carles	TEU	16

Nombre total d'investigadors de la UIB: 4.

Total EJC/setmana: 1,6.

Keywords: new technologies, teaching, applications in remote servers, molecular biology, DNA, RNA, proteins, 2D and 3D structures of biologically relevant molecules.

Summary

The application of new technologies to the teaching of undergraduate *curricula* and Ph. D. courses is a relatively new field in which the Universitat de les Illes Balears (UIB) has gained a relevant position, within an Autonomous Community which is on the forefront of this field. In the molecular biology area, meant as a multidisciplinary field with technological applications in the classic areas of Biology, such as Microbiology, Cell Biology, Genetics, Biochemistry, Plant Biology, etc., a new concept known as Bioinformatics has born in the last years. This new area assembles those hardware and, in particular, software resources applied to the study of Biology. A typical example of these applications are the building and management of large databases of DNA/RNA and protein sequences, as well as of crystallographic coordinates of biologically relevant molecules. This project aims to build up at the UIB the basic bioinformatic resources and their application to the teaching of molecular biology within the fields of Cell Biology, Microbiology, and Genetics at the Ph. D. level. These basic goals will be of application in the future at the undergraduate level. The bioinformatic resources generated as a consequence of this project will be organized in the form of an on line course in the UIB Internet server, and it will be fully accessible from the web. An obvious advantage of the proposed structure of this course is that it will be used within ongoing teaching initiatives in the UIB, like the noclassroom teaching project *Campus Extens*.

Referència: IB8/2000.

Títol: Possibilitats tecnològiques d'aprofitament de l'efluent de les indústries formatgeres de Balears (lactosuero) com a estratègia de depuració.

Centre: Departament de Biologia. Edifici Guillem Colom Casanovas.

Investigador principal: BOSCH ZARAGOZA, Rafel.

Categoria: Aj. EU. (àrea de coneixement: Microbiologia).

Inici: 2000. **Fi:** 2002.

Membres de l'equip	Categoria
Bosch Zaragoza, Rafel	Aj. EU
García-Valdés Pukkits, Elena	TU
Bergueiro López, Ramón	TU
Jiménez-Flores, Rafael	
Guasp Mascaró, Caterina	B

Nombre total d'investigadors de la UIB: 4.

Keywords: cheese, whey, -lactalbumin, -lactoglobulin, lactoferrin, lactose, acid lactic, bacteria, lactate, environmental contamination, depuration, ultrafiltration, reverse osmosis, FPLC, antibodies, ELISA, pathogens, bacteriophage, acid lactic fermentation, whole cell mass, food technology, dairy industry, food industry, animal feed supplement.

Summary

Cheese making is a fermentation process with long history and that allows the preservation of the nutritional value of milk. In cheese making only 10% by weight becomes cheese, the rest is an industrial waste stream (90% of the milk volume), whey. This effluent has a high organic content (mainly protein and lactose) that, accounting to current laws, has to be eliminated before its disposal. Anaerobic and aerobic treatment of whey is a possible solution to the contamination problema that represents whey from cheese. However, the qualities of the main proteins from whey ((-lactalbumin, (-lactoglobulin, BSA and Lactoferrin) such as gelling, water retention, emulsification, foaming and antibacterial capacity, as well as the high lactose concentration, make whey a product with high potential to be used in industries such as feed, meats, dairy and pharmaceutical. In this project, we propose to study the biochemical and microbiological quality of whey using molecular and traditional techniques with the objective of evaluating its particular potential in the above-mentioned industries. We will apply experimental models in the laboratory to process whey produced locally and evaluate its commercial potential. Finally, based on the generated data, an assessment will be made on the possible technological and economical potential of whey within the community of Balearic Islands.

Títol: Estudi del procés de compostatge i de la qualitat del compost.

Centre: Departament de Biologia. Edifici Guillem Colom Casanovas.

Investigador principal: LALUCAT JO, Jordi

Categoria: CU (àrea de coneixement: Microbiologia).

Inici: 2000. **Fi:** 2001.

Membres de l'equip	Categoria	Dedicació (h/setm.)
Lalucat Jo, Jordi	CU	32
Estela Ripoll, Josep M.	TU	32
Garcia Garí, Patricia	B	32
Ferrero, Marcela		32

Nombre total d'investigadors de la UIB: 3.

Total EJC/setmana: 2,4.

Keywords: compositing, compost, sludge, microbiology, analytical chemistry.

Summary

The aim of the compositing process is the reduction in volume of solid organic wastes, and its transformation in a stable product to be used in agriculture, gardening or forestry. Compost quality is influenced by the starting substrate, the efficiency of the process and the consistency of the product. Quality is measured basically by the absence of heavy metals and the absence of pathogens. The physical, chemical and microbiological characteristics of starting materials, process and product will be studied. Main objective is the characterization of the process to ensure a compost of good quality. Traditional microbiological procedures, together with techniques used in molecular microbial ecology, will be used to characterize the microbial communities. At the same time, the physical and chemical parameters will be determined to favor the metabolic processes in each phase. The time needed for the process can be shortened optimizing the microbial activities. Taken all the results together, the standards of quality for the application of the compost in the Balearic Islands may be established. The knowledge gained during the study can be transferred immediately to the industrial sector. It will be applied very soon, due to the new local directive for the treatment of urban refuse in the Balearic Islands.

Referència: FIS00-0486. Fons d'Investigació Sanitària.

Títol: Regulación de la expresión de cápsula y su relación con la respuesta inmunitaria en las infecciones respiratorias causadas por *Streptococcus pneumoniae* y *Klebsiella pneumoniae*.

Centre: Hospital Son Dureta.

Investigador principal: ALBERTÍ SERRANO, Sebastià.

Categoria: AS. (àrea de coneixement: Microbiologia).

Inici: 2000. **Fi:** 2002.

Membres de l'equip	Categoria
Albertí Serrano, Sebastià	As.
Cortés García, Guadalupe	B
Borrel Solé, Núria	
Noguera Bennàsar, Francesca A.	
Riera Jaume, Melsion	
Ramírez Rosales, Antoni	

Nombre total d'investigadors de la UIB: 2.

Summary

Respiratory infections caused by *Streptococcus pneumoniae* and *Klebsiella pneumoniae* are particularly common in patients with certain underlying conditions (i.e. COPD). These patients are more susceptible to these infections, but the reasons for their susceptibility are not clear.

Objetives: to study two aspects involved in the predisposition to bacterial respiratory infections of certain patients: the expression or upregulation of a bacterial virulence factors (i.e. capsule polysaccharide) and the immune response.

Metodology: we will investigate whether the cellular or environmental conditions of the lungs from these patients enhance the production of the capsule polysaccharide, the most important virulence factor of these pathogens. For this purpose, we will study in constructing transcriptional fusions between the promoter regions of the capsule genes and the CAT reporter system using representative strains from both microorganisms. In addition, we will compare the humoral and cellular immune innate response of patients with infections by *Streptococcus pneumoniae* and *Klebsiella pneumoniae* and of healthy controls to identify the predisposing factors leading to those infections. For this purpose, we will characterize the deposition and degradation of complement, and the resistance to opsonophagocytosis and to certain antimicrobials of the bacterial isolates from patients. These experiments will be carried out both with serum and immune cells from patients and healthy controls.

Participacions a altres projectes

Referència: 2FD97-0287 (DGES). Fons FEDER.

Títol: Papel de la molécula de la membrana externa de bacterias gram-negativas: como inmunomodulador de la prevención y tratamiento de procesos infecciosos en avicultura.

Investigador principal: TOMÁS MAGAÑA, Juan.

Centre: Universitat de Barcelona.

Investigadors de la UIB:

BENEDÍ BENITO, Vicente J.

Categoria: TU (àrea de coneixement: Microbiologia).

ALBERTÍ SERRANO, Sebastià.

Categoria: As. (àrea de coneixement: Microbiologia).

Inici: 1998. **Fi:** 2001.

Referència: PB97-0932 (DGES). Programa sectorial de promoció general del coneixement.

Títol: Moléculas de la membrana externa y estructuras adicionales de tres bacterias gram-negativas implicadas en la virulencia: estudio genético y su uso como vacunas.

Investigador principal: TOMÁS MAGAÑA, Juan.

Centre: Universitat de Barcelona.

Investigador de la UIB: BENEDÍ BENITO, Vicente J.

Categoria: TU (àrea de coneixement: Microbiologia).

Total EJC/setmana: 0,4.

Inici: 1998. **Fi:** 2001.

Referència: PB97-0790 (DGES). Programa sectorial de promoció general del coneixement.

Títol: Patrones morfológicos en partes esqueléticas de moluscos actuales y fósiles. Origen e implicaciones evolutivas.

Investigador principal: CHECA GONZÁLEZ, Antonio G.

Centre: Universidad de Granada.

Investigador de la UIB: GÁLLEGO CASTEJÓN, Luis.

Categoria: CU (àrea de coneixement: Biologia Animal).

Total EJC/setmana: 0,8.

Inici: 1999. **Fi:** 2001.

Referència: OT00-037-C17-05.

Títol: Tipificación, cartografía y evaluación de los pastos españoles.

Investigador principal: RALLO GARCÍA, Juan.

Centre: Conselleria d'Agricultura i Pesca del Govern Balear.

Investigador de la UIB: MEDRANO GIL, Hipólito.

Categoria: CU (àrea de coneixement: Biologia Vegetal).

Inici: 2000. **Fi:** 2003.

Referència: 1FD97-551 (CICYT). Fons FEDER.

Títol: Mejora de la tecnología de obtención, almacenamiento, germinación y uso de semillas de especies silvestres utilizadas en los planes de reforestación y revegetación de la Comunidad Valenciana.

Investigador principal: GARCÍA FAYOS, P.

Centre: Centre d'Investigacions sobre Desertificació (València).

Investigador de la UIB: MEDRANO GIL, Hipólito.

Categoria: CU (àrea de coneixement: Biologia Vegetal).

Inici: 1999. **Fi:** 2001.



DEPARTAMENT DE BIOLOGIA FONAMENTAL I CIÈNCIES DE LA SALUT

- Regulación por nutrientes de la termogénesis y genes relacionados con la obesidad.
PALOU OLIVER, Andreu
- Aplicación de las técnicas de análisis espectral y no lineal de series temporales al estudio de la evolución del sueño y la regulación cardiorespiratoria.
RIAL PLANAS, Rubén V.
- Bases genético-moleculares de la regulación del peso corporal y la obesidad (GENOBES).
PALOU OLIVER, Andreu
 - Efecto termogenético de nutrientes en el control del peso corporal (NUTRITERM).
SERRA VICH, Francesca
 - Caracterización del sistema de la leptina en el tracto gastrointestinal (GASTRILEP).
PICÓ SEGURA, Catalina.
 - Dimorfismo sexual en la regulación adrenérgica de la termogénesis (DISRAT).
ROCA SALOM, M. Pilar.
- Cambios termogenéticos durante la biogénesis y desarrollo mitocondrial (CAMTER).
GARCÍA PALMER, Francisco J.
 - Regulación termogenética a nivel mitocondrial.
GIANOTTI BAUZÀ, Magdalena

Referència: PM97-0094 (DGES). Programa sectorial de promoció general del coneixement

Títol: Regulación por nutrientes de la termogénesis y genes relacionados con la obesidad.

Classificació UNESCO: 230221.

Centre: Departament de Biologia Fonamental i Ciències de la Salut. Edifici Guillem Colom Casasnovas.

Investigador principal: PALOU OLIVER, Andreu.

Categoria: CU (àrea de coneixement: Bioquímica i Biologia Molecular).

Inici: 1998.

Fi: 2001.

Membres de l'equip	Categoria	Dedicació (h/setm.)
Palou Oliver, Andreu	CU	32
Bonet Piña, M. Lluïsa	TEU	32
García Palmer, Fco José	TU	32
Gianotti Bauzà, Magdalena	CEU	32
Picó Segura, Catalina	TEU	32
Pons Biescas, Antoni	TU	32
Roca Salom, Pilar	TU	32
Serra Vich, Francesca	CEU	32
Lladó Sampol, Isabel	TEU	32
Proenza Arenas, Ana Maria	Aj. U	32
Oliver Oliver, Jordi	Aj. U	32
Balaguer Covas, Jaume	As.	16
Pablo Cànaves, Josep Agustí	As.	16
Matamoros Florí, Núria	As.	16
Quevedo Coli, Santiago	As.	16
Vilimelis Montsó, Josefina	As.	16
Crespí Rotger, Sebastià		16
Crespí Bestard, Catalina		16
Oliver Vara, Paula	B	40
Ribot Riutort, Joan	B	40

Nombre total d'investigadors de la UIB: 18.

Total EJC/setmana: 12,8.

Keywords: obesity, thermogenesis, cell differentiation, adipocytes, brown and white adipose tissue, UCP, uncoupling proteins.

Summary

This project comes from our accumulated experience in the subject of facultative thermogenesis, both at the molecular and the cellular levels. We are intending to obtain new insights into the obesity-related genes, focusing on adipocytes and thermogenesis and their physiological significance in relationship with obesity and its metabolic complications. Our current goal is to delineate the properties of some essential nutrients and related products as potential regulators of the thermogenic activity and cell proliferation/differentiation, particularly of brown and white adipocytes. For such studies, the pre-selected nutrients include: essential fatty acids (linoleic acid, arachidonic acid),

retionic acid (all-trans and 9-cis) and several carotenoids related to vitamin A, butyric and hydroxybutyric acid, vitamin D3 and the amino acids tryptophan and arginine. The action of these compounds is to be studied both in systems *in vitro* (isolated adipocytes, adipocyte primary cultures, immortal adipocyte cell lines) and *in vivo* in rodents, including animals with dietary-induced obesity and nutritional deficiencies. The parameters to be determined include: thermogenesis (heat production, UCPs levels, GDP-binding), cell proliferation (protein and DNA content, cellularity, DNA synthesis) and cell differentiation (morphology and levels of molecular markers of the brown and white adipocyte differentiated phenotype, such as triglycerides, LPL, C/EBP β , α 2, pRB, β 3 adrenergic receptors, leptin and its receptors, TNF α and others). Besides, and through collaborations with other research groups, the polymorphism of genes potentially involved in body weight control in relationship with obesity and its clinical complications will be studied in human populations.

Referència: FIS00-0022-01. Fons d'Investigació Sanitària.

Títol: Aplicación de las técnicas de análisis espectral y no lineal de series temporales al estudio de la evolución del sueño y la regulación cardiorespiratoria.

Centre: Departament de Biologia Fonamental i Ciències de la Salut. Edifici Guillem Colom Casanovas.

Investigador principal: RIAL PLANAS, Rubén V.

Categoria: CU (àrea de coneixement: Fisiologia).

Inici: 2000. **Fi:** 2002.

Membres de l'equip	Categoria	Dedicació (h/setm.)
Rial Planas, Rubén V.	CU	32
Nicolau Llobera, Maria C.	TEU	32
Gené Ramis, Lluís		16
Revert Vidal, Xavier	B	16
Esteban Valdés, Susana	TU	12

Nombre total d'investigadors de la UIB: 4.

Total EJC/setmana: 2,7.

Keywords: sleep, evolution, cardiorespiratory regulation, neonates, reptiles, sudden infant death, spectral analysis, nonlinear analysis.

Summary

This study aims at understanding the origin and the functions of the REM sleep by analysing the cardiorespiratory regulation in reptiles and neonates. This will be performed by using non-linear analysis techniques that seems to overcome the limitations of the linear techniques with regard to EEG sleep studies. Cardiac activity, respiration (frequency, amplitude, pauses) and EEG will be studied in both reptiles and new-borns. Data will be recorded in reptiles by using chronically implanted electrodes, while disk adhesive electrodes will be used in the new-born. The obtained signals will be stored in a computer for further analysis. The obtained results will be used to develop evidence of homology between reptilian rest and human sleep states. It has been claimed that the reptilian respiration shows many characteristics similar to that of the foetus and neonate. In addition it is well known that this physiological variable deeply depends on the vigilance status, with an increased vulnerability during REM sleep. In consequence, the results obtained in reptiles could contribute to increase the knowledge on the cardiorespiratory pathologies in the new-born: periodic breathing, distribution of apneic pauses and their determining factors, irregularity in cardiac frequency, asystolia, sudden infant death, etc.

Projecte coordinat núm.: BFI2000-0988-C06-01. Ministeri de Ciència i Tecnologia.
Modalitat: P1. Projecte d'investigació bàsica no orientada.
Títol del projecte coordinat: [Bases genético-moleculares de la regulación del peso corporal y la obesidad \(GENOBES\)](#).
Classificació UNESCO: 320602, 230221, 230204.
Centre: Departament de Biologia Fonamental i Ciències de la Salut. Edifici Guillem Colom Casasnovas.
Investigador principal: [PALOU OLIVER, Andreu](#).
Categoria: CU (àrea de coneixement: Bioquímica i Biologia Molecular).
Inici: 2000. **Fi:** 2003.

Subprojecte 2: BFI2000-0988-C06-02.
Títol del subprojecte: [Efecto termogenético de nutrientes en el control del peso corporal \(NUTRITERM\)](#).
Investigador responsable: [SERRA VICH, Francesca](#).
Categoria: CEU (àrea de coneixement: Nutrició i Bromatologia).

Subprojecte 3: BFI2000-0988-C06-03.
Títol del subprojecte: [Caracterización del sistema de la leptina en el tracto gastrointestinal \(GASTRILEP\)](#).
Investigador responsable: [PICÓ SEGURA, Catalina](#).
Categoria: CEU (àrea de coneixement: Bioquímica i Biologia Molecular).

Subprojecte 4: BFI2000-0988-C06-04.
Títol del subprojecte: [Dimorfismo sexual en la regulación adrenérgica de la termogénesis \(DISRAT\)](#).
Investigador responsable: [ROCA SALOM, M. Pilar](#).
Categoria: TU (àrea de coneixement: Bioquímica i Biologia Molecular).

Subprojecte 5: BFI2000-0988-C06-05.
Títol del subprojecte: [Cambios termogenéticos durante la biogénesis y desarrollo mitocondrial \(CAMTER\)](#).
Investigador responsable: [GARCÍA PALMER, Francisco J.](#)
Categoria: TU (àrea de coneixement: Bioquímica i Biologia Molecular).

Subprojecte 6: BFI2000-0988-C06-06.
Títol del subprojecte: [Regulación termogenética a nivel mitocondrial](#).
Investigador responsable: [GIANOTTI BAUZÀ, Magdalena](#).
Categoria: CEU (àrea de coneixement: Bioquímica i Biologia Molecular).

Membres de l'equip	Categoria	Dedicació
Palou Oliver, Andreu	CU	Compartida
Serra Vich, Francesca	TEU	Única
Picó Segura, Catalina	CEU	Única
Roca Salom, M. Pilar	TU	Única
García Palmer, Francisco J.	TU	Única
Gianotti Bauzà, Magdalena	CEU	Única

Bonet Piña, Maria L.	CEU	Única
Lladó Sampol, Isabel	TEU	Única
Proenza Arenas, Ana M.	TEU int.	Única
Quevedo Coli, Santiago	As.	Única
Oliver Oliver, Jordi	TEU int.	Única
Pablo Cànaves, Josep A.	As.	Única
Conde Riera, Pere B.		Única
Vilimelis Montsó, Josefina	As.	Única
Veny Riera, Guillem		Única
Balaguer Covas, Jaume	As.	Única
Guardiola Serrano, Francesca	As.	Única

Nombre total d'investigadors de la UIB: 15.

Keywords: obesity, thermogenesis, leptin, UCPs, obesity genes, mitochondria, regulation by nutrients.

Summary

This co-ordinated project is aimed to contribute to the knowledge of the genetic and molecular bases of body weight control and obesity. In the last 5 years, basic research in this field has lived a bust, with milestones such as the cloning of the ob gene and the identification of its products, leptin, as a key hormone in the control of food intake (as well as thermogenesis) through the CNS, and the decoding of the thermogenic systems, which determines the energy efficiency of nutrient metabolism. Our group, with a continuous interest in the field dating back 15 years, has been at the centre of this huge activity. Among our more recent contributions are: 1) the discovery that some nutrients can regulate the expression of genes related to thermogenesis and obesity, 2) the discovery of an association between certain gene polymorphisms and obesity and 3) the discovery that leptin, which is produced mainly in adipose tissues, is also produced in the human stomach (results in press). These contributions are the foundations of three of the subprojects presented here, the goals of which are: to further study the effects and mechanisms of action of already identified regulatory nutrients and to identify new putative regulatory nutrients, to establish possible associations between new gene polymorphisms and obesity and to investigate the possible role of leptin as a short-term satiating signal, characterising leptin expression in the gastrointestinal tract. In close association, another subproject deals with the study of the molecular and physiological bases of the sexual dimorphism in the regulation of thermogenesis and the mobilisation of fat stores, which has been previously reported by our group and could be related to the well known gender differences in fat distribution. Finally, two subprojects go further in the characterisation of the distinct thermogenic capacity and activity of the different mitochondrial subpopulations, and its possible implication in body weight disorders. This project is connected to other European activities, since, with complementary objectives, we have already established collaborations with the most important groups in the field, in the framework of COST action 918 (participated by 17 European Countries and managed by the co-ordinator of the present project) and of other projects requested to the V Framework Programme. This co-ordinated project is the natural continuity of our previous efforts in a field that has a great and increasing scientific impact, as well as important economic and social implications.



DEPARTAMENT DE CIÈNCIES DE L'EDUCACIÓ

- El maltrato e intimidación entre iguales “bullying” en el medio educativo.
ORTE SOCIAS, M. del Carme
- Diseño e implementación de un dispositivo metodológico para sistemas de enseñanza flexible mediante aplicaciones y servicios telemáticos (DIMESEF-TEL).
SALINAS IBAÑEZ, Jesús
- Análisis y optimización de los itinerarios formativos para favorecer la calidad de vida de las personas con discapacidad (FORDIS).
MUNTANER GUASP, Joan J.
- Asociaciones juveniles, educación y socialización (1900-1976). Un estudio comparativo entre Cataluña, Valencia y Baleares.
SUREDA GARCIA, Bernat
- Perspectives de les noves tecnologies a la formació permanent: disseny i implementació.
SALINAS IBÁÑEZ, Jesús
- La evaluación de la impulsividad y los déficits atencionales y su implicación en problemas de rendimiento académico del niño.
SERVERA BARCELÓ, Mateu

Referència: PB96-0192 (DGES). Programa sectorial de promoció general del coneixement.

Títol: El maltrato e intimidación entre iguales “bullying” en el medio educativo.

Classificació UNESCO: 6114.

Centre: Departament de Ciències de l'Educació. Edifici Guillem Cifre de Colonya.

Investigadora principal: ORTE SOCIAS, M. del Carme.

Categoria: TU (àrea de coneixement: Teoria i Història de l'Educació).

Inici: 1997. **Fi:** 2000.

Membres de l'equip	Categoria	Dedicació (h/setm.)
Orte Socias, M. del Carme	TU	21
March Cerdà, Martí Xavier	CU	16
Ballester Brage, Lluís	TU	16
Ferrà Coll, Patrícia	TEU	16

Nombre total d'investigadors de la UIB: 4.

Total EJC/setmana: 1,7.

Keywords: bullying, mistreatment, intimidation, groups of equal.

Summary

The objective that we outline us in the present investigation is the analysis of the characteristics of the mistreatment and intimidation among equal, more known as “bullying”, their extension, and their consequences from an educational point of view. In fact, one of the most meaningful phenomena than they are being developing within the different means and educational spaces is the mistreatment among equal. In this sense is intended by a part to know the reality of the bullying within our educational contexts, such as the scholastic context of functional households, the context of the juvenile leisure centers, etc, and on the other hands to accomplish a theoretical review on the state of the issue of such problematic. All this with the purpose last of power to establish, to design and to apply social and educational intervention strategies of the studied population and of the commissioned professionals of your education, that is to say, teachers, social educators, directing of center, scholastic psychologists, scholastic direction equipment, families, etc.

And finally, we intend to develop a permanent investigation line that permits to go knowing the characteristics and evolution of this phenomenon, as well as the efficiency of the used intervention strategies, establishing indicatory of evaluation.

Referència: BSO2000-0949. Ministeri de Ciència i Tecnologia.

Modalitat: P1. Projecte d'investigació bàsica no orientada.

Títol: Diseño e implementación de un dispositivo metodológico para sistemas de enseñanza flexible mediante aplicaciones y servicios telemáticos (DIMESEF-TEL).

Classificació UNESCO: 5802.

Centre: Departament de Ciències de l'Educació. Edifici Guillem Cifre de Colonya.

Investigador principal: SALINAS IBAÑEZ, Jesús.

Categoria: TU (àrea de coneixement: Didàctica i Organització Escolar).

Inici: 2000. **Fi:** 2003.

Membres de l'equip	Categoria	Dedicació
Salinas Ibañez, Jesús	TU	Compartida
Bibiloni Coll, Antoni	TEU	Compartida
Pérez Garcias, Adolfina	TEU	Compartida
Urbina Ramírez, Santos	Aj. EU	Compartida
Morlà Garcias, Maria	Aj. EU	Compartida
De Benito Crosetti, Bàrbara	Tec.	Compartida
Oliver Ribas, Miquel	Tec.	Compartida

Nombre total d'investigadors de la UIB: 7.

Keywords: flexible learning, tele-teaching, real time applications, internet, videoconference, computer mediated communication, virtual training environment, distributed hypermedia, lifelong training.

Summary

The basic objectives of this project refer to the correct use of the Information and Communication Technologies in the teaching and learning process. And more exactly in the Campus Extens project of the University of Balearic Islands. Campus Extens is to offer masters, postgraduate courses and inservice and preservice education to people of Menorca and Ibiza through videoconference systems, hypermedia distributed materials, computer mediated communications, etc.

In this context is planned the identification of the correct integration of the telematic tools in the education and teacher training. Refers to the organization of a methodological system to implement a tele-teaching system of the Campus Extens, the design and development of materials and the validation of methodologies and pedagogic models.

Referència: SEC2000-1620. Ministeri de Ciència i Tecnologia.

Modalitat: P2. Projecte d'investigació bàsica orientada.

Títol: Análisis y optimización de los itinerarios formativos para favorecer la calidad de vida de las personas con discapacidad (FORDIS).

Classificació UNESCO: 5802, 6102.

Centre: Departament de Ciències de l'Educació. Edifici Guillem Cifre de Colonya.

Investigador principal: MUNTANER GUASP, Joan J.

Categoria: CU (àrea de coneixement: Didàctica i Organització Escolar).

Inici: 2000.

Fi: 2003.

Membres de l'equip	Categoria	Dedicació
Muntaner Guasp, Joan J.	CU	Compartida
Forteza Forteza, M. Dolors	TEU	Compartida
Rosselló Ramon, M. Rosa	TEU	Compartida
Verger Gelabert, Sebastià	Aj. EU	Compartida
Ferrer Cerdà, Elena	As.	Compartida

Nombre total d'investigadors de la UIB: 5.

Keywords: transition, handicapped, occupational integration, social integration, quality of life.

Summary

At present nobody questions that the occupational integration of the handicapped persons is an indispensable requirement for the full normalization. Equally, nobody casts doubt on that the adequate professional training, promoting to the maximum the capacities of the handicapped persons, it is the key to improve their situation in the occupational world and consequently the social integration. Nevertheless, in spite of the training proposals adopted by the educational system, exists a vacuum and discontinuity among the obligatory education and the different formative itineraries that prepare for the active life. This study not only intends to analyze these itineraries but also to outline action proposals in order to adjust the formative offer that make possible that the handicapped persons could live a so full life as to them will be possible. As well as in the different educational stages is underlined the importance of a comprehensive curriculum in the professional training of handicapped persons this conceptualization acquires, if fits, a special relevancy. First of all because the transition process to the adult life must answer to a detailed planning and coordinated by an interdisciplinary equipment, on the base of an individualized approach of a needs of handicapped persons. From the premise of the fact that only as of a professional training of agreed quality to the characteristics and possibilities of the handicapped persons is possible the integration of these in the occupational market, the position of this investigation has as end last to guide the work of the professionals towards the community integration of the handicapped persons.

Referència: BSO2000-0663-C04-02. Ministeri de Ciència i Tecnologia.

Modalitat: P1. Projecte d'investigació bàsica no orientada.

Títol: Asociaciones juveniles, educación y socialización (1900-1976). Un estudio comparativo entre Cataluña, Valencia y Baleares.

Classificació UNESCO: 550607.

Centre: Departament de Ciències de l'Educació. Edifici Guillem Cifre de Colonya.

Investigador principal: SUREDA GARCIA, Bernat.

Categoria: CU (àrea de coneixement: Teoria i Història de l'Educació).

Inici: 2000. **Fi:** 2003.

Membres de l'equip	Categoria	Dedicació
Sureda Garcia, Bernat	CU	Compartida
Pastor Homs, Maria	TU	Única
Comas Rubí, Francesca	TEU int.	Única
Vallespir Soler, Jordi	TU	Compartida

Nombre total d'investigadors de la UIB: 4.

Projecte d'investigació en tecnologies de la informació i comunicacions, medi ambient, educació i foment (Conselleria d'Educació, Cultura i Esports del Govern Balear).

Títol: Perspectives de les noves tecnologies a la formació permanent: disseny i implementació.

Centre: Departament de Ciències de l'Educació. Edifici Guillem Cifre de Colonya.

Classificació UNESCO: 5801.

Investigador principal: SALINAS IBÁÑEZ, Jesús.

Categoria: TU (àrea de coneixement: Didàctica i Organització Escolar).

Inici: 1999. **Fi:** 2000.

Membres de l'equip	Categoria	Dedicació (h/setm.)
Salinas Ibáñez, Jesús	TU	8
Pérez Garcias, Adolfina	TEU	12
Morlà Garcias, M. Miquela	Aj. EU	12
Urbina Ramírez, Santos	Aj. EU	12
Salom Fuster, Marc	As.	8
Negre Bennàsar, Francesca	As.	8

Nombre total d'investigadors de la UIB: 6.

Total EJC/setmana: 1,5.

Keywords: teleteaching, telematic applications, real time, internet, videoconference, computer mediated communication.

Summary

The aims of this project are referred to the use of the information and communication technology (ICT) in teaching/learning process and more concretely, in the project 'Campus Extens' of the University of Balearic Islands to provide training opportunities of degree, postgraduate, update and professional competence to citizens of Menorca and Eivissa through a videoconferencing system, distributed hypermedia materials, computer mediated communication, etc.

Within this framework is intended to identify the way to integrate telematics tools in the training and update of the educators, to organise a methodological device adapted to implement a system of teleteaching of Campus Extens, to the design and materials development, as well as the didactic strategies validation and pedagogic models.

Referència: Centre d'Investigació i Documentació Educativa (CIDE). Ministeri d'Educació i Cultura.

Títol: La evaluación de la impulsividad y los déficits atencionales y su implicación en problemas de rendimiento académico del niño.

Centre: Departament de Ciències de l'Educació. Edifici Guillem Cifre de Colonya.

Investigador principal: SERVERA BARCELÓ, Mateu.

Categoria: TU (àrea de coneixement: Personalitat, Avaluació i Tractament Psicològics).

Inici: 1998.

Fi: 2000.

Participacions a altres projectes

Referència: TEL98-0454-C02-02 (DGES). Programa nacional d'aplicacions i serveis telemàtics.

Títol: EDU-PUPITRE. Estrategias para el diseño y evaluación de un entorno virtual de formación.

Investigadora principal: GISBERT CERVERA, Mercè.

Centre: Universitat Rovira i Virgili.

Investigadors de la UIB:

SALINAS IBÁÑEZ, Jesús.

Categoria: TU (àrea de coneixement: Didàctica i Organització Escolar).

Total EJC/setmana: 0,4.

PÉREZ GARCÍAS, Adolfinia

Categoria: TEU (àrea de coneixement: Didàctica i Organització Escolar).

Total EJC/setmana: 0,4.

MORLÀ GARCÍAS, M. Miquela.

Categoria: Aj. EU (àrea de coneixement: Didàctica i Organització Escolar).

Total EJC/setmana: 0,4.

Inici: 1998.

Fi: 2000.



DEPARTAMENT DE CIÈNCIES HISTÒRIQUES I TEORIA DE LES ARTS

- Estrabón. Geografía. Libro VIII. El Peloponeso.
TORRES ESBARRANC, Joan Josep
- Corona, municipio y fiscalidad (Mallorca, 1330-1500).
CATEURA BENNÀSSER, Pau
- Estudio científico-técnico del retablo en Mallorca. Siglos XVI-XVIII.
GAMBÚS SÁIZ, Mercè
- El reinado de Felipe II en Mallorca.
JUAN VIDAL, Josep
- El asociacionismo en las Islas Baleares y sus publicaciones periódicas 1887-1983.
SERRA BUSQUETS, Sebastià
- Política municipal y servicios sociales. Análisis comparado de núcleos urbanos y rurales, 1850-1936.
MOLL BLANES, Isabel
- La arquitectura del ocio. La incidencia del fenómeno turístico en la arquitectura y urbanismo de las Islas Baleares.
SEGUÍ AZNAR, Miquel
- Vivir en Mallorca medieval: documentación iconográfica.
BARCELÓ CRESPI, Maria
- Bases para una sistematización de las fuentes documentales y gráficas para el estudio de la historia de las artes plásticas y de la fotografía en Baleares entre 1890 y 1980.
CANTARELLAS CAMPS, Catalina
- Sociedades prehistóricas y cambio paleoecológico en ecosistemas insulares. El paradigma balear (ARQUEOBALEAR).
GUERRERO AYUSO, Víctor M.
- Imaginería y retablo en Mallorca (época medieval y moderna). Bases científico-técnicas para su conservación.
GAMBÚS SAIZ, Mercè
- Intelectuales y cultura política en la Europa sur mediterránea (siglos XIX-XX).
CASASSAS YMBERT, Jordi
- Poder y fiscalidad en la Cataluña de los siglos XIII y XIV: bases jurídicas, y trasfondo político.
SÁNCHEZ MARTÍNEZ, Manuel

Referència: PB96-0195 (DGES). Promoció sectorial de promoció general del coneixement.

Títol: Estrabón. Geografía. Libro VIII. El Peloponeso.

Classificació UNESCO: 570112.

Centre: Departament de Ciències Històriques i Teoria de les Arts. Edifici Ramon Llull.

Investigador principal: TORRES ESBARRANC, Joan Josep.

Categoria: TU (àrea de coneixement: Filologia Grega).

Inici: 1997. **Fi:** 2000.

Membres de l'equip	Categoria	Dedicació (h/setm.)
Torres Esbarranc, Joan Josep	TU	32

Nombre d'investigadors de la UIB: 1.

Total EJC/setmana: 0,8.

Keywords: peloponnesus, strabo.

Summary

Commentaries on the text, with my translation, of the book VIII of Strabo, referring to the Peloponnesus. In the paragraph G of this Report is presented a synopsis of the work. The researcher has been devoted to this field some years. He has published Thucydides. History of the Peloponnesian War, in four volumes, as will be detailed in the paragraph H.

Referència: PB96-0145 (DGES). Programa sectorial de promoció general del coneixement.

Títol: Corona, municipio y fiscalidad (Mallorca, 1330-1500).

Classificació UNESCO: 5504.

Centre: Departament de Ciències Històriques i Teoria de les Arts. Edifici Ramon Llull.

Investigador principal: CATEURA BENNÀSSER, Pau.

Categoria: TU (àrea de coneixement: Història Medieval).

Inici: 1997. **Fi:** 2000.

Membres de l'equip	Categoria	Dedicació (h/setm.)
Cateura Bennàsser, Pau	TU	24
Urgell Hernández, Ricard	As.	16

Nombre total d'investigadors de la UIB: 2.

Total EJC/setmana: 1.

Summary

From 1300 permanent taxation began in the kingdom of Mallorca. Whether called *sisas* (shaving) or, later, *ajudes* (aid) indirect taxes became from the beginning the fundamental option in the municipalities' tax strategy. But indirect taxes proved maladapted to the challenge of the great Mediterranean upheavals of the mid-14th century. Public debt, instituted as an emergency solution, ended up devouring all the municipalities' resources.

Referència: PB96-0202 (DGES). Programa sectorial de promoció general del coneixement.

Títol: Estudio científico-técnico del retablo en Mallorca. Siglos XVI-XVIII.

Classificació UNESCO: 5506, 5502, 2301, 6203.

Centre: Departament de Ciències Històriques i Teoria de les Arts. Edifici Ramon Llull.

Investigadora principal: GAMBÚS SÁIZ, Mercè.

Categoria: TU (àrea de coneixement: Història de l'Art).

Inici: 1997. **Fi:** 2000.

Membres de l'equip	Categoria	Dedicació (h/setm.)
Gambús Sáiz, Mercè	TU	32
Genestar Julià, Catalina	TU	32
Palou Franco, Josefina	TU	32
Sastre Moll, Jaume	As.	16
Reig Morro, Antònia		16

Nombre total d'investigadors de la UIB: 4.

Total EJC/setmana: 2,8.

Keywords: altarpiece, sculpture, painting, polychromy, restoration, conservation, pigment determination, binding media determination.

Summary

The aim of this present research project is to do a systematic study of altarpieces in Majorca, between XVIth and XVIIIth centuries is an approach done from interdisciplinary point of view. For this purpose we analyse some artistic aspects such as (stylistic evolution, archival localization, bibliographical and graphical sources). In the same way, identification of the material used for the construction of their paintings (stratigraphy of the pictorial layers, identification of their mineralogical components and nature of the binding media used) will be determined.

Referència: PB97-0152 (DGES). Programa sectorial de promoció general del coneixement.

Títol: El reinado de Felipe II en Mallorca.

Classificació UNESCO: 550404.

Centre: Departament de Ciències Històriques i Teoria de les Arts. Edifici Ramon Llull.

Investigador principal: JUAN VIDAL, Josep.

Categoria: CU (àrea de coneixement: Història Moderna).

Inici: 1998. **Fi:** 2001.

Membres de l'equip	Categoria	Dedicació (h/setm.)
Juan Vidal, Josep	CU	24
Deyà Bauzà, Miquel	As.	18
Vaquer Bennàssar, Onofre	As.	18
Serra Barceló, Jaume		20

Nombre total d'investigadors de la UIB: 3.

Total EJC/setmana: 1,5.

Summary

Studying the reign of Philip II in Mallorca involves investigating in depth a series of fundamental topics in order to be able to understand fully the evolution of society and the way of life during that area. Amongst these topics we highlight the following:

1. The system of government and the types of ruling power of the time: the privileges of the kingdom, royal administration and that of the University and the institutional reforms which took place.
2. Economic activities: demographic evolution, the agrarian problem, manufacturing activities and business relations, as well as the complex web of taxes and finance.
3. Defence and protection of the realm in the face of moslem pirate attacks.
4. Violence and internal social conflict, with special emphasis on the outlaw problem.
5. The Church and religious feeling at that particular crossroads market by the conclusion of the Council of Trent.
6. Cultural life: the "Estudi General", "Lulismo", history and literature.

Referència: PB97-0138 (DGES). Programa sectorial de promoció general del coneixement.

Títol: [El asociacionismo en las Islas Baleares y sus publicaciones periódicas 1887-1983.](#)

Classificació UNESCO: 4500.

Centre: Departament de Ciències Històriques i Teoria de les Arts. Edifici Ramon Llull.

Investigador principal: [SERRA BUSQUETS, Sebastià.](#)

Categoria: TU (àrea de coneixement: Història Contemporània).

Inici: 1998 **Fi:** 2001.

Membres de l'equip	Categoria	Dedicació (h/setm.)
Serra Busquets, Sebastià	TU	16
Duran Pastor, Miquel	CU	32
Castro Valdomar, M. Jesús	TEU	32
Marimon Riutort, Antoni	Aj. EU	16
Buades Juan, Josep Maria	B	40

Nombre total d'investigadors de la UIB: 5.

Total EJC/setmana: 3,4.

Keywords: associationism, Balearic Islands, periodic publications.

Summary

With this project we pretend realize an exhaustive and informatic catalog of the associations that have developed their activities in Balearic Islands and their periodic publications, as soon as an analysis of their incidence in society and their ideologic contributions, from the adoption of the juncy 30th 1887 associations law until the promulgation of the Balearic Island Home Rule (1983).

Referència: PB98-0126 (DGESIC). Programa sectorial de promoció general del coneixement.

Títol: Política municipal y servicios sociales. Análisis comparado de nucleos urbanos y rurales, 1850-1936.

Classificació UNESCO: 630302.

Centre: Departament de Ciències Històriques i Teoria de les Arts. Edifici Ramon Llull.

Investigadora principal: MOLL BLANES, Isabel.

Categoria: TU (àrea de coneixement: Història Contemporània).

Inici: 1999. **Fi:** 2001.

Membres de l'equip	Categoria	Dedicació (h/setm.)
Moll Blanes, Isabel	TU	16
Fullana Puigserver, Pere	As.	16
Salas Vives, Pere	As.	16

Nombre total d'investigadors de la UIB: 3.

Total EJC/setmana: 1,2.

Keywords: social history, local politics, life conditions.

Summary

The aim of the project is the analysis of local politics (city and village) in terms of providing services to change the conditions of urban life (water-supply networks, sewerage systems, illumination of the streets, construction of hard pavements, removal of human waste, schools...). We want to test the creation of those social services before the rise of Welfare State, to link this policy to the growing of urban population, and to look for its ideological background. Finally we want to observe if there is any kind of relation between the growing exercise of civil rights and the increase of those services. We compare urban and rural settings in a context of agrarian development, in Mediterranean Europe.

Referència: PB98-0168 (DGESIC). Programa sectorial de promoció general del coneixement.

Títol: La arquitectura del ocio. La incidencia del fenómeno turístico en la arquitectura y urbanismo de las Islas Baleares.

Classificació UNESCO: 550602.

Centre: Departament de Ciències Històriques i Teoria de les Arts. Edifici Ramon Llull.

Investigador principal: [SEGUÍ AZNAR, Miquel](#).

Categoria: CU (àrea de coneixement: Història de l'Art).

Inici: 1999. **Fi:** 2001.

Membres de l'equip	Categoria	Dedicació (h/setm.)
Seguí Aznar, Miquel	CU	32

Nombre total d'investigadors de la UIB: 1.

Total EJC/setmana: 0,8.

Keywords: history, architecture, urbanism, tourism, legislation, balearic islands.

Summary

The main objective of this research project is the study of the effects of the touristic phenomenon in the architecture and urbanism of the Balearic Islands - Majorca, Minorca, Ibiza and Formentera- between 1900, date in which the majorcans begin to realize the economical value of the touristic exploitation of the islands, and 1983, date of the approval of the "Plan provincial de ordenación de Baleares" (Provincial urbanistic plan of the Balearic Islands). We pretend to study two things: 1. The hotel and residential buildings from a typological and stylistic point of view; 2. The proposals and carrying out of the new touristical sites, both in the context of the historical development of the local tourism, and taking into account the evolution of the architecture and urbanism as well as the local and welfare estate dispositions and norms which have regulated them.

Referència: PB98-0166 (DGESIC). Programa sectorial de promoció general del coneixement.

Títol: [Vivir en Mallorca medieval: documentación iconográfica.](#)

Classificació UNESCO: 5503.

Centre: Departament de Ciències Històriques i Teoria de les Arts. Edifici Ramon Llull.

Investigadora principal: [BARCELÓ CRESPI, Maria.](#)

Categoria: TU (àrea de coneixement: Història Medieval).

Inici: 1999. **Fi:** 2002.

Membres de l'equip	Categoria	Dedicació (h/setm.)
Barceló Crespí, Maria	TU	16
Rosselló Bordoy, Guillem		16

Nombre total d'investigadors de la UIB: 1.

Total EJC/setmana: 0,4.

Keywords: majorca, medieval history, iconography, documentation, daily living, archaeology, cultural history.

Summary

The combination of different methods of investigation makes possible the intention of obtaining a documentary vision, archaeological and iconographic, of daily living in a concrete period of the history of Majorca (XIII-XVI centuries). That was a period of special importance, inasmuch as it meant the integration of the island in the Christian ambit (1229). It involved an evident cultural change. XIII and XIV centuries meant the full immersion in the european medieval culture, while the XV century. Although the social and economical problems linked to the period, was the prelude to the access to the new renacentist mentality.

Referència: PB98-0173 (DGESIC). Programa sectorial de promoció general del coneixement.

Títol: Bases para una sistematización de las fuentes documentales y gráficas para el estudio de la historia de las artes plásticas y de la fotografía en Baleares entre 1890 y 1980.

Classificació UNESCO: 550602.

Centre: Departament de Ciències Històriques i Teoria de les Arts. Edifici Ramon Llull.

Investigadora principal: CANTARELLAS CAMPS, Catalina.

Categoria: CU (àrea de coneixement: Història de l'Art).

Inici: 1999

Fi: 2002.

Membres de l'equip	Categoria	Dedicació (h/setm.)
Cantarellas Camps, Catalina	CU	32
Mulet Gutiérrez, Maria José	TEU	32
Lladó Pol, Francesca	TEU int.	32
Falero Folgoso, Francisco José	TEU int.	32
Reus Morro, Jaume	Aj. EU	32

Nombre total d'investigadors de la UIB: 5.

Total EJC/setmana: 4.

Keywords: painting, sculpture, photography, art criticism.

Summary

This research project is devoted to solve two main questions. 1) To compile systematically, and at the same time, selectively all kinds of sources -bibliographics, documentaries and graphics- related to the working, theory and criticism of Plastic Arts and Photography made at Balearic Islands between 1890 and 1980. 2) The artistic products research begin by choosing the most representative episodes and also the worst known of them belonging to this period. Together to this we also accomplish the task of contextualize the different artistic languages used. Two significative examples are the Modern Style and the art of the 70's. In short, this research try to developed a historical-artistic point of view, nowadays non-existent, from the work on two areas, concerning, in one hand, to document and cataloguing, and in the other hand, to analyze artisitic products.

Referència: BHA2000-1335. Ministeri de Ciència i Tecnologia.

Modalitat: P1. Projecte d'investigació bàsica no orientada.

Títol: [Sociedades prehistóricas y cambio paleoecológico en ecosistemas insulares. El paradigma balear \(ARQUEOBALEAR\).](#)

Classificació UNESCO: 55045, 550501.

Centre: Departament de Històriques i Teoria de les Arts. Edifici Ramon Llull.

Investigador principal: [GUERRERO AYUSO, Víctor M.](#)

Categoria: TEU (àrea de coneixement: Prehistòria).

Inici: 2000.

Fi: 2003.

Membres de l'equip	Categoria	Dedicació
Guerrero Ayuso, Víctor M.	TEU	Única
Calvo Trias, Manuel A.	Aj. EU	Única
Villanueva Bohigas, Gemma	Aj. EU	Única
Gomés Hachero, José S.		Compartida
Gual Cerdó, Joana M.		Compartida
López Pons, Antoni		Compartida
Costa Ribas, Benjamí		Única
Ensenyat Alcover, Josep F.		Compartida
Pons Homar, Gabriel		Única
Coll Conesa, Jaume		Compartida
Fornés Bisquerra, Joan F.		Única
Garcia Rosselló, Jaume		Única
Salvà Simonet, Bartomeu		Única
Quintana Abraham, Carles A.		Única

Nombre total d'investigadors de la UIB: 3.

Keywords: Balearic Islands, palaeoecology, biogeography, prehistoric societies.

Summary

The project aims to establish the impact that prehistoric groups with different degree of development have had on the insular ecosystem of the Balearic Islands. One of the main goals of the project will be to ascertain the principal changes that have occurred in the local vegetation through time, including how the introduction of domesticated species has affected the existing flora and how these plants have been cultivated. Another important aspect of the project is to determine when domestic animals were introduced in the islands, to study the development of stockbreeding throughout prehistory (c. 6500-2000 BP) as well as other complementary subsistence means (fishing, hunting and gathering). The project will also focus on the use of non biological resources, their transformation, supply and exchange.

Referència: BXX2000-1463. Ministeri de Ciència i Tecnologia.

Modalitat: P1. Projecte d'investigació bàsica no orientada.

Títol: *Imaginería y retablo en Mallorca (época medieval y moderna). Bases científico-técnicas para su conservación.*

Classificació UNESCO: 550602-2301.

Centre: Departament de Ciències Històriques y Teoria de les Arts. Edifici Ramon Llull.

Investigador principal: GAMBÚS SAIZ, Mercè.

Categoria: TU (àrea de coneixement: Història de l'Art).

Inici: 2000.

Fi: 2003.

Membres de l'equip	Categoria	Dedicació
Gambús Saiz, Mercè	TU	Única
Genestar Julià, Catalina	TU	Única
Palou Franco, Josefina	TU	Única
Sabater Rebassa, Sebastiana	TEU	Única
Sastre Moll, Jaume		Compartida
Reig Morro, Antònia		Compartida

Nombre total d'investigadors de la UIB: 4.

Keywords: Itarpiece, sculpture, painting, polychromy, pigment/binding media determination, FTIR, SEM, TG, DTA conservation/restoration, catalogue/finger-prints of works of art.

Summary

The proposed research project establishes a line of continuity with a project which is actually being carried out in the scientific-technical study of alterpieces in Majorca during modern times, in this case incorporating statues is a specific object of study and extending the chronology to medieval times.

The main aim of this project is, with an interdisciplinary approach, to draw up scientific-technical bases for the conservation of alterpiece and statue heritage in Majorca, which corresponds, to medieval and modern times. With this in mind we propose a scheme based on the conservation and restoration of a series of works by means of dialogue between art historians, archivists, chemists and restorers which would enable us to establish a diagnosis before hand and to supervise all the processes related to the protection of the art heritage studied all included at the memory.

Participacions a altres projectes

Referència: PB96-0387 (DGICYT). Programa sectorial de promoció general del coneixement.

Títol: [Intelectuales y cultura política en la Europa sur mediterránea \(siglos XIX-XX\).](#)

Classificació UNESCO: 550402.

Investigador principal: [CASASSAS YMBERT, Jordi.](#)

Centre: Universitat de Barcelona.

Investigadors de la UIB:

SERRA BUSQUETS, Sebastià.

Categoria: TU (àrea de coneixement: Història Contemporània).

Total EJC/setmana: 0,4.

MARIMON RIUTORT, Antoni.

Categoria: TEU int. (àrea de coneixement: Història Contemporània).

Total EJC/setmana: 0,4.

Inici: 1997. **Fi:** 2000.

Referència: PB98-0478 (DGESIC). Programa sectorial de promoció general del coneixement.

Títol: [Poder y fiscalidad en la Cataluña de los siglos XIII y XIV: bases jurídicas, y transfondo político.](#)

Investigador principal: [SÁNCHEZ MARTÍNEZ, Manuel.](#)

Centre: Consell Superior d'Investigacions Científiques. Institució Milà i Fontanals.

Investigador de la UIB: MORELLÓ BAGET, Jordi.

Categoria: Aj. U (àrea de coneixement: Història Medieval).

Total EJC/setmana: 0,4.



DEPARTAMENT DE CIÈNCIES MATEMÀTIQUES I INFORMÀTICA

- Los factores educativos, sanitarios e institucionales que condicionan el descenso de la mortalidad infantil (1860-1931).
BUJOSA HOMAR, Francesc
- Transformación algebraica de estructuras: sistemas de nivel superior, transformación algebraica de hipergrafos y álgebras parciales, y aplicaciones.
ROSSELLÓ LLOMPART, Francesc A.
 - DREAMS: Demostrador de Red ATM Móvil con acceso SDMA.
FEMENIES NADAL, Guillem
 - Propuesta y análisis de las especificaciones de CORBA en tiempo real.
PUIGJANER TREPAT, Ramon
 - Un sistema de modelización, análisis y simulación del cuerpo humano.
PERALES LÓPEZ, Francisco José.
- Modelos para el análisis de imágenes: análisis del movimiento, imágenes en color y aplicaciones médicas.
COLL VICENS, Bartomeu
 - Estudio y desarrollo de un vehículo autónomo submarino.
OLIVER CODINA, Gabriel
- Modelos formales y lógicos en computación biomolecular (MOBIOCO).
ROSSELLÓ LLOMPART, Francesc A.
- Mortalidad infantil y condiciones de vida en las Baleares (1876-1936) (MI).
BUJOSA HOMAR, Francesc
- Funciones de agregación y ecuaciones funcionales. Estudio teórico y aplicaciones a la fusión de información (FAEF).
MAYOR FORTEZA, Gaspar

Referència: PB96-0206 (DGES). Programa sectorial de promoció general del coneixement.

Títol: Los factores educativos, sanitarios e institucionales que condicionan el descenso de la mortalidad infantil (1860-1931).

Classificació UNESCO: 520404.

Centre: Departament de Ciències Matemàtiques i Informàtica. Edifici Anselm Turmeda.

Investigador principal: BUJOSA HOMAR, Francesc.

Categoria: CU (àrea de coneixement: Història de la Ciència).

Inici: 1997. **Fi:** 2000.

Membres de l'equip	Categoria	Dedicació (h/setm.)
Bujosa Homar, Francesc	CU	32
Sureda Garcia, Bernat	CU	16
Fernández Bennàssar, M. Carme	CEU	16
Moll Blanes, Isabel	TU	16
Marín Gelabert, Miquel		40

Nombre total d'investigadors de la UIB: 4.

Total EJC/setmana: 2.

Keywords: demographic transition, health transition, infant and child mortality, education, Mallorca 19th-20 centuries.

Summary

The analysis of Demographic Transition in Spain shows differences in demographic behavior among the Spanish provinces. The Balearic Islands is one of the provinces where the transition seems to be quite early, specially concerned with the decline of infant mortality. The aim of the project is to follow a way of research in order to establish the causes of this decline. Diffusion of medical innovation is one of the factors to be analyzed. Thereafter we are going to consider health conditions, medical knowledge, and education as the most significant features of that historical process. To undertake the project we shall first establish when and how appear medical innovations in the field of hygiene and health, and when and how appear new education institutions (privates and publics). Secondly, we are going to analyze specific infant mortality rates in relation to medical and education institutions. We consider a sample of urban and rural population of Majorca from 1860 to 1931.

Referència: PB96-0191-C02-01 (DGES). Programa sectorial de promoció general del coneixement.

Títol: Transformación algebraica de estructuras: sistemas de nivel superior, transformación algebraica de hipergrafos y álgebras parciales, y aplicaciones.

Classificació UNESCO: 120324.

Centre: Departament de Ciències Matemàtiques i Informàtica. Edifici Anselm Turmeda.

Investigador principal: ROSSELLÓ LLOMPART, Francesc A.

Categoria: CEU (àrea de coneixement: Ciències de la Computació i Intel·ligència Artificial).

Inici: 1997.

Fi: 2000.

Membres de l'equip	Categoria	Dedicació (h/setm.)
Rosselló Llopart, Francesc A.	CEU	32
Monserrat Antich, Miquel	TU	32
Torrens Sastre, Joan	CEU	32
Alberich Martí, Ricard	TEU	32
Llabrés Segura, Mercè	Aj. EU	32

Nombre total d'investigadors de la UIB: 5.

Total EJC/setmana: 4.

Keywords: algebraic transformation, HLR systems, hypergraph rewriting, partial algebras.

Summary

This project is aimed at contributing to the study and application of algebraic transformation (at different levels of abstraction) in the following aspects:

- i) Determining missing HLR conditions for High-Level Replacement Systems, and studying High-Level Replacement Systems in the single-pushout approach.
- ii) Completing on-going work about algebraic transformation of hypergraphs and arbitrary partial algebras.
- iii) Applying results obtained in the previous points to term rewriting, object-oriented specification, and specification of hypertext systems.
- iv) Implementing the new approaches to hypergraph transformation in appropriate software tools.

Referència: TIC98-0263. Programa nacional de tecnologies de la informació i de les comunicacions.

Títol: DREAMS: Demostrador de Red ATM Mòvil con acceso SDMA.

Classificació UNESCO: 332505.

Centre: Departament de Ciències Matemàtiques i Informàtica. Edifici Anselm Turmeda.

Investigador principal: FEMENIES NADAL, Guillem.

Categoria: TU (àrea de coneixement: Enginyeria Telemàtica).

Inici: 1998. **Fi:** 2001.

Membres de l'equip	Categoria	Dedicació (h/setm.)
Femenies Nadal, Guillem	TU	32
Huguet Rotger, Llorenç	CU	16
Ferrer Gomila, Josep Lluís	TEU	16
Furió Caldentey, Ignasi	TEU	32
Carrasco Martorell, Loren	As.	16
Mut Puigserver, Macià	As.	16

Nombre total d'investigadors de la UIB: 6.

Total EJC/setmana: 3,2.

Keywords: WATM, WMAC, WDLC, SDMA, intelligent antennas, security.

Summary

The primary goal of the DREAMS project is to specify and implement a WATM network demonstrator that will provide QoS support for mobile multimedia services, such as e. g. video conferencing, video on demand, etc. The protocol stack of the proposed WATM network will be fully harmonized with that of the standard ATM. The basic idea consists on the integration of physical (PHY) (based on the use of adaptive antenna arrays), media access control (MAC) (based on SDMA), data link control (DLC) and network control sublayers, specific on radio link, in the ATM protocol stack. Mobile terminal migration related functions, such as e. g. handover control and location management, and security management related functions will be handled through mobility/security support extensions in the control and signalling ATM protocols, implemented at the base station and wired network switching systems. Because the project deals with a new technology, the original system specification might have to be modified even during the final implementation phases. Therefore, the demonstrator platform will be designed to be as flexible as possible. The DREAMS demonstrator will contain six subsystems, namely two mobile terminals (TM), two base stations (EB), ATM switch and control station. This architecture allows for the implementation of two radio cells and, therefore, allows for the evaluation of handover protocols. The radio links and, thus, the integration of physical (PHY), media access control (MAC), data link control (DLC) and network control sublayers with the ATM protocol stack, will be simulated using standard DSP (Digital Signal Processor) boards controlled by using either PCs or a workstation.

Referència: TIC98-0483-C03-01. Programa nacional de tecnologies de la informació i de les comunicacions.

Títol: Propuesta y análisis de las especificaciones de CORBA en tiempo real.

Classificació UNESCO: 330408.

Centre: Departament de Ciències Matemàtiques i Informàtica. Edifici Anselm Turmeda.

Investigador principal: PUIGJANER TREPAT, Ramon.

Categoria: CU (àrea de coneixement: Arquitectura i Tecnologia de Computadors).

Inici: 1998. **Fi:** 2001.

Membres de l'equip	Categoria	Dedicació (h/setm.)
Puigjaner Trepato, Ramon	CU	16
Serra Cifre, Bartomeu J.	CU	16
Galmés Obrador, Sebastià	TEU	16
Santamaría Pérez, María Luisa	TEU	16
Garcias Salom, Miquel Àngel	As.	16
Juíz García, Carlos	As.	16
Mañas Florit, Josep	As.	16
Servera Rullan, Guillem	As.	16

Nombre total d'investigadors de la UIB: 7.

Total EJC/setmana: 2,8.

Keywords: performance modelling, simulation, queueing networks, petri nets, fault tolerance, distributed systems, object orientation, client-server systems.

Summary

Distributed systems habitually work in real-time environments mainly soft and sometimes hard. A real time environment has associated characteristics affecting performance as well as fault tolerance. CORBA (Common Object Request Broker Architecture) is the standar proposed by the *Object Management Group* (association in which there is software houses, integrators and users) in order to have a common framework to ease the development of object-oriented client-server systems. However, this standard does not have any help for the designer of object-oriented client-server soft real-time systems (those that most frequently appear in applications). Real-time characteristics include performance and dependability aspects. The goal of this project is to develop a proposal to enhance the CORBA standard with the definition of the quality of service required by the user and with the aspects to be covered to ease the task of the client-server system designers. So, it will be necessary to analyse performance characteristics by means of queuing networks or Petri nets as well as the algorithms to be included in CORBA to manage the tasks of admission control, traffic shapping and policing congestion control. In the dependability domain, it will be necessary to study the dependability and, so the software system reliability maintainability and availability by means of Markov chains and Petri nets. For these analyses and the later algorithms implementation it is very important to have tools allowing shortering computation times. Also, for running these systems it is needed physical elements with an appropriate level of fault tolerance; so it will be necessary to develop techniques allowing the design and the enhancement the fault tolerance aspects of such systems.

Referència: TIC98-0302-C02-01. Programa nacional de tecnologies de la informació i de les comunicacions.

Títol: Un sistema de modelización, análisis y simulación del cuerpo humano.

Classificació UNESCO: 3304.

Centre: Departament de Ciències Matemàtiques i Informàtica. Edifici Anselm Turmeda.

Investigador principal: PERALES LÓPEZ, Francisco José.

Categoria: TEU (àrea de coneixement: Ciències de la Computació i Intel·ligència Artificial).

Inici: 1998.

Fi: 2001.

Membres de l'equip	Categoria	Dedicació (h/setm.)
Perales López, Francisco José	TEU	16
Oliver Codina, Gabriel	TEU	16
Rocha Cárdenas, Jairo	TEU	16
González Hidalgo, Manuel	TEU	16
Mas Pichaco, Antònia	TEU	16
Fontanet Nadal, Gabriel	TEU	16
Mascaró Oliver, Miquel	TEU	16
Ortíz Rodríguez, Alberto	TEU	16
Palmer Rodríguez, Pedro A.	TEU int.	16
Mascaró Portells, Miquel	TEU int.	16
Yañiz Aguado, Carlos	Aj. EU	32
Clar Matheu, Albert	Tèc.	16
Bibiloni Coll, Antoni	TEU	16

Nombre total d'investigadors de la UIB: 13.

Total EJC/setmana: 5,6.

Keywords: digital image processing, human motion, computer animation articulated systems, 3D-matching, stereoscopy, biomechanics, 3D-tracking.

Summary

The project goal is the design of a system that allows modelling, analysis and simulation of human movement by using new techniques that functionally combine digital image processing over image processing sequences, with articulate structure modeling mechanisms, on a computer. This project attempts to be the basis for a modular system where the current and future main techniques can be geared in a common environment to carry out analysis and synthesis. Current analysis for subjects on some domains of application (sportive performance, choreographic or medical analysis, etc) show the need of complementary mechanisms. Manual methods used nowadays are subjective and its reliability depends on the operator. Semi-automatic methods based on optical markers whose information is later processed as stereoscopic images carry additional problems: markers occluded by mobile body parts, and the need to establish a matching between the surface where the markers are, and the articulation whose movement is analysed. In addition, they constrain the application range of the system by interfering with the subject to be evaluated. We proposed for this project the use of a biomechanic model built on a hierarchical and articulated structure. Correlation between each of the structural elements

of the model is established with the analytical features of the stereoscopic images obtained from time synchronised cameras. To allow a wide range of application, subjects are not required to carry optical markers or special clothing, although usual constraints are imposed to the background (static or uniform, constant illumination, etc).

By using several algorithms and techniques for digital processing of image sequences at different scales, we will get a set of analytical objects (points, segments in movement) that combined with the biomechanic constrains will allow us to track, identify and match the parts of the synthetic model with the body poses on the different views.

From the synthetic point of view, the system will allow generation of scenes that have not been previously filmed. This comprises modeling and animation of several parts of the human body, including deformable models and simulation of mechanical systems applied to human body.

The graphical environment description and the programming methodology are defined in such a way that it is possible to interactively generate by high level commands, a sequence of movements either real or synthetic. Besides that, the routines and libraries delivered will be portable and reusable according to an object oriented programming methodology. Thus there is a subsection on development of reusable software using the appropriate tools, at both methodological and implementation levels. Finally, in coordination with the Robotic Group in our departament and with others projects, it is possible to use these results on industrial environments applications with robots and people in movement to guarantee the safe interaction among them.

Referència: TIC99-0266 (CICYT). Programa nacional de tecnologies de la informació i de les comunicacions.

Títol: Modelos para el análisis de imágenes: análisis del movimiento, imágenes en color y aplicaciones médicas.

Classificació UNESCO: 120304.

Centre: Departament de Ciències Matemàtiques i Informàtica. Edifici Anselm Turmeda.

Investigador principal: COLL VICENS, Bartomeu.

Categoria: TU (àrea de conixement: Matemàtica Aplicada).

Inici: 1999. **Fi:** 2002.

Membres de l'equip	Categoria	Dedicació (h/setm.)
Coll Vicens, Bartomeu	TU	32
Prohens Sastre, Rafel	Aj. U	32
Sbert Juan, Catalina	TEU	32
Lisani Roca, Josep L.	Aj. EU	32

Nombre total d'investigadors de la UIB: 4.

Total EJC/setmana: 3,2.

Keywords: informing processing, images, vision, algorithms, movement, compression, medical applications.

Summary

The aims of these project are:

- 1) From the description of the image given by the topographic map and the junctions in T, we try to extend this concept to the image movement, and, on the other hand, to define the topographic map of colour image. The applications will be given to follow the objects in a sequence of images, and, in the colour images, to give a compression model of the image from the structure of the topographic map.
- 2) The reconstruction 3D of the objects of a scene from two or more images taken on the scene. The model we suggest is based on the idea of evolution of curves of surfaces, the active contours. The medical application we pretend is the 3D reconstruction of the veins and blood vessels from two angiographies images.
- 3) To developp the corresponding software of these projects and integrate it in a software platform with a friendly user interface which allows a more generalized use of it.

Referència: MAR99-1062-C03-03. Programa nacional de ciència i tecnologia marines.

Títol: Estudio y desarrollo de un vehículo autónomo submarino.

Classificació UNESCO: 120305.

Centre: Departament de Ciències Matemàtiques i Informàtica. Edifici Anselm Turmeda.

Investigador principal: OLIVER CODINA, Gabriel.

Categoria: TU (àrea de coneixement: Arquitectura i Tecnologia de Computadors).

Inici: 2000. **Fi:** 2001.

Membres de l'equip	Categoria	Dedicació (h/setm.)
Oliver Codina, Gabriel	TU	16
Llamosí Casas, Albert	CU	32
Valverde Garcia, Llorenç	CU	16
Ortíz Rodríguez, Alberto	TEU	16
Proenza Arenas, Julián	TEU	16
González Cid, Yolanda	TEU int.	32

Nombre total d'investigadors de la UIB: 6.

Total EJC/setmana: 3,2.

Summary

The aim of this project is the study and development of an autonomous underwater robot, mainly thought for carrying out programmed tasks in sub-sea environments. The main goal is to deal with local image processing applied to inspection tasks as well as to collect biological samples for research and environment supervision. On the other hand, such an explorer vehicle will operate like a slave of the teleoperated robot already build up by our research team (Garbí project), which is provided by two articulated arms, and able to carry out, from the outside water, a great number of specific tasks. However, its physical link, by means of an umbilical cable, constrains its explorer capabilities. So, the whole system composed by an autonomous explorer vehicle and a teleoperated one (which could work from the supplied information by the first one) can be considered an intelligent master-slave robot system of a great scientifically and technological interest, specially for its high possibilities concerning industrial applications.

Referència: BFM2000-1113-C02-01. Ministeri de Ciència i Tecnologia.

Modalitat: P1. Projecte d'investigació bàsica no orientada.

Títol: Modelos formales y lógicos en computación biomolecular (MOBIOCO).

Classificació UNESCO: 1201, 1203, 1199, 2415.

Centre: Departament de Ciències Matemàtiques i Informàtica. Edifici Anselm Turmeda.

Investigador principal: ROSSELLÓ LLOMPART, Francesc A.

Categoria: CEU (àrea de coneixement: Ciències de la Computació i Intel·ligència Artificial).

Inici: 2000.

Fi: 2003.

Membres de l'equip	Categoria	Dedicació
Roselló Llompart, Francesc A.	CEU	Única
Alberich Martí, Ricard	TEU	Única
Casasnovas Casasnovas, Jaume	CEU	Compartida
Llabrés Segura, Maria de la Mercè	Aj. U	Única
Miró Julià, Josep	TU	Única

Nombre total d'investigadors de la UIB: 5.

Keywords: biomolecular computing, rewriting systems, fuzzy logic, cryptology.

Summary

Biomolecular computing is the computing paradigm where information is encoded in nucleic acid and protein molecules and is processed by means on biochemical operations on these molecules. The goal is to contribute to the following three aspects of biomolecular computing:

- i) The development of formal rewriting models of the nucleic acids' and proteins' non-linear structure.
- ii) The analysis of biomolecular computing processes by means of fuzzy logic and the implementation of different logic and arithmetic gates within this paradigm.
- iii) The use of biomolecular computing in cryptology.

Referència: BSO2000-1413. Ministeri de Ciència i Tecnologia.

Modalitat: P1. Projecte d'investigació bàsica no orientada.

Títol: Mortalidad infantil y condiciones de vida en las Baleares (1876-1936) (MI).

Classificació UNESCO: 520404.

Centre: Departament de Ciències Matemàtiques i Informàtica. Edifici Anselm Turmeda.

Investigador principal: BUJOSA HOMAR, Francesc.

Categoria: CU (àrea de coneixement: Història de la Ciència).

Inici: 2000. **Fi:** 2003.

Membres de l'equip	Categoria	Dedicació
Bujosa Homar, Francesc	CU	Única
Moll Blanes, Isabel	TU	Única
Sureda Garcia, Bernat	CU	Compartida
Fernández Bennàsar, M. Carme	CEU	Compartida

Nombre total d'investigadors de la UIB: 4.

Keywords: infant mortality, health conditions, education, quality of life, economic development.

Summary

This project develops the findings of a previous one (Health, education and culture as factors concerning the decline of infant mortality, Mallorca 1860-1930), by the analysis of the geographical patterns of infant mortality in two different contexts: the city of Palma (and inside the city too) and the rural area of Mallorca. Next, we shall relate those patterns to the forms how medical care is organized, as well as health, education and hygiene services, making a distinction between Palma (and within Palma), and the rest of the Island, as well as between public and private services. One of the aims of the project consist on to test if the supply of public services is more relevant than the economic growth, regarding the infant mortality decline. And also, to see the proportion of population with the capability to enjoy the benefits of these services. We can work with a set of data from the previous project, but it is necessary to enlarge it with more information about the city of Palma. Besides, we are going to get more data on demography, health, education and hygiene questions.

Referència: BFM2000-1114. Ministeri de Ciència i Tecnologia.

Modalitat: P1. Projecte d'investigació bàsica no orientada.

Títol: Funciones de agregación y ecuaciones funcionales. Estudio teórico y aplicaciones a la fusión de información (FAEF).

Classificació UNESCO: 1203.

Centre: Departament de Ciències Matemàtiques i Informàtica. Edifici Anselm Turmeda.

Investigador principal: MAYOR FORTEZA, Gaspar.

Categoria: CU (àrea de coneixement: Ciències de la Computació i Intel·ligència Artificial).

Inici: 2000.

Fi: 2003.

Membres de l'equip	Categoria	Dedicació
Mayor Forteza, Gaspar	CU	Única
Calvo Sánchez, Tomasa	TU	Compartida
Casasnovas Casasnovas, Jaume	CEU	Compartida
Torrens Sastre, Joan	CEU	Única
Monserrat Antich, Miquel	TU	Única
Mas Grimalt, Margarida	TEU	Única
Suñer Llabrés, Jaume	TEU	Única
Martín Pelayo, Javier	Aj. EU	Única

Nombre total d'investigadors de la UIB: 8.

Keywords: aggregation functions, t-norms, uninorms, t-operators, means, multi-dimensional, aggregation functions, discrete measures and integrals, generalized natural numbers and fuzzy numbers, functional equations, functional equations related to idempotency, distribuity and modularity, measures of dispersion, optimization, fusion of information.

Summary

In this project we intent to give a new impulse to the theory and applications of the Aggregation Functions, meaning functions/operators which allow to (functionally) modelize the action of "aggregating" several inputs in order to produce a unique output. In the same way, it will be strengthened the use of technics for solving Functional Equations to obtain solutions to problems derived from the study mentioned above. It is worth to emphasize our interest in finishing the study and characterization of associative aggregation functions (like t-norms, uninorms and t-operators) defined on ordered sets, as well as non-associative ones (like quasi-linear means and weighted ordered means) defined in various domains. In particular, previous studies related to (non-associative) aggregation functions of a multi-dimensional nature are going to be finished, as well as the study of discrete measures which determine (non-associative) aggregation functions with interesting properties through integrals (like Choquet or Sugeno). With regard to applications, it is intended to obtain final results corresponding to the determination of aggregation functions like weighted means with maximum dispersion (entropy) of its weighting list, subjected to restrictions which can be related for example to a degree of optimism ('orness'). In this section, it will be dealt as well with the practical problem of the fusion of imprecise information through the aggregation of fuzzy numbers, in particular of those representing generalized natural numbers.



DEPARTAMENT DE CIÈNCIES DE LA TERRA

- Detección del cambio climático en el archipiélago balear a partir de información instrumental y referencias históricas.
GRIMALT GELABERT, Miquel
- Análisis comparativo entre las unidades básicas de acreción en depósitos carbonatados del cretácico, paleógeno, mioceno y plioceno; arquitectura de facies en función de cambios, producción, sedimento, acomodación.
POMAR GOMÀ, Lluís
- El karst y la morfogénesis litoral en las Islas Baleares y la costa valenciana: su relación con las oscilaciones del nivel marino a lo largo del Cuaternario.
FORNÓS ASTÓ, Joan Josep
- Cambio rural y productivismo. Las repercusiones de la reforma de la PAC de 1992 en las Islas Baleares (POST-CHANGE).
SALVÀ TOMÀS, Pere A.
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LAITA RUIZ DE ASÚA, M. Mercedes
- Disseny i implementació d'una SIG per a la gestió i planificació del transport escolar de Balears.
SEGUÍ PONS, Joana M.
- Evaluación de recursos hídricos y transporte sólido en cuencas forestales mediterráneas con distintos usos del suelo: aproximación regional y experimental.
GARCÍA GARCÍA, Celso

Referència: CLI97-0419 (CICYT). Programa nacional d'I+D sobre el clima.

Títol: [Detección del cambio climático en el archipiélago balear a partir de información instrumental y referencias históricas.](#)

Classificació UNESCO: 2502.

Centre: Departament de Ciències de la Terra. Edifici Guillem Colom Casanovas.

Investigador principal: [GRIMALT GELABERT, Miquel.](#)

Categoria: TU (àrea de coneixement: Geografia Física).

Inici: 1997. **Fi:** 2000.

Membres de l'equip	Categoria	Dedicació (h/setm.)
Grimalt Gelabert, Miquel	TU	16
Laita Ruiz de Asua, M. Mercedes	AEU	16
Ruiz Pérez, Maurici	As.	16

Nombre total d'investigadors de la UIB: 3.

Total EJC/setmana: 1,2.

Keywords: climatic change, rainfall, temperature, Balearic Islands.

Summary

The main purpose of the project is to analyse the climate changes in the Balearic Islands. The study will be performed starting from the date of the first data systematically recorded to nowadays. It will be applied an statistical study to detect the scope of the climate change in a regional scale. The differences between islands will be specially considered. The data analysis proces will include an statistical approach and a recognition of geographical patterns. The results of this analysis will be considered indicators of the climatic changes.

Referència: PB97-0135-C02-01 (DGES). Programa sectorial de promoció general del coneixement.

Títol: Análisis comparativo entre las unidades básicas de acreción en depósitos carbonatados del cretácico, paleógeno, mioceno y plioceno; arquitectura de facies en función de cambios, producción, sedimento, acomodación.

Classificació UNESCO: 2506.

Centre: Departament de Ciències de la Terra. Edifici Guillem Colom Casasnovas.

Investigador principal: POMAR GOMÀ, Lluís.

Categoria: CU (àrea de coneixement: Estratigrafia).

Inici: 1998. **Fi:** 2001.

Membres de l'equip	Categoria	Dedicació (h/setm.)
Pomar Gomà, Lluís	CU	16
Mateos Ruiz, Rosa María	As.	16
Calvet Rovira, Francesc		16

Nombre total d'investigadors de la UIB: 2.

Total EJC/setmana: 0,8.

Keywords: carbonates, platforms, shelves, facies architecture.

Summary

The aim of this project is to establish the relationships between carbonate production, accommodation changes and facies architecture in four examples of carbonate platforms and shelves from the Cretaceous and Paleogene of the southeastern-Pyrenees area, upper Miocene of Menorca (Balearic Islands) and Plio-Pleistocene of Puglia (southern Italy). Carbonate production in these examples was related to different types of biota, clima and geodynamic context.

Referència: PB98-0132 (DGESIC). Programa sectorial de promoció general del coneixement.

Títol: El karst y la morfogénesis litoral en las Islas Baleares y la costa valenciana: su relación con las oscilaciones del nivel marino a lo largo del Cuaternario.

Classificació UNESCO: 250619.

Centre: Departament de Ciències de la Terra. Edifici Guillem Colom Casanovas.

Investigador principal: FORNÓS ASTÓ, Joan Josep.

Categoria: TU (àrea de coneixement: Estratigrafia).

Inici: 1999. **Fi:** 2002.

Membres de l'equip	Categoria	Dedicació (h/setm.)
Fornós Astó, Joan Josep	TU	32
Rodríguez Perea, Antoni	TU	16
Ginés Gracia, Joaquín	As.	16
García García, Celso	TEU	16
Giménez García, Jorge	Aj. U	16
Servera Nicolau, Jaume	TEU	16
Gelabert Ferrer, Bernadí	As.	16
Rosselló Verger, Vicenç M.		24
Segura Beltran, Francesca S.		16
Pardo Pascual, José E.		16

Nombre total d'investigadors de la UIB: 7.

Total EJC/setmana: 3,2.

Keywords: speleochronology, geomorphology, sea-level oscillation, littoral karst, pleistocene, holocene.

Summary

Mallorca and Menorca are islands mainly integrated by limestone lithologies. They represent an adequate scenary for developing pluridisciplinar investigations focused on littoral geomorphology and, more particularly, on coastal karst morphogenesis. Several research programmes have been independently devoted in the past to topics such as the study of paleo sea-level related speleothems or the peculiar 'cala' -type landscape, which is one of the most characteristic features along the coast of the Balearic Islands. Within this framework, it is of interest to carry out an integrated investigation of littoral morphogenetic processes controlled by pleistocenic and holocenic Mediterranean sea oscillations; this would contribute to a better understanding of both the recent sea-level history and the geomorphological evolution of associated phenomena. The main subjects to be approached in the proposed project are as follows:

- Speleo-diving techniques aimed at sampling of the phreatic speleothem alignments that record paleo sea-levels between +0 and -25 m below the current Mediterranean level.
- Isotope dating of the phreatic speleothem samples, in order to determine a eustatic curve that will provide data on negative sea-level stabilizations connected with cold climatic events.
- Correlation of the chronological data obtained on the geomorphological evolution of both littoral endokarst and fluvio-torrential systems which originate the 'cala'-type coast and the infillings associated with them.

- Localization, measurement, and dating of eolianite sets and the study of their karstic evolution in Balearic and Valencian coasts.
- Comparison between coastal morphogenesis on the Balearic Islands and in carbonate littorals of eastern Iberia, and establishment of common and/or differential trends in the tectono-eustatic evolution of both areas.

This research project will be an adequate means of bringing out substantial information on a poorly known topic in the study of the Balearic Quaternary: the lower paleo sea-levels, the chronology of the events, and its implications on the littoral morphogenetics of the islands in question.

Referència: BSO2000-1207. Ministeri de Ciència i Tecnologia.

Modalitat: P1. Projecte d'investigació no orientada.

Títol: Cambio rural y productivismo. Las repercusiones de la reforma de la PAC de 1992 en las Islas Baleares (POST-CHANGE).

Classificació UNESCO: 540402.

Centre: Departament de Ciències de la Terra. Edifici Guillem Colom Casanovas.

Investigador principal: SALVÀ TOMÀS, Pere A.

Categoria: CU (àrea de coneixement: Geografia Humana).

Inici: 2000.

Fi: 2003.

Membres de l'equip	Categoria	Dedicació
Salvà Tomàs, Pere A.	CU	Única
Binimelis Sebastián, Jaume	TEU	Única
Ginard Bujosa, Antoni	TEU	Única
Picornell Bauzà, Climent	TU	Única
Seguí Pons, Joana M.	TU	Única
Ramon Molinas, Jerònia	Tèc.	Compartida
Martínez Reynolds, Maria R.	As.	Compartida

Nombre total d'investigadors de la UIB: 7.

Keywords: ACP, rural change, post-productivism, Balearic Islands.

Summary

They are tried to analyze the repercussions of the CAP in the rural spaces of the Balearic Islands, mainly the consequences of the Reformation McSharry of 1992. The situation of the society and the rural space of the islands will study verifying the diverse mechanisms of adjustment of the agrarian active population before the communitarian norm of the Nineties, which have supposed the take effect of the post-productivistas expositions.

Referència: REN2000-1769-C06-06. Ministeri de Ciència i Tecnologia.

Modalitat: P2. Projecte d'investigació bàsica orientada.

Títol: Análisis de la variabilidad espacial y temporal en la ocurrencia de fenómenos térmicos extremos en las Islas Baleares.

Classificació UNESCO:

Centre: Departament de Ciències de la Terra. Edifici Guillem Colom Casanovas.

Investigador principal: LAITA RUIZ DE ASÚA, M. Mercedes.

Categoria: TEU (àrea de coneixement: Geografia Física).

Inici: 2000.

Fi: 2003.

Membres de l'equip	Categoria	Dedicació
Laita Ruiz de Asúa, M. Mercedes	TEU	Compartida
Grimalt Gelabert, Miquel	TU	Compartida
Rosselló Geli, Joan	As.	Única
Ruiz Pérez, Maurici	Téc.	Compartida
Ramon Molinas, Jerònia	Téc.	Compartida

Nombre total d'investigadors de la UIB:

Keywords: extreme temperature events, heat weaves, cold weaves, freezes, homogenised daily temperatures, gridded data set, spain.

Summary

The aim of this project is to analyse the spatial and temporal variations and trends in the occurrence of extreme thermal events in Spain and to estimate the high-frequency variability of the several spanish regions incorporated in the study. The first step will be the creation of a long-term high-quality and homogenised daily temperature data set (daily maximum and minimum temperatures). The spatial dimension of this work will be established through the combination of individual station records to generate a regional gridded data set. The analyse of temporal changes and trends in the frequency of extreme temperature events in the entire territory and in the different regions will ground on the initial establishment of this events in the entire territory and in the different regions will ground on the initial establishment of this events (heat weaves, cold weaves, number of days exceeding temperature thresholds). Estimations of variations and trends (total and partial) will be performed with several statistical techniques (lineal trends, low-pass filters, change point detection, etc). We will also study the characteristics persistence and intensity of previously established events, both for Spain and sub-regions, to detect different spatial signals in these events. Finally, we will examine its inter-seasonal and inter-annual variability to determine the modes of change that have influenced its temporal pattern.

Ajudes de la Comissió Interdepartamental de Ciència i Tecnologia. Conselleria d'Innovació i Energia. Govern Balear.

Títol: Disseny i implementació d'una SIG per a la gestió i planificació del transport escolar de Balears.

Centre: Departament de Ciències de la Terra. Edifici Guillem Colom Casasnovas.

Investigadora principal: [SEGUÍ PONS, Joana M.](#)

Categoria: TU (àrea de coneixement: Geografia Humana).

Inici: 2000. **Fi:** 2001.

Membres de l'equip	Categoria	Dedicació (h/setm.)
Seguí Pons, Joana M.	TU	16
Ruiz Pérez, Maurici	Tèc.	16
Salvà Tomàs, Pere A.	CU	16
Spadaro, Amedeo	TU int.	16
Ramon Molinas, Jerònia	Tèc.	16
Martínez Reynés, M. Rosa	As.	16
Gutiérrez Puebla, Javier		16

Nombre total d'investigadors de la UIB: 7.

Total EJC/setmana: 2,8.

Keywords: transport models, network modelling, gis development.

Summary

The aim of the project is the development of an informatic program built over a GIS oriented to the planning and management of the transport routes in the Balearic Islands. Firts, a data base will be created with information about educational centers (offer) and real demand (scholar population). Theoretic models of location will be developed in order to obtain the best routes of transport students. Finally the model will be translated to an informatic from and it could be applied to planning the scholar transport routes. Also the transport routes will be analysed and a second application build over a GIS will be developed to imporve its management.

Participacions a altres projectes

Referència: HID97-0397. Programa nacional de recursos hídrics.

Títol: Evaluación de recursos hídricos y transporte sólido en cuencas forestales mediterráneas con distintos usos del suelo: aproximación regional y experimental.

Investigadora principal: SALA SANJAUME, Maria.

Centre: Universitat de Barcelona.

Investigador de la UIB: GARCÍA GARCÍA, Celso.

Categoria: TEU int. (àrea de coneixement: Geografia Física).

Total EJC/setmana: 0,4.

Inici: 1997. **Fi:** 2000.



DEPARTAMENT DE DRET PRIVAT

- Aspectos jurídicos de la seguridad en el comercio electrónico; en particular, estudio de la firma electrónica y las autoridades de certificación.
MARTÍNEZ NADAL, Apol·lònia
- Derecho concursal español. Situación actual y reforma.
ALCOVER GARAU, Guillem
- La reforma de la justicia civil. Incidencia en los procesos de otros órdenes jurisdiccionales. Estudios preparatorios para su aplicación.
TAPIA FERNÁNDEZ, Isabel
- La protección de los consumidores en los contratos de alojamiento turístico (PC CAT).
COCA PAYERAS, Miquel
- La adaptación del derecho de familia propio de las Islas Baleares a la nueva realidad social (ADF IB).
FERRER VANRELL, M. del Pilar
- Turismo y comercio electrónico: el cumplimiento de la legislación turística española y de la CAIB en servidores (webs) turísticos.
CAVANILLAS MÚGICA, Santiago
- La protección del turista como consumidor.
TORRES LANA, José A.

Referència: PB98-0169 (DGESIC). Programa sectorial de promoció general del coneixement.

Títol: Aspectos jurídicos de la seguridad en el comercio electrónico; en particular, estudio de la firma electrónica y las autoridades de certificación.

Classificació UNESCO: 5699.

Centre: Departament de Dret Privat. Edifici Anslem Turmeda.

Investigadora principal: MARTÍNEZ NADAL, Apol·lònia.

Categoria: TU (àrea de coneixement: Dret Mercantil).

Inici: 1999. **Fi:** 2002.

Membres de l'equip	Categoria	Dedicació (h/setm.)
Martínez Nadal, Apol·lònia	TU	16
Alcover Garau, Guillem	CU	16
Huguet Rotger, Llorenç	CU	16
Ferrer Gomila, Josep Lluís	TEU	16
Blas Guasp, Javier	As.	16

Nombre total d'investigadors de la UIB: 5.

Total EJC/setmana: 2.

Keywords: electronic commerce, electronic signature, certification authorities, certificates.

Summary

Study of security in electronic commerce because of the problems of authentication, integrity, confidentiality and reputation in electronic communications developed through open and insecure channels. Electronic signature in general, and digital signature in particular, as instrument of security. Necessity of certificates and certification authorities as complement of electronic signature in order to obtain a secure electronic commerce; objective aspects: the cycle of life of certificates; subjective aspects: certification entity, subscriber and relying party. Study of juridic and technical aspects about these new concepts.

Referència: PB97-0139-C02-01 (DGES). Programa sectorial de promoció general del coneixement.

Títol: Derecho concursal español. Situación actual y reforma.

Classificació UNESCO: 5605.

Centre: Departament de Dret Privat. Edifici Anselm Turmeda.

Investigador principal: [ALCOVER GARAU, Guillem](#).

Categoria: CU (àrea de coneixement: Dret Mercantil).

Inici: 1998. **Fi:** 2001.

Membres de l'equip	Categoria	Dedicació (h/setm.)
Alcover Garau, Guillem	CU	16
Alonso Espinosa, Francisco		16
Martínez Nadal, Apol·lònia	TU	16
Oliver Barceló, Santiago	As.	16
Farias Batlle, Mercedes		16
Sánchez Ruiz, Mercedes		16
Grimaldos García, Isabel		32
Martínez Cañellas, Anselm M.	Aj. EU	32

Nombre total d'investigadors de la UIB: 4.

Total EJC/setmana: 2.

Referència: PB98-1468-C02-02 (DGESIC). Programa sectorial de promoció general del coneixement.

Títol: La reforma de la justicia civil. Incidencia en los procesos de otros órdenes jurisdiccionales. Estudios preparatorios para su aplicación.

Classificació UNESCO: 520402.

Centre: Departament de Dret Privat. Edifici Anselm Turmeda.

Investigadora principal: [TAPIA FERNÁNDEZ, Isabel](#).

Categoria: CU (àrea de coneixement: Dret Processal).

Inici: 1999. **Fi:** 2002.

Membres de l'equip	Categoria	Dedicació (h/setm.)
Tapia Fernández, Isabel	CU	32
López Simó, Francisco	TU	16
Nadal Gómez, Irene	Aj. EU	16

Nombre total d'investigadors de la UIB: 3.

Total EJC/setmana: 1,6.

Referència: BJU2000-0280. Ministeri de Ciència i Tecnologia.

Modalitat: P1. Projecte d'investigació bàsica no orientada.

Títol: La protección de los consumidores en los contratos de alojamiento turístico (PC CAT).

Classificació UNESCO: 560502.

Centre: Departament de Dret Privat. Edifici Anselm Turmeda.

Investigador principal: COCA PAYERAS, Miquel.

Categoria: CU (àrea de coneixement: Dret Civil).

Inici: 2000. **Fi:** 2003.

Membres de l'equip	Categoria	Dedicació
Coca Payeras, Miquel	CU	Única
Munar Bernat, Pedro A.	TU	Única
Llodrà Grimalt, Francesca	Aj. EU	Compartida
Verdera Izquierdo, Beatriz	Aj. EU	Compartida

Nombre total d'investigadors de la UIB: 4.

Keywords: protection of the consumers, turistic accommodation, tourist as a consumer.

Summary

The project aims to study some of the most legal aspects to protect the consumers in the turistic accommodation contracts. The first field of research analyse the protection system of the spanish normative. The second field of research refers to the European Community normative and to try to harmonize the contract of this sector. Finally, the third aspect that is going to be developed is a concret study of the last legal spanish normative (Act 42/1998, of 15 december, about time-sharing and Act 7/1998, of 13 April, of contract terms and others acts that will be promulgate, RD 515/1989, of information in the contract of letting.

Referència: BJU2000-0974. Ministeri de Ciència i Tecnologia.

Modalitat: P1. Projecte d'investigació bàsica no orientada.

Títol: La adaptación del derecho de familia propio de las Islas Baleares a la nueva realidad social (ADF IB).

Classificació UNESCO: 560502.

Centre: Departament de Dret Privat. Edifici Anselm Turmeda.

Investigador principal: FERRER VANRELL, M. del Pilar.

Categoria: TU (àrea de coneixement: Dret Civil).

Inici: 2000. **Fi:** 2003.

Membres de l'equip	Categoria	Dedicació
Ferrer Vanrell, M. del Pilar	TU	Única
Vila Ribas, M. del Carme	TU	Compartida
Llodrà Grimalt, Francesca	Aj. EU	Compartida
Verdera Izquierdo, Beatriz	Aj. EU	Compartida

Nombre total d'investigadors de la UIB: 4.

Keywords: economic matrimonial rules, living more uxorio, single family.

Summary

This project deals with the analysis of the regulation of the family law and it has the objective of studying the adaptation of the family law of the Balearic Islands to the new reality in this issues. In this project we begin the study of the sentence of the "Tribunal Superior de Justicia de las Islas Baleares", of the 3th September of 1998, where the Court studies the article 1320 of the Spanish Civil Code.

Projecte d'investigació en tecnologies de la informació i comunicacions, medi ambient, educació i foment (Conselleria d'Educació, Cultura i Esports del Govern Balear).

Títol: Turismo y comercio electrónico: el cumplimiento de la legislación turística española y de la CAIB en servidores (webs) turísticos.

Centre: Departament de Dret Privat. Edifici Anselm Turmeda.

Classificació UNESCO: 560206.

Investigador principal: CAVANILLAS MÚGICA, Santiago.

Categoria: CU (àrea de coneixement: Dret Civil).

Inici: 1999. **Fi:** 2000.

Membres de l'equip	Categoria	Dedicació (h/setm.)
Cavanillas Múgica, Santiago	CU	16
Tur Faúndez, M. Nélica	TU	16
Paniza Fullana, Antònia	Aj. EU	16
Garcia Canals, Núria		20
Payeras Capellà, M. Magdalena		16

Nombre total d'investigadors de la UIB: 3.

Total EJC/setmana: 1,2.

Summary

The objectives of the projecte are:

- 1- Identification of duties caused by the sectorial legislation about tourism, which have to be complied by the touristic webs.
- 2- Proposition of legal and technical measures with which fulfilment of this duties turns out easier.
- 3- Elaboration of a practical solutions guide.

Ajudes a projectes d'investigació del Centre d'Investigació i Tecnologies Turístiques de les Illes Balears (CITTIB)

Títol: La protección del turista como consumidor.

Centre: Departament de Dret Privat. Edifici Anselm Turmeda.

Investigador principal: TORRES LANA, José A.

Categoria: CU (àrea de coneixement: Dret Civil).

Inici: 2000. **Fi:** 2002.

Membres de l'equip	Categoria	Dedicació (h/setm.)
Torres Lana, José A.	CU	24
Blasco Esteve, Avel·lí	CU	8
Huesa Vinaixa, Rosario	CU	8
Tur Faúndez, Maria N.	TU	24
Socias Camacho, Joana M.	Aj. U	8
Janer Torrens, Joan D.	Aj. U	8

Nombre total d'investigadors de la UIB: 6.

Total EJC/setmana: 2.

Summary

The project tries to design what is the legal and judicial system of tourist protection as a consumers in European ground, from three different territorial levels and two institutional basis. Those three levles are those of EU legal system, the spanish one and the concerning to autononomical communities. This institutional basis deal about the analysis of the several Acts on the topic, and the study of judicial decissions and sentences on the matter.



DEPARTAMENT DE DRET PÚBLIC

- Propiedad intelectual, propiedad industrial y nuevas tecnologías en el ámbito jurídico penal.
QUINTERO OLIVARES, Gonzalo
- Los retos de la Unión Europea ante la ampliación hacia la Europa central y oriental.
FERNÁNDEZ TOMÁS, Antonio
- Los intereses de España y los desarrollos recientes y pendientes en el derecho internacional del mar.
CASADO RAIGON, Rafel

Referència: PB98-0165-C02-01 (DGESIC). Programa sectorial de promoció general del coneixement.

Títol: Propiedad intelectual, propiedad industrial y nuevas tecnologías en el ámbito jurídico penal.

Classificació UNESCO: 5699.

Centre: Departament de Dret Públic. Edifici Ansem Turmeda.

Investigadora principal: QUINTERO OLIVARES, Gonzalo.

Categoria: CU (àrea de coneixement: Dret Penal).

Inici: 1999. **Fi:** 2002.

Membres de l'equip	Categoria	Dedicació (h/setm.)
Quintero Olivares, Gonzalo	CU	32
Garcia Solé, Marc		32

Nombre total d'investigadors de la UIB: 1.

Total EJC/setmana: 0,8.

Keywords: intellectual property, industrial property, new technologies, penal project leader.

Summary

Our research project is aimed at studying the limits to the criminal and civil action upon the intellectual and industrial property rights exploited by telematic means and specially over the Internet. In order to do so, we need first to focus on the means through which this exploitation is conducted, which presents in itself several juridical problems due to a generalized *anomia* and the usage developed by web-operators. This study also includes the structure of the service providers as well as their responsibility regime. Once this first step is concluded, we will study the different domestic laws on the protection of industrial and intellectual property as well as on the protection of data and intimacy. Afterwards, we will focus on the several infringing conducts developed and the civil and criminal responsibility regimes applicable to them.

Participacions a altres projectes

Referència: PB97-0428 (DGES). Programa sectorial de promoció general del coneixement.

Títol: Los retos de la Unión Europea ante la ampliación hacia la Europa central y oriental.

Investigador principal: FERNÁNDEZ TOMÁS, Antonio.

Centre: Universidad de Castilla-La Mancha.

Investigadora de la UIB: HUESA VINAIXA, Rosario.

Categoria: CU (àrea de coneixement: Dret Internacional Públic i Relacions Internacionals).

Total EJC/setmana: 0,4.

Inici: 1998. **Fi:** 2000.

Referència: PB98-1027 (DGES). Programa sectorial de promoció general del coneixement.

Títol: Los intereses de España y los desarrollos recientes y pendientes en el derecho internacional del mar.

Investigador principal: CASADO RAIGON, Rafel.

Centre: Universidad de Córdoba.

Investigadora de la UIB: HUESA VINAIXA, Rosario.

Categoria: CU (àrea de coneixement: Dret Internacional Públic i Relacions Internacionals).

Total EJC/setmana: 0,4.

Inici: 1999. **Fi:** 2002.



DEPARTAMENT D'ECONOMIA I EMPRESA

- El gobierno de la empresa. Implicaciones para la competitividad de la empresa española.
LOZANO ARNICA, Gonzalo
- La estimación del valor económico de los atributos ambientales a partir del mercado inmobiliario para la correcta definición de indicadores de sostenibilidad de una área turística.
AGUILÓ PÉREZ, Eugeni
- Estructura contractual i qualitat de gestió mediambiental. Implicacions per a la competitivitat de la indústria hotelera balear.
CRESPÍ CLADERA, Rafel
- Aplicació dels sistemes de gestió i de comptabilitat medi ambientals al sector turístic.
SOCIAS SALVÀ, Antoni
- Estimació de la demanda dels atributs ambientals que sustenten les activitats turístiques d'allotjament.
AGUILÓ PÉREZ, Eugeni
- Models de creixement sostenible i problemes de transició a l'economia de les Illes Balears.
REY-MAQUIEIRA PALMER, Javier
- Diseño de un instrumento para la asignación de presupuestos de farmacia a los equipos de atención primaria del territorio gestionado por INSALUD.
FUSTER CULEBRAS, Julio
- Análisis económico y política pública: Fundamentos, diseños y evaluación.
LÓPEZ GARCÍA, Miguel Angel.

Referència: PB97-0185-C03-03. Programa sectorial de promoció general del coneixement.

Títol: El gobierno de la empresa. Implicaciones para la competitividad de la empresa española.

Centre: Departament d'Economia i Empresa. Edifici Mateu Orfila i Rotger.

Investigador principal: LOZANO ARNICA, Gonzalo.

Categoria: TU (àrea de coneixement: Economia Financera i Comptabilitat).

Inici: 1998. **Fi:** 2001.

Membres de l'equip	Categoria	Dedicació (h/setm.)
Lozano Arnica, Gonzalo	TU	32
Rivas Yarza, Pedro	TEU	32
Alemany Hormaeche, Margalida	TEU	32
Calveras Maristany, Aleix	TEU int.	32
Crespí Cladera, Rafel	TU	
Solà Belda, Carles	TEU int.	

Nombre total d'investigadors de la UIB: 6.

Total EJC/setmana: 3,2.

Summary

To identify the determinant of the competitiveness of the enterprises is a difficult task, besides other reasons because of the strong interrelations among them. The structure of ownership and the governance organisation, the role of the capital markets, the investment in intangible capital are aspects which have been insufficiently studied in the Spanish case. The proposed project has an objective the improvement of its knowledge. In that sense, it has a theoretical component to build a frame of reference - and an empirical one, to amass data and information following a more accurate diagnose.

Referència: SEC99-0267 (CICYT). Pla nacional d'estudis socials i econòmics.

Títol: La estimación del valor económico de los atributos ambientales a partir del mercado inmobiliario para la correcta definición de indicadores de sostenibilidad de una área turística.

Classificació UNESCO: 5307.

Centre: Departament d'Economia i Empresa. Edifici Mateu Orfila i Rotger.

Investigador principal: AGUILÓ PÉREZ, Eugeni.

Categoria: CU (àrea de coneixement: Economia Aplicada).

Inici: 1999. **Fi:** 2001.

Membres de l'equip	Categoria	Dedicació (h/setm.)
Aguiló Pérez, Eugeni	CU	32
Juaneda Sampol, Catalina N.	CU	16
Socias Salvà, Antoni	CU	16
Riera Font, Antoni	TU	32
Aguiló Segura, Paula M.	TEU	32
Llull Gilet, Antoni	TEU	32

Nombre total d'investigadors de la UIB: 6.

Total EJC/setmana: 4.

Keywords: environmental valuation, hedonic prices, sustainable index.

Summary

The hedonic hypothesis tells us that goods are valued for their utility-bearing attributes or characteristics. From this hypothesis we can accept that the choice of a house depend on structural characteristics of the house, characteristics of the neighbourhood and the location-specific environmental amenities. Therefore, it would be correct to use metodologic instruments to the development of aspects of overall planning (territorial, urban and environmental) with the hedonic prices valuation technique. Then we will be able to value the significance of the environmental attributes, to specify the demand of these attributes to be able to value individual welfare changes when these environmental characteristics change and to rationalise the public policies and private strategies design with the help of sustainable index. To show the applicability of this methodology we will make a study of a tourist area of the Balearic Islands of residential tourism.

Ajudes a projectes d'investigació del Centre d'Investigació i Tecnologies Turístiques de les Illes Balears (CITTIB)

Títol: Estructura contractual i qualitat de gestió mediambiental. Implicacions per a la competitivitat de la indústria hotelera balear.

Centre: Departament d'Economia i Empresa. Edifici Mateu Orfila i Rotger.

Investigador principal: CRESPI CLADERA, Rafel.

Categoria: TU (àrea de coneixement: Economia Financera i Comptabilitat).

Inici: 2000. **Fi:** 2002.

Membres de l'equip	Categoria	Dedicació (h/setm.)
Crespí Cladera, Rafel	TU	32
Rivas Yarza, Pedro	TEU	32
Calveras Maristany, Aleix	TEU int.	32
Solà Belda, Carles	Aj. EU	32
Orfila Sintés, Francina M.	Aj. EU	32

Nombre total d'investigadors de la UIB: 5.

Total EJC/setmana: 4.

Keywords: quality management, ownership structure, environmental sustainability.

Summary

The present research project (which enjoys partial financing through DGES projects) proposes to undertake a detailed analysis of two complementary issues of great importance for the Balearic hotel (and tourist) industry. The project will analyze, from an empirical and theoretical perspective, the ownership structure and, more specifically, the contractual form and structure existing in the Balearic hotel industry. We propose to start doing an empirical analysis of the ownership structures and its contractual forms. To do so we pretend to use the infrastructure and resources (data, contacts,...) of CITTIB, doing also a detailed analysis of these contractual forms (including existing contract clauses) in the Balearic hotel industry. Next, we will undertake a theoretical analysis identifying the determinants (economic, legal,...) of the contractual structures, and its implications, both for hotel management and for the design of regulation and promotion of the Balearic hotel sector. The second research issue of this project lies within this context of analysis of hotel management and design of regulation: the study of environmental management systems (SGM). A crucial factor in the development and competitiveness in the medium and long term of the tourist industry (and the hotel sector) lies in the consideration by industry managers of environmental aspects, and SGM are part of it. Thus, the project aims at studying (from the double theoretical and empirical perspective) in line with Govern Balear projects such as ECOTOUR, the application of SGM undertaken until today by the Balearic hotel (and tourist) industry. This analysis includes considering the incentives (via product differentiation or cost reduction) which have hotel managers to undertake this application. This will allow providing specific policy recommendations with the goal of promoting an internalization by hotel managers of environmental issues. Both objectives are related to the extent that the design of competitive strategies based in the implementation of SGM are conditioned to the contractual form which relates ownership and management.

Títol: Aplicació dels sistemes de gestió i de comptabilitat medi ambientals al sector turístic.

Centre: Departament d'Economia i Empresa. Edifici Mateu Orfila i Rotger.

Investigador principal: SOCIAS SALVÀ, Antoni.

Categoria: CU (àrea de coneixement: Economia Financera i Comptabilitat).

Inici: 2000. **Fi:** 2002.

Membres de l'equip	Categoria	Dedicació (h/setm.)
Socias Salvà, Antoni	CU	32
Llull Gilet, Antoni	TEU	32
Perelló Julià, Miquel	Aj. EU	32
Aleñar Rebassa, Margalida	Aj. EU	32
Horrach Rosselló, Patrícia	Aj. EU	32
Larrinaga González, Carlos		32

Nombre total d'investigadors de la UIB: 6.

Total EJC/setmana: 4.

Keywords: environmental accounting, environmental management, tourism, sustainability.

Summary

The economy of the Balearic Islands depends in a fundamental way on the tourist trade. The protection of the environment and the achievement of a model of sustainable growth constitute real survival challenges for the tourist industry, as the quality of the environment of a tourist destination is a key factor in choosing among competing holiday destinations. This project intends to diagnose what the situation of our tourist enterprises is -in terms of facts and attitudes- with regards to environmental management, the incorporation of environmental variables into their accounting systems and their release of relevant information to the public.

The main aims of the project are:

- to find out about our tourist enterprises perceptions with respect to their relationship with the environment and the position they adopt as organisations;
- to research their attitudes with regards to the implementation of environment management procedures and the release of relevant accounting information, as well as to assess the degree of their actual implementation;
- to analyse the environmental content of the external information made public by the enterprises;
- to apply the case study method to a concrete tourist municipality as a means to allow the study of environmental problems that go beyond the microeconomic level.

The study will enable us to detect the advantages and disadvantages taken into account by the enterprises, their resistance to change and the main difficulties. We will conclude with a realistic proposal that contributes to improve the implementation of standard systems of environmental management and accounting, with special reference to the European Union's EMAS System and the Decree of the Government of the Balearics which applies it to the tourist industry.

Títol: Estimació de la demanda dels atributs ambientals que sustenten les activitats turístiques d'allotjament.

Centre: Departament d'Economia i Empresa. Edifici Mateu Orfila i Rotger.

Investigador principal: AGUILÓ PÉREZ, Eugeni.

Categoria: CU (àrea de coneixement: Economia Aplicada).

Inici: 2000. **Fi:** 2002.

Membres de l'equip	Categoria	Dedicació (h/setm.)
Aguiló Pérez, Eugeni	CU	16
Riera Font, Antoni	TU	16
Aguiló Segura, Paula M.	TEU	32
Monfar Palou, Carles	TEU	32
Alcover Casasnovas, Antoni	TEU int.	32

Nombre total d'investigadors de la UIB: 5.

Total EJC/setmana: 3,2.

Keywords: environmental valuation, hedonic prices.

Summary

The hedonic hypothesis tells us that goods and services are valued for their utility bearing attributes or characteristics. From this hypothesis we can accept that the choice of an individual depend on structural characteristics of the services and on the quality of the environment which they take place. Therefore, it would be correct to use the hedonic prices valuation technique to approach us to the economic valuation that tourists suggest for the environmental attributes, which are relevant for the tourist activities of lodging. Then we will be able to value the significance of the environmental attributes in the choice of lodging establishments (hotel, apartment,...) to specify the demand of these attributes and to rationalise the public policies and private strategies in the tourists lodging sector. To show the applicability of this methodology we will make a study of a tourist area of the Balearic Islands.

Títol: Models de creixement sostenible i problemes de transició a l'economia de les Illes Balears.

Centre: Departament d'Economia i Empresa. Edifici Mateu Orfila i Rotger.

Investigador principal: REY-MAQUIEIRA PALMER, Javier.

Categoria: TU (àrea de coneixement: Economia Aplicada).

Inici: 2000. **Fi:** 2002.

Membres de l'equip	Categoria	Dedicació (h/setm.)
Rey-Maqueira Palmer, Javier	TU	32
Lozano Ibáñez, Francisco J.	TEU	32
Matas Mir, Antoni	TEU int.	32
Spadaro, Amedeo	TU int.	32
Ramos Mir, Vicente	Aj. EU	32

Nombre total d'investigadors de la UIB: 5.

Total EJC/setmana: 4.

Summary

Our research project aims to clarify and give analytical soundness to the current debate over the proper tourist development strategy for the Balearic Islands. We believe that this aim requires, as a first step, to analyse the sustainability of different tourist development strategies from a long-run perspective. In order to do this, we should consider the close dependence of the tourist sector on competitiveness factors other than the price, specially its dependence on the environmental quality. Our aim would demand several targets. Firstly, the concept of sustainability should be clarity. Thirdly, the previous findings ought to be used in order to evaluate different public intervention alternatives aimed at sustainability. As a second step, our purpose is to shed light on the possible transition and readjustment costs of a change in the tourist development strategy. We would focus on the short-run effects on the labour market coming from changes in the size and composition of the tourist offer, such us changes in wages and unemployment, mismatch between labour smills and labour demand and so on.

Participacions a altres projectes

Referència: FIS99-0544. Fons d'Investigació Sanitària.

Títol: Diseño de un instrumento para la asignación de presupuestos de farmacia a los equipos de atención primaria del territorio gestionado por INSALUD.

Investigador principal: FUSTER CULEBRAS, Julio.

Centre: Gerència d'Atenció Primària de Mallorca-Departament d'Economia i Empresa.

Investigadores de la UIB:

JUANEDA SAMPOL, Catalina N.

Categoria: CU (àrea de coneixement: Economia Aplicada).

Total EJC/setmana: 0,3.

CLADERA MUNAR, Magdalena.

Categoria: Aj. EU (àrea de coneixement: Economia Aplicada).

Total EJC/setmana: 0,5.

Inici: 1999. **Fi:** 2000.

Referència: PB98-0866 (DGESIC). Programa sectorial de promoció general del coneixement.

Títol: Análisis económico y política pública: Fundamentos, diseños y evaluación.

Investigador principal: LÓPEZ GARCÍA, Miguel Angel.

Centre: Universitat Autònoma de Barcelona.

Investigador de la UIB: SPADARO, Amedeo.

Categoria: TU int. (àrea de coneixement: Economia Aplicada).

Total EJC/setmana: 0,4.



DEPARTAMENT DE FILOLOGIA CATALANA I LINGÜÍSTICA GENERAL

- Edición del Llibre de Déu, de Ramon Llull (ELDRL).
ROSSELLÓ BOVER, Pere
- Antologia de textos de les Illes Balears.
MIRALLES MONSERRAT, Joan
- Arxiu audiovisual de dialectes catalans de les Illes Balears.
CORBERA POU, Jaume
- Atlas ornitoniímic.
MIRALLES MONSERRAT, Joan
- Buidatge dels mots usuals de les Illes Balears del DCVB.
MIRALLES MONSERRAT, Joan
- Desenvolupament d'un sistema fonològic en infants catalanoparlants.
DOLS SALAS, Nicolau
- Diccionari de cultura material de les Illes Balears.
ALOMAR CANYELLES, Antoni I.
- Diccionari de locucions, modismes, refranys a l'Aplec de Rondalles Mallorquines.
GRIMALT GOMILA, Josep A.
- Nomenclàtor toponímic de les Illes Balears.
MIRALLES MONSERRAT, Joan
- Glosari de definicions lul·lianes.
ROSSELLÓ BOVER, Pere
- Recursos lingüístics en textos científics.
MESQUIDA CANTALLOPS, Joan A.

Referència: BFF2000-1268. Ministeri de Ciència i Tecnologia.

Modalitat: P1. Projecte d'investigació bàsica no orientada.

Títol: Edición del Libro de Déu, de Ramon Llull (ELDRL).

Classificació UNESCO: 6202, 7204, 5506.

Centre: Departament de Filologia Catalana i Lingüística General. Edifici Ramon Llull.

Investigador principal: ROSSELLÓ BOVER, Pere.

Categoria: TU (àrea de coneixement: Filologia Catalana).

Inici: 2000. **Fi:** 2003.

Membres de l'equip	Categoria	Dedicació
Rosselló Bover, Pere	TU	Única
Enseñat Pujol, Gabriel	TU	Única
Bonner, Anthony		Compartida
Alomar Canyelles, Antoni I.	As.	Única
Mesquida Cantallops, Joan A.	TEU	Compartida
Amengual Bunyola, Guillem A.	As.	Única

Nombre total d'investigadors de la UIB: 5.

Keywords: lullism, edition of texts.

Summary

Preparation of a critical edition of the *Llibre de Déu*, by Ramon Llull, which consist of three works: *Llibre del és de Déu*, *Llibre de la coneixença de Déu* and *Llibre de Déu*.

Projectes del Programa Mossèn Alcover

Títol del projecte: [Antologia de textos de les Illes Balears.](#)

Investigador responsable: [MIRALLES MONSERRAT, Joan.](#)

Títol del projecte: [Arxiu audiovisual de dialectes catalans de les Illes Balears.](#)

Investigador responsable: [CORBERA POU, Jaume.](#)

Títol del projecte: [Atles ornitoniàmic.](#)

Investigador responsable: [MIRALLES MONSERRAT, Joan.](#)

Títol del projecte: [Buidatge dels mots usuals de les Illes Balears del DCVB.](#)

Investigador responsable: [MIRALLES MONSERRAT, Joan.](#)

Títol del projecte: [Desenvolupament d'un sistema fonològic en infants catalanoparlants.](#)

Investigador responsable: [DOLS SALAS, Nicolau.](#)

Títol del projecte: [Diccionari de cultura material de les Illes Balears.](#)

Investigador responsable: [ALOMAR CANYELLES, Antoni I.](#)

Títol del projecte: [Diccionari de locucions, modismes, refranys a l'Aplec de Rondalles Mallorquines.](#)

Investigador responsable: [GRIMALT GOMILA, Josep A.](#)

Títol del projecte: [Nomenclàtor toponímic de les Illes Balears.](#)

Investigador responsable: [MIRALLES MONSERRAT, Joan.](#)

Títol del projecte: [Glosari de definicions lul·lianes.](#)

Investigador responsable: [ROSSELLÓ BOVER, Pere.](#)

Títol del projecte: [Recursos lingüístics en textos científics.](#)

Investigador responsable: [MESQUIDA CANTALLOPS, Joan A.](#)



DEPARTAMENT DE FILOLOGIA ESPANYOLA, MODERNA I LLATINA

- Estudio y edición crítica de las obras inéditas del maestro Bartolomé Jiménez Patón (1589-1640).
GARAU AMENGUAL, Jaume
- Los libros de emblemas de Francisco Garau (S.J.): investigación intertextual y creación de una aplicación en CD-ROM para su estudio analítico.
BERNAT VISTARINI, Antonio
- Estudio y edición crítica de las obras teatrales inéditas de Diego de Torres Villarroel (Salamanca 1694-1770).
GARAU AMENGUAL, Jaume
- Materialización documental de la interacción de poblaciones en el mundo greco-romano.
Paralelismo con el mundo moderno.
SANTIAGO ÁLVAREZ, Rosa Araceli
- Corpus de poéticas en España (siglos XVIII-XIX-XX). Estudio y edición.
SORIA OLMEDO, Andrés
- Elaboración de un diccionario inglés/español-español/inglés para el área de bioquímica.
VERDAGUER CLAVERA, Isabel
- Biblioteca virtual de textos españoles del Siglo de Oro accesibles vía internet: subproyecto 1:
Edición digital y base de datos de las obras de emblemática traducidas al español.
LÓPEZ POZA, Sagrario

Referència: PB96-0190 (DGES). Programa sectorial de promoció general del coneixement.

Títol: Estudio y edición crítica de las obras inéditas del maestro Bartolomé Jiménez Patón (1589-1640).

Classificació UNESCO: 6202.

Centre: Departament de Filologia Espanyola, Moderna i Llatina. Edifici Ramon Llull.

Investigador principal: GARAU AMENGUAL, Jaume.

Categoria: TU (àrea de coneixement: Filologia Espanyola).

Inici: 1997. **Fi:** 2000.

Membres de l'equip	Categoria	Dedicació (h/setm.)
Garau Amengual, Jaume	TU	32
Monterrubio Prieto, Juan Miguel	TEU	32
Madroñal Durán, Abraham		20

Nombre total d'investigadors de la UIB: 2.

Total EJC/setmana: 1,6.

Keywords: critical edition, publication of unknown works.

Summary

The purpose of this project is to carry out a study, to catalogue and create a critical edition of unstudied and unpublished works of Bartolomé Jiménez Patón (1569-1640). This research stems from the discovery of some manuscript, until now unknown, by various members of this team. Particular texts such as the *Cátedra de erudición*, *El virtuoso discreto*, the sixteenth volume of the *Comentarios de erudición*. An important part of this work is going to constitute in the study of works like the *Perfecto predicador* (Baeza, 1612) and the distinct works that the humanist wrote, till the end of his life, centered on his reflexion over the problems of his time, *Reforma de trajes* (Baeza, 1638), or *Discurso sobre los tufos, copetes y calvas* (Baeza, 1639), among others that are mentioned in this project.

Referència: PB98-0134 (DGESIC). Programa sectorial de promoció general del coneixement.

Títol: Los libros de emblemas de Francisco Garau (S.J.): investigación intertextual y creación de una aplicación en CD-ROM para su estudio analítico.

Classificació UNESCO: 550505.

Centre: Departament de Filologia Espanyola, Moderna i Llatina. Edifici Ramon Llull.

Investigador principal: BERNAT VISTARINI, Antonio.

Categoria: TU (àrea de coneixement: Literatura Espanyola).

Inici: 1999. **Fi:** 2001.

Membres de l'equip	Categoria	Dedicació (h/setm.)
Bernat Vistarini, Antonio	TU	16
Fernández Coca, Antonio	TEU	16

Nombre total d'investigadors de la UIB: 2.

Total EJC/setmana: 0,8.

Keywords: history of literature, emblems, iconography, religion, symbols, data bank, automatic documentation.

Summary

Creation of a textual and iconographic data bank of emblems by Francisco Garau (S.J.). Bibliographic research and textual establishment of the three books by Garau (*El sabio instruido de la naturaleza*, *El Olimpo del sabio instruido*, *Tercera parte del sabio instruido*). Analysis of the sources used by this author and the comparison with other emblem books produced in Spain. Creation of an application for the analytical consulting of this collection of emblems on CD-ROM.

Referència: BFF2000-1068. Ministeri de Ciència i Tecnologia.

Modalitat: P1. Projecte d'investigació bàsica no orientada.

Títol: Estudio y edición crítica de las obras teatrales inéditas de Diego de Torres Villarroel (Salamanca 1694-1770).

Classificació UNESCO: 6202.

Centre: Departament de Filologia Espanyola, Moderna i Llatina. Edifici Ramon Llull.

Investigador principal: GARAU AMENGUAL, Jaume.

Categoria: TU (àrea de coneixement: Literatura Espanyola).

Inici: 2000. **Fi:** 2003.

Membres de l'equip	Categoria	Dedicació
Garau Amengual, Jaume	TU	Única
Madroñal Duran, Abraham	TU int.	Única
Monterrubio Prieto, Juan Miguel	TEU	Única
Servera Baño, Josep	CU	Única

Nombre total d'investigadors de la UIB: 4.

Summary

Keywords: critical edition, Diego de Torres Villarroel, plays.

Summary

The aim of this project is to carry out a study, catalogue and critical edition of the works by Diego Torres de Villarroel (Salamanca 1694-1770), which remain unstudied, unpublished or practically unknown. An important part of this project will consist in the study of this author's short plays including short farces such as *El duende*, or *El médico sordo y el vecino gangoso* and the following one-act farces *El poeta*, *Los gitanos*, *La Peregrina*, *El valentón*, *La tabernera de la puerta de Vilamayor* or *La ronda del uso*, in addition to other works such as *La zarzuela del juicio de Paris*, *El hospital en que Amo se cura*, *Juguetes de Talía* (Salamanca, 1738) and such curious predictions as *La casa del ensayo de las comedias* (Madrid, 1755).

Participacions a altres projectes

Referència: PB97-0173 (DGES). Programa sectorial de promoció general del coneixement.

Títol: [Materialización documental de la interacción de poblaciones en el mundo greco-romano. Paralelismo con el mundo moderno.](#)

Investigadora principal: [SANTIAGO ÁLVAREZ, Rosa Araceli.](#)

Centre: Universitat Autònoma de Barcelona.

Investigadora de la UIB: BOSCH JUAN, M. Carme.

Categoria: TU (àrea de coneixement: Filologia Llatina).

Total EJC/setmana: 0,4.

Inici: 1998. **Fi:** 2001.

Referència: PB98-1274 (DGESIC). Programa sectorial de promoció general del coneixement.

Títol: [Corpus de poéticas en España \(siglos XVIII-XIX-XX\). Estudio y edición.](#)

Investigador principal: [SORIA OLMEDO, Andrés.](#)

Centre: Universidad de Granada.

Investigadors de la UIB:

DÍAZ DE CASTRO, Francisco J.

Categoria: CU (àrea de coneixement: Literatura Espanyola).

Total EJC/setmana: 0,4.

DEL OLMO ITURRIARTE, Almudena.

Categoria: TEU (àrea de coneixement: Literatura Espanyola).

Total EJC/setmana: 0,4.

Inici: 1999. **Fi:** 2002.

Referència: PB97-0887. (DGES). Programa sectorial de promoció general del coneixement.

Títol: [Elaboración de un diccionario inglés/español-español/inglés para el área de bioquímica.](#)

Investigadora principal: [VERDAGUER CLAVERA, Isabel.](#)

Centre: Universitat de Barcelona.

Investigadora de la UIB: JUAN GARAU, Maria.

Categoria: TEU (àrea de coneixement: Filologia Anglesa).

Total EJC/setmana: 0,4.

Inici: 1998. **Fi:** 2001.

Referència: TEL99-0335-C04-01. Programa nacional d'aplicacions i serveis telemàtics.

Títol: [Biblioteca virtual de textos españoles del Siglo de Oro accesibles vía internet: subproyecto 1: Edición digital y base de datos de las obras de emblemática traducidas al español.](#)

Investigadora principal: [LÓPEZ POZA, Sagrario.](#)

Centro: Universidad de la Coruña.

Investigador de la UIB: BERNAT VISTARINI, Antonio.

Categoria: TU (àrea de coneixement: Literatura Espanyola).

Total EJC/setmana: 0,4.

Inici: 1999. **Fi:** 2002.



DEPARTAMENT DE FILOSOFIA

- La justicia y las transformaciones sociales en la crisis del Estado de Bienestar.
RIUTORT SERRA, Bernat
- Estudio interdisciplinar de rasgos funcionales del grado humano. Aspectos sistemáticos.
CELA CONDE, Camilo J.
- La Justicia, las transformaciones sociales y los límites del Estado de Bienestar: políticas públicas, mercado de trabajo, exclusión social y sostenibilidad.
RIUTORT SERRA, Bernat

Referència: PB96-0936-C05-04 (DGES). Programa sectorial de promoció general del coneixement.

Títol: La justicia y las transformaciones sociales en la crisis del Estado de Bienestar.

Classificació UNESCO: 740102.

Centre: Departament de Filosofia. Edifici Ramon Llull.

Investigador principal: RIUTORT SERRA, Bernat.

Categoria: TU (àrea de coneixement: Filosofia Moral).

Inici: 1997. **Fi:** 2000.

Membres de l'equip	Categoria	Dedicació (h/setm.)
Riutort Serra, Bernat	TU	16
Carbonero Gamundí, M. Antònia	TEU int.	16

Nombre total d'investigadors de la UIB: 2.

Total EJC/setmana: 0,8.

Summary

The Welfare State has been questioned in the policies of a number of Western countries since the eighties, particularly in the United States, with Reagan and Bush, and in the United Kingdom, with M. Thatcher. This questioning has had a double presence, one in the practical world of everyday politics, and the other in the theoretical justifications of that view, based mainly on the works by Hayek and Nozick. Both one and the other have been upheld by the crumbling of the Eastern European Communist countries, leading to the view of the so-called "pensamiento único". This work, while reviewing the general outlines of this change, tries to examine the kind of social transformations resulting from that approach, and to relate them to the usual notions of justice which have been put in contrast.

Referència: BSO2000-1116-C04-01. Ministeri de Ciència i Tecnologia.

Modalitat: P1. Projecte d'investigació bàsica no orientada.

Títol del projecte: Estudio interdisciplinar de rasgos funcionales del grado humano. Aspectos sistemáticos.

Classificació UNESCO: 7205, 2416, 6107, 5101.

Centre: Departament de Filosofia. Edifici Ramon Llull.

Investigador principal: CELA CONDE, Camilo J.

Categoria: CU (àrea de coneixement: Filosofia Moral).

Inici: 2000.

Fi: 2003.

Membres de l'equip	Categoria	Dedicació
Cela Conde, Camilo J.	CU	Única
Riutort Serra, Bernat	TU	Compartida
Miquel Novarjra, Alexandre	TU int.	Compartida
Burges Cruz, Lucrecia	Aj. EU	Única
Valdivieso Navarro, Joaquín	Aj. EU	Compartida
Afonso Marrero, José A.	Aj. EU	Única
Ruiz Altaba, Cristian		Compartida
Castro Nogueira, Laureano		Única

Nombre total d'investigadors de la UIB: 8.

Summary

The study of evolution in terms of grades has been proposed as an alternative to cladistics limits existing to interpret ancestor-descendant relationships. However, "grades" are widely grounded on functional assumption, thus being difficult to quantify. The current project tries: Firstly, to stablish an interdisciplinary evolutive scenario of the main functional traits of Homo sapiens (such as, language, aesthetics, and morals. Secondly, to perform experimental studies to obtain stimuli capable of activating brain areas of processing of these tasks. Thirdly, to localize brain areas functionally active during the mentioned tasks, to check the hypothesis of a prefrontal localization of moral judgement, aesthetic appreciation and metaphorical using of language -the development of which would have been responsible for the late hominization period. Fourthly, to built computer simulated models of the evolution of the capacity af analyzing and cultullay transmitting evaluations. Fifthly, to analyse some turning point on the cultural evolution. Finally, to set up a model on the phylogeny of the already mentioned functional traits. How to identify grades and clades in the fossil record was mentioned in the Colloquium "Taxonomy and Systematics of the Human Clade" (Palma, February, 2000) as an area of particular interest of research in face of the V Congress of the IAHP (Barcelona 2003). The participants agreed in organising an International Group of research in human systematics to promote that kind of studies. To reach a tipification of the human grade is important in the systematics and paleontology fields, as well as in psychology, psychiatry, neurology, ethics, ethology, anthropology, biodiversity, and environmental studies.

Referència: SEC2000-1235. Ministeri de Ciència i Tecnologia.

Modalitat: P2. Projecte d'investigació bàsica orientada.

Títol del projecte: La Justicia, las transformaciones sociales y los límites del Estado de Bienestar: políticas públicas, mercado de trabajo, exclusión social y sostenibilidad.

Classificació UNESCO: 6307.

Centre: Departament de Filosofia. Edifici Ramon Llull.

Investigador principal: RIUTORT SERRA, Bernat.

Categoria: TU (àrea de coneixement: Filosofia Moral).

Inici: 2000.

Fi: 2003.

Membres de l'equip	Categoria	Dedicació
Riutort Serra, Bernat	TU	Compartida
Miquel Novajra, Alexandre	TU int.	Compartida
Carbonero Gamundí, Maria A.	TEU	Compartida
Valdivieso Navarro, Joaquim	Aj. EU	Compartida

Nombre total d'investigadors de la UIB: 4.

Keywords: justice, social changes, welfare state, public policies, labour market, social exclusion, globalization, modernization, recondality, sustainable development.

Summary

It tries to continue the research on social changes in developed countries, focused, first, on theoretical general analysis and, second, on application to spanish society as well as balearic context. This analysis approaches on equity perspective. The analysis places on impact produced by globalization and complex modernity on social structure and welfar state. The emphasis is on social changes and citizenship rights. The contrast between factual changes and contra-factual equity assumptions allows to evaluate public policies, labour market and social exclusion from the double view of facticity and validity. This theoretical analysis founds the quantitative and valorative evaluation of such changes in spanish and balearic context.



DEPARTAMENT DE FÍSICA

- Excitación y propagación de ondas magnetohidrodinámicas en la corona solar.
BALLESTER MORTES, Josep Lluís
- Métodos analítico-numéricos en relatividad computacional.
BONA GARCÍA, Carles
- Desarrollo de técnicas avanzadas de verificación para circuitos digitales submicrónicos.
SEGURA FUSTER, Jaume A.
- Sistemas cuánticos de muchos cuerpos: fermiones y bosones.
CASAS AMETLLER, Montserrat
- Caracterización de aleaciones con memoria de forma producidas por solidificación rápida ('melt-spinning').
CESARI ALIBERCH, Eduard
- Herramientas para el desarrollo del test en circuitos integrados mixtos analógicos/digitales.
GARCIA MORENO, Eugeni
- Frecuencia e intensidad de lluvias fuertes en un clima modificado en zona mediterránea española (FIRME).
RAMIS NOGUERA, Climent
- Análisis de los datos del tercer estudio internacional de matemáticas y ciencias (TIMSS) desde la perspectiva del sistema educativo español.
VÁZQUEZ ALONSO, Ángel
- Sismología de la corona solar y actividad solar (SICOAS).
BALLESTER MORTES, Josep L.
- Desarrollo de nuevas aleaciones de memoria de forma con elevadas temperaturas de transformación. Mejora de procesos de obtención y procesado: prototipos industriales (DEMEFOR).
PONS MORRO, Jaume
- Física estadística, fenómenos no lineales y sus aplicaciones.
SAN MIGUEL RUIBAL, Maximino

Referència: PB96-0092 (DGES). Programa sectorial de promoció general del coneixement.

Títol: [Excitación y propagación de ondas magnetohidrodinámicas en la corona solar.](#)

Classificació UNESCO: 2106, 2102.

Centre: Departament de Física. Edifici Mateu Orfila i Rotger

Investigador principal: [BALLESTER MORTES, Josep Lluís.](#)

Categoria: TU (àrea de coneixement: Física de la Terra, Astronomia i Astrofísica).

Inici: 1997. **Fi:** 2000.

Membres de l'equip	Categoria	Dedicació (h/setm.)
Ballester Mortes, Josep Lluís	TU	32
Oliver Herrero, Ramon	TU	32
Arregui Uribe-Etxeberria, Iñigo	B	32

Nombre total d'investigadors de la UIB: 3.

Total EJC/setmana: 2,4.

Keywords: sun, solar corona, prominences, magnetohydrodynamic waves.

Summary

The aim of this project is to improve the knowledge about the excitation and propagation of magnetohydrodynamic waves in solar coronal structures such as prominences, arcades, loops, current sheets, etc. The main goal is to obtain dispersion relations and diagnostic diagrams which would allow to compare easily theoretical predictions with observational results. The study of the oscillations of the physical parameters of the system (velocity, pressure, magnetic field) will help to clarify the physical conditions of such system. On the other hand, the project contains an observational part, to be performed using ground and space based telescopes, which will provide information able to be compared with theoretical results. Besides the information about oscillations present in the system, observational data will inform about the physical properties of the studied structures which will allow to improve the theoretical models and, using such improved models, to obtain a better agreement between observational results and theoretical predictions.

Referència: PB97-0134 (DGES). Programa sectorial de promoció general del coneixement.

Títol: [Métodos analítico-numéricos en relatividad computacional.](#)

Classificació UNESCO: 210105.

Centre: Departament de Física. Edifici Mateu Orfila i Rotger.

Investigador principal: [BONA GARCÍA, Carles.](#)

Categoria: CU (àrea de coneixement: Física Teòrica).

Inici: 1998. **Fi:** 2001.

Membres de l'equip	Categoria	Dedicació (h/setm.)
Bona Garcia, Carles	CU	32
Carot Giner, Jaume Jesús	TU	32
Mas Franch, Lluís	CU	32
Massó Bennàsar, Joan	TU	32
Stela Fiol, Joan	TEU	32

Nombre total d'investigadors de la UIB: 5.

Total EJC/setmana: 4.

Keywords: general relativity, gravitational waves.

Summary

The application of analytical techniques to the study of initial, boundary and gauge conditions in Numerical Relativity is proposed. Using these conditions, the proposal is to build up tridimensional numerical codes to describe compact objects (black holes and/or neutron stars). Using these codes, the proposal is to compute the wave patterns needed to improve, by using the matched filtering technique, the sensibility of the laser interferometer gravitational waves detectors (LIGO, VIRGO) now under construction.

Referència: TIC98-0284. Progama nacional de tecnologies de la informació i de les comunicacions.

Títol: Desarrollo de técnicas avanzadas de verificación para circuitos digitales submicrónicos.

Classificació UNESCO: 3307.

Centre: Departament de Física. Edifici Mateu Orfila i Rotger.

Investigador principal: SEGURA FUSTER, Jaume A.

Categoria: TU (àrea de coneixement: Tecnologia Electrònica).

Inici: 1998. **Fi:** 2001.

Membres de l'equip	Categoria	Dedicació (h/setm.)
Segura Fuster, Jaume A.	TU	16
Garcia Moreno, Eugeni	CU	16
Roca Adrover, Miquel Jesús	TEU	16
Isern Riutort, Eugeni Miquel	TEU	16
De Benito Crossetti, Carol	As.	32
Sainz Gómez, José Antonio		16

Nombre total d'investigadors de la UIB: 5.

Total EJC/setmana: 2,4.

Keywords: defect and fault modeling, integrated circuit testing, microelectronic design, sub-micron integrated circuits.

Summary

The state of the art of the microelectronic technologies has brought the capability of fabricating devices in the sub micron range. One of the characteristics of such as transistors is that they show leakage currents which are much higher than the levels drawn by devices in technologies beyond the micron. These currents may limit the effectivity of test techniques based on monitoring non logical parameters, which have been shown to provide higher coverage in CMOS technologies with respect to logic based methods. The research proposal presented is oriented to extend the capabilities of one of the parametric test techniques most used (IDDQ testing), to submicron circuits. The method consists in to consider both the static and dynamic parts of the current power supply, and use the charge driven into the circuit (the integral of the overall current) as the observable for test. Using the charge as the observable for test provides basically to advantages: it can be applied to circuits with a background leakage current, and may detect defects preventing current. These two main characteristics represent an extension of IDDQ testing because it allows the detection of defects where IDDQ effectivity is poor, and also it can be applied to submicron ICs. The main objectives of the research proposed include a sistematic characterization of the charge driven into non defective circuits to obtain a reference to distinguish between good and bad parts. Next, the effect of several faults on the charge behavior will be investigated, developing the required fault models. Of particular interest is the application of the technique at the circuit level, developing the heuristic required to obtain the input test vectors that sensitize the posible defects into the circuit. Additionally the desing of specific circuitry to sense the charge will be considered. Finally the technique will be applied to commercial circuits to evaluate its practical effectivity.

Referència: PB98-0124 (DGESIC). Programa sectorial de promoció general del coneixement.

Títol: [Sistemas cuánticos de muchos cuerpos: fermiones y bosones.](#)

Classificació UNESCO: 2207.

Centre: Departament de Física. Edifici Mateu Orfila i Rotger.

Investigador principal: [CASAS AMETLLER, Montserrat.](#)

Categoria: CU (àrea de coneixement: Física Atòmica, Molecular i Nuclear).

Inici: 1999. **Fi:** 2002.

Membres de l'equip	Categoria	Dedicació (h/setm.)
Casas Ametller, Montserrat	CU	32
Garcias Gomila, Francesca	TU	32
Serra Crespí, Llorenç	TU	32
Puente Ferrà, Antoni	TU	32

Nombre total d'investigadors de la UIB: 4.

Total EJC/setmana: 3,2.

Keywords: electronic nanostructures, metal clusters, superconductivity, nuclear multifragmentation, halo nuclei and quantum liquids.

Summary

The aim of this project is to analyse several quantal many body systems. In particular we are interested in the following items:

- Electronic nanostructures and clusters of transition metals: ground state and excitations, temporal processes.
- High Tc superconductivity as a Bose-Einstein Condensation (BEC). Determination of critical temperatures.
- Nuclear multifragmentation and halo nuclei. Molecular dynamics and Information theory.
- Large He clusters doped with alkaline and alkaline earth metals. Energy Density functional model.

Referència: PB98-0127 (DGESIC). Programa sectorial de promoció general del coneixement.

Títol: Caracterización de aleaciones con memoria de forma producidas por solidificación rápida ('melt-spinning').

Classificació UNESCO: 331208.

Centre: Departament de Física. Edifici Mateu Orfila i Rotger.

Investigador principal: CESARI ALIBERCH, Eduard.

Categoria: CU (àrea de coneixement: Física Aplicada).

Inici: 1999.

Fi: 2002.

Membres de l'equip	Categoria	Dedicació (h/setm.)
Cesari Aliberch, Eduard	CU	20
Picornell Alou, Catalina	TEU	32
Seguí Palmer, M. Concepció	TU	32
Pons Morro, Jaume	TU	32
Amengual Colom, Antoni	TU	16
Hierro Riu, Ferran	Téc.	16
Font Ferrer, Joan	TU (UPC)	32
Muntasell Pla, Joaquim	TU (UPC)	32
Santamarta Martínez, Rubén	B	40

Nombre total d'investigadors de la UIB: 7.

Total EJC/setmana: 6,3.

Keywords: martensitic transformation, shape memory, rapid solidification, melt-spinning, microstructure.

Summary

The characterization of Cu- and Ni-Ti-based shape memory alloys (SMA) produced by means of rapid solidification (melt-spinning, MS) constitutes the objective of the present project. Finished (or almost finished) products can be obtained by means of the MS technique, although some microstructural features, like small grain size, high vacancy concentration and incomplete atomic order, which influence the martensitic transformation responsible of the particular properties of SMA, are also introduced. The major number of applications, already developed or potential, use the Cu- and Ni-Ti-based systems. A special focus of interest is constituted by the SMA with high transformation temperatures (above 100°C) and good stability at temperatures 200-300°C, which limits the selection to the Cu-Al-Ni (with additions like Mn, B, Ti) and Ni-Ti-X (X=Cu, Hf, Nb). The MS ribbons already produced (in the frame of an european INCO project) show a good macroscopic quality, although its extensive and systematic characterization is needed. The work plan is divided in four topics: (1) Reproducibility and stability of transformation temperatures; (2) Ageing effects; (3) Thermomechanical cycling and (4) Superelasticity and DMA. These topics are closely related with the applications requirements and the results will also give information on processes like ordering, precipitation and defects generation, whose basic interest extends beyond the SMA field.

Referència: TIC99-0277 (DGES). Programa nacional de tecnologies de la informació i de les comunicacions.

Títol: Herramientas para el desarrollo del test en circuitos integrados mixtos analógicos/digitales.

Classificació UNESCO: 330703.

Centre: Departament de Física. Edifici Mateu Orfila i Rotger.

Investigador principal: GARCIA MORENO, Eugeni.

Categoria: CU (àrea de coneixement: Tecnologia Electrònica).

Inici: 1999. **Fi:** 2002.

Membres de l'equip	Categoria	Dedicació (h/setm.)
Garcia Moreno, Eugeni	CU	16
Isern Riutort, Eugeni	TEU	16
Picos Gaya, Rodrigo		32
Roca Adrover, Miquel	TEU	16
Segura Fuster, Jaume	TU	16

Nombre total d'investigadors de la UIB: 4.

Total EJC/setmana: 1.

Keywords: fault modelling and simulation, text mixed A/D circuits, current consumption, sensors, stimuli generation, submicron technologies.

Summary

Testing is a crucial part in the design and production of integrated circuits. Its difficulty grows with the device dimension shrinking, the increase in the circuit complexity and with the coexistence of analog and digital parts in the same chip. In mixed analog/digital (A/D) circuits, testing analog blocks require more time effort, although the area of the analog blocks often smaller. The production of VLSI analog mixed A/D circuits has suffered a tremendous increase in the last years. But testing of the analog blocks is now the bottleneck in its future development. Therefore, test optimisation in mixed A/D circuits is a very active research field nowadays. Test optimisation requires better fault models than existing ones. The proposed work is oriented towards the creation of a realistic fault model dictionary in mixed A/D CMOS circuits, at high abstraction levels. These models will be incorporated in circuit simulators based on SPICE. The goal is to obtain fault simulation tools, easy to use and effective, oriented to test optimisation. These tools could be used by the teams devoted to test development in analog and mixed A/D circuits. The scope of the project includes experimental validation of the fault models developed, designing specific circuits for this task. Also the effectiveness of the input stimuli in revealing faulty circuits will be analysed.

Referència: CLI99-0269. Programa nacional d'I+D sobre el Clima.

Títol: Frecuencia e intensidad de lluvias fuertes en un clima modificado en zona mediterránea española (FIRME).

Classificació UNESCO: 2502.

Centre: Departament de Física. Edifici Mateu Orfila i Rotger.

Investigador principal: RAMIS NOGUERA, Climent.

Categoria: TU (àrea de coneixement: Física de la Terra, Astronomia i Astrofísica).

Inici: 2000. **Fi:** 2002.

Membres de l'equip	Categoria	Dedicació (h/setm.)
Ramis Noguera, Climent	TU	16
Alonso Oroza, Sergio	CU	16
Ruiz Pérez, Mauricio	Tèc.	16
Homar Santaner, Víctor	B	16
García-Moya Zapata, José A.		16

Nombre total d'investigadors de la UIB: 4.

Total EJC/setmana: 1,6.

Keywords: heavy rain, western mediterranean, numerical situation, climate change, downscaling.

Summary

The main aim of the project is the determination of the frequency and intensity of heavy rains in a modified climate scenario (towards the half next century) in the spanish area that, at present, is more frequently affected by these hazardous phenomena, the mediterranean coastal zone. The methodology will use numerical simulations, with the HIRLAM model, of the 165 heavy rain events identified during the decade 1984-93. The model, which will have the same resolution in all the experiments, will be nested in ECMWF analysis data. Different resolution of the ECMWF data will be used to nest the HIRLAM, in order to relate the results obtained using coarse or finer resolution by means of downscaling techniques. Such results will be used to improve the rainfall predicted fields for future potentially hazardous meteorological situations given by a climate model for the decade 2051-60. Such situations can be identified by comparison with those observed during 1984-93 and from a control run of a climatic model. Applications are the knowledge of such hazardous phenomenon in the next future, with the same uncertainty that climate models simulate future atmospheric circulation. Results can be used for future hydrologic purposes and may be of interest for insurance and agriculture.

Referència: Programa CIDE. Ministeri d'Educació i Cultura.

Títol: Análisis de los datos del tercer estudio internacional de matemáticas y ciencias (TIMSS) desde la perspectiva del sistema educativo español.

Centre: Departament de Física. Edifici Mateu Orfila i Rotger.

Investigador principal: VÁZQUEZ ALONSO, Ángel.

Categoria: AS. (àrea de coneixement: Física Aplicada).

Membres de l'equip	Categoria
Vázquez Alonso, Ángel	As.
Bernal Garcias, Fernando	Col.
Barea Roig, Rafel	Tèc.

Summary

The Third International Mathematics and Science Study (TIMSS) is a collaborative research project sponsored by the International Association for the Evaluation of Educational Achievement (IEA). The TIMSS tested and collected information about students from 45 countries in three levels of the educational system. In 1995 Spain participated in the level 2, students enrolled in the two adjacent grades that contain the largest proportion of 13-years old students (7th and 8th school grades). TIMSS measured student achievement in mathematics and science through written tests with multiple-choice, problems and free-response format questions and performance tasks (just for a sub-sample). Moreover TIMSS gathered data (around 1500 variables) related to instructional strategies in science and mathematics, classroom activities, school characteristics, student attitudes and demographic characteristics, through questionnaires completed by students, teachers and school principals. The current project attempts to study and analyse Spain's TIMSS data, which portrays a major picture about the quality of science and mathematics education in our schools.

Referència: BFM2000-1329. Ministeri de Ciència i Tecnologia.

Modalitat: P1. Projecte d'investigació bàsica no orientada.

Títol: Sismología de la corona solar y actividad solar (SICOAS).

Classificació UNESCO: 2106-02.

Centre: Departament de Física. Edifici Mateu Orfila i Rotger.

Investigador principal: BALLESTER MORTES, Josep L.

Categoria: TU (àrea de coneixement: Física de la Terra, Astronomia i Astrofísica).

Inici: 2000. **Fi:** 2003.

Membres de l'equip	Categoria	Dedicació
Ballester Mortes, Josep L.	TU	Única
Oliver Herrero, Ramón	TU	Única
Carbonell Huguet, Marc	CEU	Única

Nombre total d'investigadors de la UIB: 3.

Keywords: magnetohydrodynamics, magnetohydrodynamic waves, solar activity, solar cycle.

Summary

Our proposal is based on a feed-back between theory and observation, our general goals being: (1) to use observational data to improve theoretical models; (2) to use the predictions of these models for subsequent observational campaigns; (3) to use theoretical models to reproduce the behaviour of solar activity in the past and to forecast its future behavior.

Two topics are included in the proposal: on one hand, we plan to study wave propagation within magnetic coronal structures and, on the other hand, to forecast and analyze the behavior of solar activity.

In the first part of the proposal, the specific goals are: (1) to study the effects of magnetic shear in MHD wave propagation in coronal structures such as magnetic arcades and prominences; (2) by considering quiescent solar prominences as slabs of material or composed by fibril structures, to bring a theoretical explanation to the observations of damping and growing of oscillations within them.

In the second part, we plan to study the behavior of solar and geomagnetic activity with the following specific goals: (1) to set up a forecasting method based on genetic algorithms, of the future behavior of the solar cycle and geomagnetic activity, based on genetic algorithms; (2) to analyze, using solar magnetograms obtained by ground-based solar telescopes and the MDI instrument onboard SOHO, the magnetic flux emergence during the recent solar cycles in order to confirm, or not, a hypothesis about the cause of the periodicity near 160 days in high-energy solar flares.

Referència: MAT2000-0862-C03-02. Ministeri de Ciència i Tecnologia.

Modalitat: P3. Projecte d'investigació aplicada.

Títol: Desarrollo de nuevas aleaciones de memoria de forma con elevadas temperaturas de transformación. Mejora de procesos de obtención y procesado: prototipos industriales (DEMEFOR).

Classificació UNESCO: 331507, 331208, 331212, 331614, 221129, 221101.

Centre: Departament de Física. Edifici Mateu Orfila i Rotger.

Investigador principal: PONS MORRO, Jaume.

Categoria: TU (àrea de coneixement: Física Aplicada).

Inici: 2000. **Fi:** 2003.

Membres de l'equip	Categoria	Dedicació
Pons Morro, Jaume	TU	Compartida
Amengual Colom, Antoni	TU	Compartida
Cifre Bauzà, Joan	Tèc.	Compartida

Nombre total d'investigadors de la UIB: 3.

Keywords: shape memory alloys, smart materials, stabilisation, martensite, training, diffusion welding, microstructure, properties, guaranteed behaviour, rapid solidification, melt-spinning.

Summary

The main limitations of the shape memory alloys are the low transformation temperatures with the low stability of these temperatures and the structures involved in shape memory properties. To increase this transformation temperatures, a lot of people are working in complex Cu-Al-Ni-Ti-Mn alloys. The more complex the alloys, the higher the complexity of the degradations of the alloy at high temperatures. The aim of the project is to get shape memory alloys. It is also the scope of the project to get alloys with high stability of the transformation temperatures and phases. Hence the shape memory alloys can be guaranteed for industrial applications once improved the attainment and the processing to get, at the end, prototypes of industrial interest.

Projectes amb l'Institut Mediterrani d'Estudis Avançats (IMEDEA)

Referència: PB94-1167 (DGICYT). Programa sectorial de promoció general del coneixement.

Títol: Física estadística, fenómenos no lineales y sus aplicaciones.

Centre: Departament de Física-IMEDEA. Edifici Mateu Orfila i Rotger.

Investigador principal: SAN MIGUEL RUIBAL, Maximino.

Categoria: CU (àrea de coneixement: Física de la Matèria Condensada).

Inici: 1995. **Fi:** 2000.

Membres de l'equip	Categoria	Dedicació (h/setm.)
San Miguel Ruibal, Maximino	CU	32
Toral Garcés, Raúl	CU	12
Hernández García, Emili	TU	16
Piro, Oreste	TU	20
Colet Rafecas, Pere	TU	16
Balle Monjo, Salvador	TU	12
Caselles Costa, Vicent	TU	12

Nombre total d'investigadors de la UIB: 8.

Total EJC/setmana: 4.

Summary

This proposal follows an ongoing line of research on dynamical properties of nonlinear, nonequilibrium systems as well as on the application of basic knowledge on this field to systems of interest in Photonics technology. It also contemplates an open line of research to address the construction of a Statistical Mechanics of spatio-temporal chaos (weak turbulence). Specific objectives to be addressed include the study of non variational aspects of the CGLE, fluctuations in the convective instability, the study of the vectorial CGLE and parametrically forced systems. Among the open questions in the study of spatio-temporal chaos we address the existence and characterization of transitions among disordered phases, universality classes, quantitative measures of spatio-temporal chaos and the stochastic description of collective behavior at large length scales. Among the applications we propose to solve problems of synchronization of lasers, characterization and control of filamentation in broad area semiconductor lasers and dynamics of polarization of the laser electric field.



DEPARTAMENT DE PSICOLOGIA

- Evaluación de un programa informático para el tratamiento del miedo a volar.
BORNAS AGUSTÍ, F. Xavier
- Análisis de las características psicosociales que diferencian a maltratadores (en los casos de violencia doméstica) de no maltratadores.
BOSCH FIOL, Esperança
- Variables predictoras de la eficacia de un tratamiento de exposición asistida por ordenador en el tratamiento del miedo a volar.
BORNAS AGUSTÍ, F. Xavier
- Análisis del trabajo emocional y su influencia sobre el burnout de los empleados y las evaluaciones de los usuarios.
MANASSERO MAS, M. Antònia
- Estudio interdisciplinar de rasgos funcionales del grado humano. Estudio experimental de los correlatos cerebrales de los rasgos funcionales de conducta moral, capacidad estética y lenguaje metafórico.
MARTY BROQUET, Gisèle
- Estudio de la prevalencia de la hiperactividad en edad escolar (EPHEE).
SERVERA BARCELÓ, Mateu
- Factores cognitivos y aptitudinales con el consumo de alimentos en la población infantil de 10 a 14 años.
PICH SOLÉ, Jordi
- Evaluación de los factores psicosociales y su influencia sobre las mujeres sometidas a tratamientos de infertilidad. Construcción y validación de programas de intervención para la reducción de su impacto en dichas mujeres y en sus parejas.
PÉREZ PAREJA, Francisco J.
- Decisiones legales por jurados: efectos cognitivos y de grupo implicados.
ARCE FERNÁNDEZ, Ramón.
- Implantación de un sistema de calidad en la enseñanza superior basado en el modelo europeo de gestión para la mejora de la calidad.
RODRÍGUEZ MARÍN, Jesús

Referència: PB96-0199 (DGES). Programa sectorial de promoció general del coneixement.

Títol: Evaluación de un programa informático para el tratamiento del miedo a volar.

Classificació UNESCO: 610301.

Centre: Departament de Psicologia. Edifici Guillem Cifre de Colonya.

Investigador principal: BORNAS AGUSTÍ, F. Xavier.

Categoria: TU (àrea de coneixement: Personalitat, Avaluació i Tractament Psicològics).

Inici: 1997. **Fi:** 2000.

Membres de l'equip	Categoria	Dedicació (h/setm.)
Bornas Agustí, F. Xavier	TU	16
García de la Banda García, Gloria	TEU	32
Tortella Feliu, Miquel Rafael	TEU	32
Pérez Pareja, Francisco Javier	TU	16
Martínez-Abascal García, Ángeles	As.	16
Llabrés Bordoy, Jordi	Aj. EU	16

Nombre total d'investigadors de la UIB: 6.

Total EJC/setmana: 3,2.

Keywords: specific phobia, flying fear, software.

Summary

In spite of its prevalence, flying phobia has received much less attention than other anxiety and phobic disorders. The controlled flying treatment studies are few and have focused on "in vivo" and other exposure techniques. These techniques imply economic and practical problems which have had a negative impact on research. According to this, a new computer treatment programme has been developed by our research team. This innovative computer programme has been developed by our research team. This innovative computer programme is able 1) to reproduce fixed and animated images and realistic sounds, 2) to select, according to previous assessment results, a hierarchical stimulus exposure, 3) to control stimulus time exposure related to patient information. This project aims to assess the treatment efficacy of our computer programme and to compare it to other traditional intervention programmes which do not involve exposure.

Referència: PB98-0122 (DGESIC). Programa sectorial de promoció general del coneixement.

Títol: Análisis de las características psicosociales que diferencian a maltratadores (en los casos de violencia doméstica) de no maltratadores.

Classificació UNESCO: 611200.

Centre: Departament de Psicologia. Edifici Guillem Cifre de Colonya.

Investigadora principal: BOSCH FIOL, Esperança.

Categoria: TEU (àrea de coneixement: Psicologia Bàsica).

Inici: 1999. **Fi:** 2001.

Membres de l'equip	Categoria	Dedicació (h/setm.)
Bosch Fiol, Esperança	TEU	32
Ferrer Pérez, Victòria Aurora	TU	16
Manassero Mas, Maria Antònia	TU	16
Gili Planas, Margalida	TEU	16
Garcia Buades, M. Esther	TEU int.	16

Nombre total d'investigadors de la UIB: 5.

Total EJC/setmana: 2,4.

Keywords: domestic violence, male batterers, perpetrator profile.

Summary

Domestic violence have been regarded an important social problem during last years. National and international institutions as well as scientist have been increased their concern about solutions of this issue. The perpetrator profile is one of the questions that have generated more interest, that means the sociodemographic and psychosocial features that differentiate male batterers from male non batterers. From this concern have been raised an amount of literature that have only give us provisional conclusions. The objective of the present study is analysing comparatively the perpetrator profile form a double view: on the one hand, a revision of investigations up to the date and, on the other hand, a comparative analysis (between male batterers and non-batterers) on their believes about women and women condition.

Referència: PB98-0167 (DGESIC). Programa sectorial de promoció general del coneixement.

Títol: Variables predictoras de la eficacia de un tratamiento de exposición asistida por ordenador en el tratamiento del miedo a volar.

Classificació UNESCO: 610301.

Centre: Departament de Psicologia. Edifici Guillem Cifre de Colonya.

Investigador principal: BORNAS AGUSTÍ, F. Xavier.

Categoria: TU (àrea de coneixement: Personalitat, Avaluació i Tractament Psicològics).

Inici: 1999. **Fi:** 2002.

Membres de l'equip	Categoria	Dedicació (h/setm.)
Bornas Agustí, F. Xavier	TU	32
Tortella Feliu, Miquel	TEU	32
Llabrés Bordoy, Jordi	Aj. EU	16
García de la Banda García, Gloria	TEU	16
Miró Martínez, Jordi		16
Martínez-Abascal, M. Ángeles	TEU int.	16

Nombre total d'investigadors de la UIB: 5.

Total EJC/setmana: 2,8.

Keywords: specific phobia, fear of flying, computer-assisted exposure.

Summary

The research project has two main goals. The first aim is to know the characteristics of the patients with fear of flying that are the most relevant ones in order to predict the effectiveness of a computer-assisted exposure (CAE) treatment. The focus of the patient's fear, his or her before-flight anxiety level, and the intensity of his or her fear are the target variables of this research project. The second goal is to make available a self-administered version of the CAE treatment. Any company dealing with air passenger transportation (airlines, tour operators, travel agencies, tourism institutions, etc) could use the CAE treatment with those of their clients who show the personal characteristics found relevant by the research.

Referència: PB98-1499-C03-02 (DGESIC). Programa sectorial de promoció general del coneixement.

Títol: Análisis del trabajo emocional y su influencia sobre el burnout de los empleados y las evaluaciones de los usuarios.

Centre: Departament de Psicologia. Edifici Guillem Cifre de Colonya.

Investigador principal: MANASSERO MAS, M. Antònia.

Categoria: TU (àrea de coneixement: Psicologia Social).

Inici: 1999. **Fi:** 2001.

Membres de l'equip	Categoria	Dedicació (h/setm.)
Manassero Mas, M. Antònia	TU	16
Garcia Buades, M. Esther	TEU int.	16
Gili Planas, Margalida	TEU	16
Ferrer Pérez, Victòria	TU	16

Nombre total d'investigadors de la UIB: 4.

Total EJC/setmana: 1,6.

Summary

Research on service quality had pointed out the importance that user-provider interaction plays on users' quality perceptions, as well as the emotional aspects of that relationship. Moreover, for service organizations, and orientation towards service quality appears as a key aspect for providing good service and achieve users' satisfaction. Our previous research clarified some antecedents of service quality (expectancies, expectancies-perception discrepancy, equity), The present project tries to deep study some interesting questions opened by previous research. First, we will study the relationships that service orientation' climate (as perceived by employees), and burnout experienced by staff members has on users' perceptions of service received and equity in interaction with service providers. Second, the project analyses two different antecedents on service orientation' climate and burnout: the role that organizational climate as perceived by employees (measured as the FOCUS international research group had proposed: support, orientation toward goals, respect for rules and innovation) plays on service orientation' climate and burnout, on the one hand, and the role of different technological and organizative aspects (as training, computer support, remmuneration, human resources policies), on the other hand. Finally, the project takes into account the emotional work performed by contact staff, a key element in tourism organizations where contact personnel determines in high degree the service provided. The study analyzes the emotional work of contact employees (specially the degree of dissonance between the emotions that the job demand and the emotions that person would apply), and the reciprocity they perceive and their relationships with burnout, service orientation' climate and users' percpetions of service received. The sample consists of 60 hotels and 60 restaurants from Comunidad Valenciana and Islas Baleares (Spain), including sun and beach and cultural and city tourist organizations. The survey includes interviews with different employees for each hotel and restaurant and ten users interwied during the service provision.

Referència: BSO2000-1116-C04-02. Ministeri de Ciència i Tecnologia.

Modalitat: P1. Projecte d'investigació bàsica no orientada.

Títol: Estudio interdisciplinar de rasgos funcionales del grado humano. Estudio experimental de los correlatos cerebrales de los rasgos funcionales de conducta moral, capacidad estética y lenguaje metafórico.

Centre: Departament de Psicologia. Edifici Guillem Cifre de Colonya.

Investigador responsable: MARTY BROQUET, Gisèle.

Categoria: CU (àrea de coneixement: Psicologia Bàsica).

Inici: 2000. **Fi:** 2003.

Membres de l'equip	Categoria	Dedicació
Marty Broquet, Gisèle	CU	Única
Roca Bennàsar, Miquel	TU	Compartida
Escudero López, Juan T.	Aj. EU	Única
Munar Roca, Enric	TEU	Única
Rosselló Mir, Jaume	TEU	Única
Espino Ibáñez, Anna	As.	Compartida

Nombre total d'investigadors de la UIB: 6.

Summary

The study of evolution in terms of grades has been proposed as an alternative to cladistics limits existing to interpret ancestor-descendant relationships. However, "grades" are widely grounded on functional assumption, thus being difficult to quantify. The current project tries: Firstly, to establish an interdisciplinary evolutive scenario of the main functional traits of Homo sapiens (such as, language, aesthetics, and morals. Secondly, to perform experimental studies to obtain stimuli capable of activating brain areas of processing of these tasks. Thirdly, to localize brain areas functionally active during the mentioned tasks, to check the hypothesis of a prefrontal localization of moral judgement, aesthetic appreciation and metaphorical using of language -the development of which would have been responsible for the late hominization period. Fourthly, to built computer simulated models of the evolution of the capacity of analyzing and culturally transmitting evaluations. Fifthly, to analyse some turning point on the cultural evolution. Finally, to set up a model on the phylogeny of the already mentioned functional traits. How to identify grades and clades in the fossil record was mentioned in the Colloquium "Taxonomy and Systematics of the Human Clade" (Palma, February, 2000) as an area of particular interest of research in face of the V Congress of the IAHP (Barcelona 2003). The participants agreed in organising an International Group of research in human systematics to promote that kind of studies. To reach a tipification of the human grade is important in the systematics and paleontology fields, as well as in psychology, psychiatry, neurology, ethics, ethology, anthropology, biodiversity, and environmental studies.

Referència: BSO2000-1200. Ministeri de Ciència i Tecnologia.

Modalitat: P1. Projecte d'investigació bàsica no orientada.

Títol: Estudio de la prevalencia de la hiperactividad en edad escolar (EPHEE).

Classificació UNESCO: 320105.

Centre: Departament de Psicologia. Edifici Guillem Cifre de Colonya.

Investigador principal: SERVERA BARCELÓ, Mateu.

Categoria: TU (àrea de coneixement: Personalitat, Avaluació i Tractament Psicològics).

Inici: 2000. **Fi:** 2003.

Membres de l'equip	Categoria	Dedicació
Servera Barceló, Mateu	TU	Única
Cardo Jalón, Esther		Única
Villalonga Ramis, María Magdalena		Única
Llobera Cánaves, Joan		Compartida
Ripoll Amengual, Joana		Compartida

Nombre total d'investigadors de la UIB: 1.

Keywords: prevalence, hyperactivity.

Summary

Attention Deficit Hyperactivity Disorder (ADHD) is a common dysfunction in childhood, with a genetic basis and neuroanatomic and psicologic factors that produce attention deficit, impulsiveness and motor hyperactivity in children. In anglosajons countries the prevalence is of 5%, but they exist few study in our country. Our objective is to obtain the prevalence of the different subtypes of the ADHD in the school population between 6 and 10 years of the Island of Mallorca. We will use a neuropsychologic protocol of evaluation that includes questionnaires for parents and teachers, evaluation of the cognitive profile, evaluation of attention and impulsiveness through computers program (own versions) and full neurological evaluation of "soft neurological signs". The analysis of data will allow, to establish the prevalence, but also to compare the different evaluation methods used and to detect good screening tools for early detection.

Referència: BSO2000-0956. Ministeri de Ciència i Tecnologia.

Modalitat: P1. Projecte d'investigació bàsica no orientada.

Títol: Factores cognitivos y aptitudinales con el consumo de alimentos en la población infantil de 10 a 14 años.

Classificació UNESCO: 610201.

Centre: Departament de Psicologia. Edifici Guillem Cifre de Colonya.

Investigador principal: PICH SOLÉ, Jordi.

Categoria: TU (àrea de coneixement: Psicologia Bàsica).

Inici: 2000. **Fi:** 2003.

Membres de l'equip	Categoria	Dedicació
Pich Solé, Jordi	TU	Única
Domingo Palomares, Herminio	CEU	Única
Canals Casas, Ramon		Única

Nombre total d'investigadors de la UIB: 2.

Keywords: Food behavior, food preferences, implicit theories.

Summary

Leaving of the supposition that the feeding is not only a nutritional act but a behavior psychological as well as culturally determined, we intend the elaboration of a questionnaire and its application to a population of 400 subjects of 10 to 14 years of age dedicated to investigate the main factors implied in the appreciation or the infantile rejection of a list of basic foods in our culinary tradition. Later on another questionnaire dedicated to the parents will explore their implicit theories about the infantile feeding including its dietary beliefs, its valuation of the alimentary behavior of their children as well as the strategies before problematic alimentary behavior.

In the methodological order, the infantile subjects will value by means of scales from 1 of 5 for each food diverse parameters: consumption frequency, longing degree or aversion, healthfulness, consumption observed in parents and friends and existence of publicity. A global analysis of these answers will establish the influence of the growth and the sex of the children on the consumption of the diverse foods. Subsequently a multiple lineal regression will allow us to determine to what extent the consumption frequency can be dear starting from the qualities that the child attributes to the food (pleasantness and healthfulness) as well as of the models and social values (observation of the consumption on the part of his parents and friends and impact of the alimentary publicity).

Finally, the crossing between the questionnaires of the parents and their children will try to determine if the theories and more correct paternal alimentary attitudes belong together with the most varied and healthy diets on the part of the children.

Projecte: 83/00.

Modalitat: Acció estratègica per al foment de la igualtat d'oportunitats entre dones i homes. Ministeri de Treball i Assumptes Socials.

Títol: Evaluación de los factores psicosociales y su influencia sobre las mujeres sometidas a tratamientos de infertilidad. Construcción y validación de programas de intervención para la reducción de su impacto en dichas mujeres y en sus parejas.

Classificació UNESCO: 610501.

Centre: Departament de Psicologia. Edifici Guillem Cifre de Colonya.

Investigador principal: PÉREZ PAREJA, Francisco J.

Categoria: TU (àrea de coneixement: Personalitat, Avaluació i Tractament Psicològics).

Inici: 2000. **Fi:** 2003.

Membres de l'equip	Categoria	Dedicació (h/setm.)
Pérez Pareja, Francisco J.	TU	32
Borràs Sansaloni, Carme	As.	32
Palmer Pol, Alfons L.	TU	16
Cajal Blasco, Berta	TU	16
Sesé Abad, Albert	TEU int.	32
Castro Iglesias, M. del Carmen	As.	32
Roses, A.		32
Marqueta Sobrino, L. N.		32

Nombre total d'investigadors de la UIB: 6.

Total EJC/setmana: 4.

Participacions a altres projectes

Referència: PB96-0944. Programa sectorial de promoció general del coneixement.

Títol: Decisiones legales por jurados: efectos cognitivos y de grupo implicados.

Investigador principal: ARCE FERNÁNDEZ, Ramón.

Centre: Universidad de Santiago de Compostela.

Investigadors de la UIB:

PALMER POL, Alfons L.

Categoria: TU (àrea de coneixement: Metodologia de les Ciències del Comportament).

Total EJC/setmana: 0,4.

CAJAL BLASCO, Berta.

Categoria: TU (àrea de coneixement: Metodologia de les Ciències del Comportament).

Inici: 1997. **Fi:** 2000.

Referència: 1FD97-0558 (DGES). Fons FEDER.

Títol: Implantación de un sistema de calidad en la enseñanza superior basado en el modelo europeo de gestión para la mejora de la calidad.

Classificació UNESCO: 6114.

Investigador principal: RODRÍGUEZ MARÍN, Jesús.

Centre: Universidad Miguel Hernández.

Investigadores de la UIB:

MANASSERO MAS, M. Antònia.

Categoria: TU (àrea de coneixement: Psicologia Social).

FERRER PÉREZ, Victoria Aurora.

Categoria: TU (àrea de coneixement. Psicologia Social).

Inici: 1999. **Fi:** 2001.



DEPARTAMENT DE QUÍMICA

- Estudio químico-físico de la interacción entre antibióticos beta-lactámicos y análogos con beta-lactamasas. Caracterización de nuevas estructuras como potenciales cabezas de serie de nuevos antibióticos.
MUÑOZ IZQUIERDO, Francisco.
- Síntesis enantioselectiva de productos enantioméricamente puros mediante procesos catalíticos en medios convencionales y no convencionales.
SAÁ RODRÍGUEZ, José Manuel
- Contribución a la evaluación, control y reducción del impacto ambiental de las plantas de incineración de residuos sólidos urbanos.
CERDÀ MARTÍN, Víctor
- Simulación de vertidos de hidrocarburos en ecosistemas costeros: determinación de parámetros experimentales para su aplicación a planes de contingencia.
BERGUEIRO LÓPEZ, José Ramón
- Influencia de las variables de proceso en la evolución físico-química de algunos productos cárnicos crudos curados.
ROSSELLÓ MATAS, Carme
- Preparación y caracterización de óxidos metálicos de porosidad controlada.
OTERO AREAN, Carlos
- Estudios sobre litiasis renal: mecanismos de formación de cálculos.
GRASES FREIXEDAS, Felicià
- Estudios en química supramolecular: reconocimiento molecular, quimiosensores y autoensamblaje.
BALLESTER BALAGUER, Pau
- Complejos de metales de transición con moléculas que presentan actividad biológica y/o farmacológica.
TERRON HOMAR, Àngel
- Desarrollo y mejora de nuevos métodos automáticos robustos y sensibles para el control de parámetros de interés ambiental.
ESTELA RIPOLL, Josep Manuel
- Estudio químico físico de la inactivación de serin-enzimas por antibióticos beta-lactámicos.
MUÑOZ IZQUIERDO, Francisco
- Estudio químico-físico de las reacciones de condensación de piridoxamina (piridoxina) con cetoácidos y azúcares, su aplicación al estudio de enzimas PMP-dependientes y a la inhibición de la glicación no enzimática de proteínas .
DONOSO PARDO, Josefa L.
- Estimació de l'aromaticitat en derivats d'àcids oxocarbònics.
DEYÀ SERRA, Pere M.
- Protocolo de profilaxis de la nefrolitiasis inducida por Crixivan.
GRASES FREIXEDAS, Felicià
- Estudi relatiu al risc per a la salut humana a l'aplicació de PVC a obres de construcció de vivendes.
COSTA TORRES, Antoni.





- Incorporació de les noves tecnologies de la comunicació a l'ensenyament universitari de la Química Orgànica assistida amb tècniques multimèdia.
BALLESTER BALAGUER, Pau.
- Uso de ultrasonidos en los procesos de extracción con fluidos supercríticos: efectos sobre el proceso e implicaciones en las características y percepción del producto.
MULET PONS, Antoni.



Referència: PB96-0596-C02-02 (DGES). Programa sectorial de promoció general del coneixement.

Títol: Estudio químico-físico de la interacción entre antibióticos beta-lactámicos y análogos con beta-lactamasas. Caracterización de nuevas estructuras como potenciales cabezas de serie de nuevos antibióticos.

Classificació UNESCO: 2307.

Centre: Departament de Química. Edifici Mateu Orfila i Rotger.

Investigador principal: MUÑOZ IZQUIERDO, Francisco.

Categoria: TU (àrea de coneixement: Química Física).

Inici: 1997. **Fi:** 2000.

Membres de l'equip	Categoria	Dedicació (h/setm.)
Muñoz Izquierdo, Francisco	TU	32
Donoso Pardo, Josefa	TU	32
Roig Muntaner, Antoni	CU	32
Frau Munar, Joan	TU	32
Vilanova Canet, Bartomeu	Aj. EU	32
Llinás Martí, Antoni	Aj. EU	32
Coll Parets, Miquel	As.	16

Nombre d'investigadors de la UIB: 7.

Total EJC/setmana: 5,2.

Keywords: -lactams, -lactamasas, antibiotics.

Summary

In the present investigation project we wish to synthesize a new set of β -lactam structures and determine their stability against the β -lactamase hydrolysis. On the other hand, we will study the folding-unfolding process of β -lactamasas in presence of antibiotics in order to have a better characterization of the binding site. Meanwhile we will carry out a molecular modeling study of the active site of the β -lactamasas. The analysis of the results allows a more precise knowledge on the mechanism and role of the functional groups at the active site of these enzymes.

Referència: PB96-0203 (DGES). Programa sectorial de promoció general del coneixement.

Títol: Síntesis enantioselectiva de productos enantioméricamente puros mediante procesos catalíticos en medios convencionales y no convencionales.

Classificació UNESCO: 230699.

Centre: Departament de Química. Edifici Mateu Orfila i Rogter.

Investigador principal: SAÁ RODRÍGUEZ, José Manuel.

Categoria: CU (àrea de coneixement: Química Orgànica).

Inici: 1997. **Fi:** 2000.

Membres de l'equip	Categoria	Dedicació
Saá Rodríguez, José Manuel	CU	32
Capó Cañellas, Magdalena	B	40
Vega Reynés, Manuel	B	40

Nombre total d'investigadors de la UIB: 3.

Total EJC/setmana: 2,8.

Keywords: asymmetric catalysis, enantioselection, synthesis in non-conventional solvents.

Summary

Basically, the project aims at exploring the action of some new catalysis in enantioselective synthesis carried out in both conventional and non-conventional media. For one, we will assay two novel binaphthalenic homoquiral monophosphins in biphasic systems (either water and a organic solvent or water and a micellar catalyst) for the reduction of allylic esters, the hydrosilylation of alkenes and metal-catalyzed ene reactions. On the other hand, we expect to be able to achieve the enantioselective protonation of either metal enolates, enols or dienols, enolsilylethers and ketenesilylacetals by means of a series of homochiral general acid catalysts ("homochiral Bronsted acids"). Some of these novel compounds are seen as minimalist catalysts for promoting inter or intramolecular hydrolysis, alcoholysis, etc of esters, amides, phosphates, etc. Finally, a series of homochiral Lewis acid derivatives of B, Al, Sc, Ti, Zr will be prepared "in situ" and assayed for "superacid" activity in classic Lewis acid promoted reactions in conventional media. Derivatives of lanthanide triflates and octadentate ligands will also be prepared and assayed for catalytic activity in nonconventional media.

Referència: AMB97-0537 (CICYT). Programa nacional d'I+D en medi ambient.

Títol: Contribución a la evaluación, control y reducción del impacto ambiental de las plantas de incineración de residuos sólidos urbanos.

Classificació UNESCO: 2301.

Centre: Departament de Química. Edifici Mateu Orfila i Rotger.

Investigador principal: CERDÀ MARTÍN, Víctor.

Categoria: CU (àrea de coneixement: Química Analítica).

Inici: 1997. **Fi:** 2000.

Membres de l'equip	Categoria	Dedicació (h/setm.)
Cerdà Martín, Víctor	CU	32
Forteza Coll, Rafael A.	TU	16
Gómez Benito del Valle, Enrique	As.	16
Caro Fernández, Arturo	TEU	16
Colom, Miquel		

Nombre total d'investigadors de la UIB: 4.

Total EJC/setmana: 2.

Keywords: environmental impact, monitoring, analysis, pollution, atmosphere, waters, automation.

Summary

The objective of the present project is to contribute to the evaluation of the environmental impact produced by the setting up of a modern urban solid waste incinerator plant. For this purpose, the supervising plan established by the competent authorities regarding gas emissions and inmissions, waters, solid residues and soils will be followed. Contribution to the development of a new analytical methodology in order to solve a series of needs and deficiencies detected on a series of preliminary studies is intended.

With regard to environmental impact control the main gaps of the existing analytical methodologies for the control of both gas emissions and inmissions will be considered, either in relation to organic components (aromatic polycyclic compounds, dioxines, furanes, etc) or inorganic components (Hcl. Hg, etc.).

With regard to services, automatic methods of analysis which facilitate the control of different types of waters involved in the process of energy cogeneration will be developed in order to reduce in this way corrosion processes and wear out of turbines.

A special emphasis on the study of inertization processes of the resulting ashes is intended to increase the immobilization of the potentially polluting heavy metals which take place in dumping grounds.

Referència: MAR97-0415 (CICYT). Programa nacional de ciència i tecnologia marines.

Títol: Simulación de vertidos de hidrocarburos en ecosistemas costeros: determinación de parámetros experimentales para su aplicación a planes de contingencia.

Classificació UNESCO: 3308.

Centre: Departament de Química. Edifici Mateu Orfila i Rotger.

Investigador principal: BERGUEIRO LÓPEZ, José Ramón.

Categoria: TU (àrea de coneixement: Enginyeria Química).

Inici: 1997. **Fi:** 2000.

Membres de l'equip	Categoria	Dedicació (h/setm.)
Bergueiro López, José Ramón	TU	16
Lalucat Jo, Jordi	CU	16
Domínguez Laseca, Félix	As.	16
Pérez-Navarro Gómez, Ángel		
Morales Correas, Nuria		

Nombre total d'investigadors de la UIB: 3.

Total EJC/setmana: 1,2.

Keywords: oil spill, modeling, dispersants, biodegradation accelerators, contingency plants.

Summary

The goal of this proposal is the global study at the processes provoked by hydrocarbon spills in the sea and the development of simulation techniques to monitor the spill and for its control by physical, chemical and biological techniques, together with the experimental verification of these techniques. The deduced results will enable the definition of the basic procedures to be included in a Contingency Plan oriented to reduce the environmental impact. This Contingency Plan has to consider in the model the specific characteristics of the geographical area under study.

Referència: ALI97-0519-C04-04 (CICYT). Programa nacional de tecnologia d'aliments.

Títol: Influencia de las variables de proceso en la evolución físico-química de algunos productos cárnicos crudos curados.

Classificació UNESCO: 330914.

Centre: Departament de Química. Edifici Mateu Orfila i Rotger.

Investigadora principal: ROSSELLÓ MATAS, Carme.

Categoria: TU (àrea de coneixement: Enginyeria Química).

Inici: 1997.

Fi: 2000.

Membres de l'equip	Categoria	Dedicació (h/setm.)
Rosselló Matas, Carme	TU	16
Simal Florindo, Susana	Aj. EU	16
Cañellas Mut, Jaume	As.	16
Barrio Terol, Javier	As.	16
Frau Caldentey, Miquel Àngel		
Torres Oliver, Antònia Maria		

Nombre d'investigadors de la UIB: 4.

Total EJC/setmana: 1,6.

Keywords: dried cured ham, dried cured loin, sobrasada, processes, diffusion, drying.

Summary

The main objective of this work is to establish the relationship between the process variables and some cured meat products evolution. The process variables considered will be room moisture and temperature, the raw material characteristics being maintained constants as well as air velocity. The products to be studied include: dried cured ham, dried cured loin and sobrasada. The engineering approach to the problem will include studying the general components characteristics (fat from different origin and meat from different muscles, chopped or not), as well as the additional mass transfer resistance due to casing in sobrasada and dured loin. For intermuscular mass transfer the effect of connective tissue will be considered. Modelling will be carried out from this general components. Given that the products under consideration suffer a noticeable shrinkage and/or show an irregular shape, it will be necessary to use numerical techniques, nevertheless analytical solutions will be used when studying the general components processed under regular shapes. The evolution of the products will be established experimentally and related, through the models, to process variables. This relationship will be established at both laboratory and pilot scale. A quality assessment of the products will be carried out by sensory analysis as well as standard analytical procedures (chemical, physical and microbiological). For the sensory analysis an evaluation systems based on reference scales will be set up. The potential use of the results will be on the improvement of the control in the curing chambers due to the qualification of the influence on the product of the operating variables thus obtaining a better and more homogeneous quality of the products.

Referència: PB97-0147 (DGES). Programa sectorial de promoció general del coneixement.

Títol: Preparación y caracterización de óxidos metálicos de porosidad controlada.

Classificació UNESCO: 221001.

Centre: Departament de Química. Edifici Mateu Orfila i Rotger.

Investigador principal: OTERO AREAN, Carlos.

Categoria: TU (àrea de coneixement: Química Inorgànica).

Inici: 1998. **Fi:** 2001.

Membres de l'equip	Categoria	Dedicació (h/setm.)
Otero Arean, Carlos	CU	32
Peñarroya Mentrut, Margarita	Aj. EU	32

Nombre total d'investigadors de la UIB: 2.

Total EJC/setmana: 1,6.

Keywords: metal oxides, porosity, sol-gel, liposomes, nanostructures.

Summary

Methods for preparing monodispersed sub-micron spheres of metal oxides (ZrO_2 , Al_2O_3 , spinels, etc.) will be studied: particle size should be variable according to the specific preparation. Procedures will involve controlled hydrolysis and polymerization of metal alkaloides, and preparation inside liposomes. Obtained and characterized these materials, optimum conditions for incipient sintering will be studied. This sintering process should lead to formation of porous materials where pore size and topology can be conveniently controlled.

Referència: PM97-0040 (DGES). Programa sectorial de promoció general del coneixement.

Títol: Estudios sobre litiasis renal: mecanismos de formación de cálculos.

Classificació UNESCO: 230132.

Centre: Departament de Química. Edifici Mateu Orfila i Rotger.

Investigador principal: GRASES FREIXEDAS, Felicià.

Categoria: CU (àrea de coneixement: Química Analítica).

Inici: 1998. **Fi:** 2001.

Membres de l'equip	Categoria	Dedicació (h/setm.)
Grases Freixedas, Felicià	CU	32
March Isern, Joan Gabriel	TU	32
Costa Bauzà, Antònia	TEU	32
Bassa Malondra, Antoni	As.	16
Conte Visus, Antoni		16
Ramis Barceló, Margalida		16
García González, Ramón		16
Payeras Cifre, Antoni		16

Nombre total d'investigadors de la UIB: 4.

Total EJC/setmana: 2,8.

Keywords: crystallization, urolithogenesis.

Summary

A main objective of the present project is the study of the early stages of stone formation. For this purpose, new "in vitro" methodologies with use of alive renal animal tissues will be developed. With such studies it could be obtained important data about the cell action in the renal calculi development. The experience of the Group permits to pursue the obtention of effective therapeutic solutions for treatment and prevention of this disease. This, the actual studies performed by the Group have clearly demonstrated the exceptional inhibitory capacity that phytic acid exert on calcium oxalate and calcium phosphates crystallization, being such inhibitory capacity increased by the presence of Zn(II), and acting Vitamin A as inhibitor of the enzymes that metabolizes the phytic acid. For this reason we expect to deep into the study of the "in vivo" effects of mixtures phytic acid/Vitamin A/Zn(II), specially the relation between the Vitamin A consumption and the phytic acid excretion. Other objectives of this Project are the development of new analytical procedures in the "kit" form, to apply to the evaluation of important lithogenic parameters such as the urinary crystallization inhibitory capacity of urinary phytic acid concentration. Finally, a study of the calculogenesis induced by Indinavir (drug used in the pharmacological treatment of AIDS) will be performed, with the aim to find possible solutions of this problem.

Referència: PB98-0129 (DGESIC). Programa sectorial de promoció general del coneixement.

Títol: Estudios en química supramolecular: reconocimiento molecular, quimiosensores y autoensamblaje.

Classificació UNESCO: 23061.

Centre: Departament de Química. Edifici Mateu Orfila i Rotger.

Investigador principal: BALLESTER BALAGUER, Pau.

Categoria: TU (Química Orgànica).

Inici: 1999. **Fi:** 2002.

Membres de l'equip	Categoria	Dedicació (h/setm.)
Ballester Balaguer, Pau	TU	32
Costa Torres, Antoni	TU	32
Morey Salvà, Jeroni	TU	32
Deyà Serra, Pere M.	CU	32
Quiñonero Santiago, David	B	40
Prohens López, Rafel	B	40

Nombre total d'investigadors de la UIB: 6.

Total EJC/setmana: 5,2.

Keywords: molecular recognition, host-guest chemistry, guanidinium salts, squaramides, receptors, self-assembly, porphyrins, anion recognition.

Summary

In this research project we propose the synthesis and the study of abiotic receptors active in highly competitive solvents. The receptors will be prepared following a modular strategy and using charged interactions centers (guanidinium salts and squaramides) which will allow to establish simultaneously electrostatic and hydrogen bonding interactions with the substrate in order to compete with the solvating power of the solvent. These and other receptors developed by us will be used in conjunction with a signaling group (fluorescent) as the critical components in the development of new chemosensors. The utility of these chemosensors in the signaling and quantification of organic substrates and biologically relevant molecules will also be studied. We also propose the synthesis of giant acrobicyclic hosts, soluble in polar and non-polar solvents, having "box" like structures and featuring an enormous interior cavity, and the study of its complexation processes with organic guests. The self-assembly process of suitable tris-porphyrins leading to box "like" supramolecular assemblies will be investigated, as well as, its structures and functionality as an alternative to the previous covalent approach.

Referència: PB98-0123 (DGESIC). Programa sectorial de promoció general del coneixement.

Títol: Complejos de metales de transición con moléculas que presentan actividad biológica y/o farmacológica.

Classificació UNESCO: 230307.

Centre: Departament de Química. Edifici Mateu Orfila i Rotger.

Investigador principal: TERRON HOMAR, Àngel.

Categoria: TU (àrea de coneixement: Química Inorgànica).

Inici: 1999. **Fi:** 2002.

Membres de l'equip	Categoria	Dedicació (h/setm.)
Terron Homar, Àngel	TU	32
Fiol Arbós, Joan Jesús	TU	32
García Raso, Àngel	TU	32
Herrero Aísa, Luis Àngel	As.	16
Adrover Fiol, Bartomeu		16

Nombre total d'investigadors de la UIB: 4.

Total EJC/setmana: 2,8.

Keywords: antiviral, schiff bases, nucleosides, nitrogen bases, peptides, metal coordination complexes.

Summary

The main purpose of this project is the synthesis of new transition metal complexes with molecules that are known having biological and/or pharmacological activity. The research will be focused in derivatives of oligopeptides, nucleosides or nitrogen bases; in binary or ternary complexes of Schiff bases obtained from salicylidene aldehyde with peptides or amino acids, and in the obtention and study of binary complexes from bases with antiviral activity (acyclovir and others), or antineoplastic properties (thiopurines and others). The pharmacological and mutagenic activity of the complexes obtained will be also studied.

Referència: AMB99-0263. Programa nacional d'I+D en medi ambient.

Títol: Desarrollo y mejora de nuevos métodos automáticos robustos y sensibles para el control de parámetros de interés ambiental.

Classificació UNESCO: 2301.

Centre: Departament de Química. Edifici Mateu Orfila i Rotger.

Investigador principal: ESTELA RIPOLL, Josep Manuel.

Categoria: TU (àrea de coneixement: Químic Analítica).

Inici: 2000. **Fi:** 2001.

Membres de l'equip	Categoria	Dedicació (h/setm.)
Estela Ripoll, Josep Manuel	TU	32
Forteza Coll, Rafel A.	TU	32
Caro Fernández, Arturo	TEU	32
Serra Aragó, Josep M.		32

Nombre total d'investigadors de la UIB: 3.

Total EJC/setmana: 2,4.

Summary

The general goal of this project is contributing to evaluation and control of environmental contaminants and the development of simple, sensitive and robust automatic methods and techniques of analysis. It is sought to reach this objective using sequential flow injection analysis (SIA), multisyringe flow injection analysis (MSFIA) and SIA-MSFIA techniques, in combination, if it is necessary, with pre-concentration flow techniques on liquid or solid support. The environmental parameters of interest are: phenols (EPA's priority), PAH's (EPA's priority), pesticides(warfarin, fuberidazole, thiabendazole, carbaryl, ...), metals (Al, Ca, Mg, Fe, Hg, As, Pb, Cu, Cd, Cr y Zn), and inorganic anions (phosphate, nitrate, nitrite, silicate, chloride and sulphate). The samples will be atmospheric aerosols and different kinds of waters (mainly public consumption and waste waters). This project is concordant with the work of our group of investigation during the last years which is reflected in the results fulfilled through previous projects: WASTEWATERS QUALITY MONITOR (Measuring and Testing of European Union MATCT93-008) and DEVELOPMENT OF NEW AUTOMATIC METHODS FOR THE EVALUATION OF ENVIRONMENTAL DEGRADATION PROCESSES THROUGH SEQUENTIAL INJECTION ANALYSIS (CICYT AMB94-0534).

Referència: BQU2000-0242. Ministeri de Ciència i Tecnologia.

Modalitat: P1. Projecte d'investigació bàsica no orientada.

Títol: Estudio químico físico de la inactivación de serin-enzimas por antibióticos beta-lactámicos.

Classificació UNESCO: 2307.

Centre: Departament de Química. Edifici Mateu Orfila i Rotger.

Investigador principal: MUÑOZ IZQUIERDO, Francisco.

Categoria: TU (àrea de coneixement: Química Física).

Inici: 2000.

Fi: 2003.

Membres de l'equip	Categoria	Dedicació
Muñoz Izquierdo, Francisco	TU	Compartida
Donoso Pardo, Josefa L.	TU	Compartida
Frau Munar, Joan	TU	Compartida
Vilanova Canet, Bartomeu	TU int.	Compartida
Llinás Martí, Antoni	Aj. U.	Compartida
Coll Parets, Miquel	As.	Única

Nombre total d'investigadors de la UIB: 6.

Keywords: beta-lactam antibiotics, beta-lactamases, elastases, HCMV proteases, serine enzymes, chemical kinetic, computational chemistry.

Summary

In the present investigation Project we wish to determine the inactivation mechanism of three different serine enzymes (beta-lactamases, elastases and HCMV proteases) by beta-lactam antibiotics, classic monobactams and the new bridged monobactams which recently have been proposed as strong beta-lactamase inhibitors.

The choice of these three enzymes is due to their therapeutic relevance. Beta-lactamases are the main cause of diseases such as emphysema, arteriosclerosis and rheumatoid arthritis. HCMV proteases is essential for mature of patients and organ transplant recipients.

By Stopped Flow, FTIR, HPLC, RMN and UV measurements we will study the enzymatic. Theoretical calculation will be done for the modeling of the active site. Later we will propose the inhibition mechanisms. These mechanisms must perfectly explain the experimental results.

Once established the mechanism we will be able to postulate new inhibition structures.

Referència: BQU2000-0214. Ministeri de Ciència i Tecnologia.

Modalitat: P1. Projecte d'investigació bàsica no orientada.

Títol: Estudio químico-físico de las reacciones de condensación de piridoxamina (piridorina) con cetoácidos y azúcares, su aplicación al estudio de enzimas PMP-dependientes y a la inhibición de la glicación no enzimática de proteínas .

Classificació UNESCO: 2307.

Centre: Departament de Química. Edifici Mateu Orfila i Rotger.

Investigador principal: DONOSO PARDO, Josefa L.

Categoria: TU (àrea de coneixement: Química Física).

Inici: 2000. **Fi:** 2003.

Membres de l'equip	Categoria	Dedicació
Donoso Pardo, Josefa L.	TU	Compartida
Muñoz Izquierdo, Francisco	TU	Compartida
Frau Munar, Joan	TU	Compartida
Vilanova Canet, Bartomeu	TU int.	Compartida
Llinás Martí, Antoni	Aj. U.	Compartida
Salvà Salvà, Antoni	As.	Única

Nombre total d'investigadors de la UIB: 6.

Keywords: pyridoxamine, pyridorine, vitamin B6, schiff bases, carbohydrates, PMP-dependent enzymes, advanced glycation process, amadorins.

Summary

Pyridoxamine and Pyridoxamine 5' phosphate are two forms of the Vitamin B6. Its function as coenzyme in Vitamin B6 dependent enzymes involves the formation of a Schiff base between its amino group and a carbonyl group and a carbonyl group of an alfa-ketoacid in the transamination processes and the formation of the Schiff base with the 4-keto group of a cyclic hexose in the catalytic process of formation of 3, 6-dideoxysugars.

Pyridoxamine has been recently proposed as an inhibitor of the advanced glycation process of proteins due to its capability of formation of a Schiff base with the carbonyl group of glucose.

In this work we will study from a kinetic point of view the formation and later evolution of the Schiff bases between PMP and alfa-ketoacids, as well as with sugars (aldoses and other cyclic sugars). We will pay special attention to the reactions with aldoses and we will investigate the role of pyridoxamine as reactive of the post-Amadori products generated in the glycation of amino acids. We will study the influence of the medium, the reactive ionization state and the reactive nature in general on these reactions.

Projecte finançat per la CICYT al Centre de Supercomputació de Catalunya (CESCA).

Títol: Estimació de l'aromaticitat en derivats d'àcids oxocarbònics.

Centre: Departament de Química. Edifici Mateu Orfila i Rotger.

Investigador principal: DEYÀ SERRA, Pere M.

Categoria: CU (àrea de coneixement: Química Orgànica).

Membres de l'equip

Categoria

Deyà Serra, Pere M.	CU
Ballester Balaguer, Pau	TU
Costa Torres, Antoni	TU
Frontera Beccaria, Antoni	Contracte de Reincorporació
Quiñonero Santiago, David	B
Suñer Sabater, Guillem A.	

Període del projecte: 1999-2001.

Hores de càlcul: 14.000.

Keywords: oxocarbon acids, aromaticity, NMR, theoretical studies.

Summary

The main purpose of this project is the systematic estimation of aromaticity in oxocarbon acids and derivatives (dianions, amides, esters,...) by means of computational methods. *Ab initio* theoretical methodologies are required to analyse the electronic structures of the different compounds of the oxocarbon series. Energetic (aromatic stabilization energies), structural (nearly equal bond lengths in the ring) and magnetic (magnetic susceptibilities, NCIS: Nucleus-Independent-Chemical-Shift) criteria have to be used to explore the aromatic character of the proposed compounds.

Referència: MSD639-GRA2/97.

Títol: Protocolo de profilaxis de la nefrolitiasis inducida por Crixivan.

Centre: Departament de Química. Edifici Mateu Orfila i Rotger.

Investigador principal: GRASES FREIXEDAS, Felicià.

Categoria: CU (àrea de coneixement: Química Analítica).

Membres de l'equip

Grases Freixedas, Felicià
Costa Bauzà, Antonia
Simonet Suau, Bartomeu
Garcia González, Ramon
Bassa Malondra, Antoni
Payeras Cifre, Antoni

Ajudes de la Comissió Interdepartamental de Ciència i Tecnologia. Conselleria d'Innovació i Energia. Govern Balear

Títol: Estudi relatiu al risc per a la salut humana a l'aplicació de PVC a obres de construcció de vivendes.

Centre: Departament de Química. Edifici Mateu Orfila i Rotger.

Investigador principal: COSTA TORRES, Antoni.

Categoria: TU (àrea de coneixement: Química Orgànica).

Inici: 2000. **Fi:** 2001.

Membres de l'equip	Categoria	Dedicació (h/setm.)
Costa Torres, Antoni	TU	16
Cifre Bauzà, Joan	Tèc.	32
Martorell Crespí, Gabriel	Tèc.	32
Gil Cardona, M. Isabel	Tèc.	32
Saus Sarrias, Carles		16

Nombre total d'investigadors de la UIB: 4.

Total EJC/setmana: 3,2.

Keywords: PVC, DSC, TG, FT-IR, ftalates, molecular recognition, chemosensors.

Summary

The current use of PVC based polymers as building materials have a potential risk for the human health as well as for the environment due to the special features of these materials. The aim of this project is to develop an analytical protocol in a multidisciplinary approach, whose results will allow, as the first target, a straightforward identification of PVC materials. The analysis of substances that could present a toxic risk for the human health will be studied as part of a second stage. In that part PVC materials that are not in accordance with the UE regulations will be detected. The degradation and/or decomposition of these materials will be studied in the range of environmental conditions characteristic, and the presence of volatile organic compounds (VOC) will be evaluated. Finally, a line of new and specific chemosensors for ftalates will be synthesised and a new biotoxicity test based on hepatocytes will be explored. The expected results will allow the presence of PVC materials whose composition and properties are not in agreement with the UE and other regulations. The result will allow to go further in the environmental control of the PVC materials by using a multidisciplinary and integrated approach that will lead to the development of new analytical tools based on molecular recognition elements.

Títol: Incorporació de les noves tecnologies de la comunicació a l'ensenyament universitari de la Química Orgànica assistida amb tècniques multimèdia.

Centre: Departament de Química. Edifici Mateu Orfila i Rotger.

Investigador principal: BALLESTER BALAGUER, Pau.

Categoria: TU (àrea de coneixement: Química Orgànica).

Inici: 2000. **Fi:** 2002.

Membres de l'equip	Categoria	Dedicació (h/setm.)
Ballester Balaguer, Pau	TU	32

Nombre total d'investigadors de la UIB: 1.

Total EJC/setmana: 0,8.

Keywords: information, communication, internet, multimedia, learning, organic chemistry, university, cal, web.

Summary

This is a project of technological development directed towards the production of interactive and multimedia education materials which could be used for the computer assisted teaching of Organic Chemistry. There are three clear objectives, educational materials which are interactive and are used for the resolution of Organic Chemistry exercises, animations of reactions mechanisms and short video clips of the basic technique used in an Organic Chemistry laboratory. All the educational material will be elaborated to be used in any computer hardware (PC, mac, Sgi, etc). Thus the educational materials should be accessible using any internet browser. All the material could be placed in an internet server or sold as a CD-ROM. The methodology generated during the development of the project could be used for producing other educational material just changing the contents and concepts.

Participacions a altres projectes

Referència: 1FD97-1246-CO3-01 (CICYT). Fons FEDER.

Títol: Uso de ultrasonidos en los procesos de extracción con fluidos supercríticos: efectos sobre el proceso e implicaciones en las características y percepción del producto.

Investigador principal: MULET PONS, Antoni.

Centre: Universitat Politècnica de València.

Investigadors de la UIB:

ROSSELLÓ MATAS, Carme.

Categoria: TU (àrea de coneixement: Enginyeria Química).

SIMAL FLORINDO, Susana.

Categoria: Aj. EU (àrea de coneixement: Enginyeria Química).

FEMENIA MARROIG, Antoni.

Categoria: Contracte de reincorporació.

SÁNCHEZ CLARK, Emma S.

Categoria. Becària.

Inici: 2000.

Fi: 2001.



**INSTITUT MEDITERRANI D'ESTUDIS AVANÇATS
(IMEDEA)
INSTITUT MIXTE CSIC-UIB**

- Variabilidad oceánica de alta frecuencia y sus implicaciones en el transporte de propiedades físicas biológicas.
HERNÁNDEZ GARCÍA, Emili
- Factores ecológicos y fisiológicos que influyen en la distribución y abundancia de plantas endémicas amenazadas de las Islas Baleares.
TRAVESET VILAGINÉS, Anna Maria
- Análisis de la evolución y extinción de *Myotragus balearicus* Bate 1909 (*Artiodactyla: Caprinae*).
ALCOVER TOMÀS, Josep Antoni
- Respuestas de la vid al riego moderado: efectos en los flujos de savia, crecimiento y fotosíntesis, maduración y calidad del fruto.
MEDRANO GIL, Hipólito
 - Biodegradación de compuestos aromáticos; modelo de naftaleno y sus derivados.
LALUCAT JO, Jordi
 - Dinámica no lineal y estocástica en sistemas extendidos.
TORAL GARCÉS, Raúl
 - Cooperación y fenómenos no lineales en sistemas complejos extendidos (CONOCE).
SAN MIGUEL RUIBAL, Maximino
- Estudio multidisciplinar y de la dinámica de un cañón submarino y sus repercusiones sobre ecología del margen continental del mediterráneo noroccidental.
PALANQUES MONTEYS, Albert
 - Riego de apoyo en vid para vinificación de tintos.
MEDRANO GIL, Hipólito
- Estudio de la *Posidonia oceanica* y su interacción con la circulación costera y los procesos litorales en la costa valenciana.
TINTORÉ SUBIRANA, Joaquim
- Adaptaciones fisiológicas de los peces de hielo (*Channichthyidae*) durante el desarrollo, con especial referencia a la expresión y actividad de la forma inducible de óxido nítrico sintasa (NIOS).
MORALES NIN, Beatriu
- Flujo de carbono en la región canaria: acoplamiento entre exportación costera y demanda oceánica (COCA-BAL).
AGUSTÍ REQUENA, Susana





- Diodos láser con selección modal.
BALLE MONJO, Salvador
- Aislamiento geográfico y exclusión competitiva en la filogenia y la evolución de ciertos géneros de coleopteros.
PETITPIERRE VALL, Eduard
- Flora micológica (hifomicetos) en ambientes naturales terrestres y acuáticos del área ibero-balear.
DESCALS CALLISEN, Enric
- Investigaciones aplicadas al programa de conservación de la gaviota de Audouin: los efectos de los depredadores terrestres en la ecología y la dinámica de sus poblaciones.
ORO DE RIVAS, Daniel
- Sistema per a la gestió de l'entorn marí (SIGEMAR).
TINTORÉ SUBIRANA, Joaquim
- Estímulo experimental de la producción antártica costera (ESEPAC).
AGUSTÍ REQUENA, Susana
- Development of a programmable photonic sensor for the prevention of risk in companies.
BALLE MONJO, Salvador



Referència: MAR98-0840 (CICYT). Programa nacional de ciència i tecnologia marines.

Títol: Variabilidad oceánica de alta frecuencia y sus implicaciones en el transporte de propiedades físicas biológicas.

Classificació UNESCO: 2510.

Centre: Institut Mediterrani d'Estudis Avançats (IMEDEA).

Investigador principal: HERNÁNDEZ GARCÍA, Emili.

Inici: 1998. **Fi:** 2001.

Membres de l'equip	Categoria	Dedicació (h/setm.)
Hernández García, Emili	TU	16
Font Ferré, Jordi		16
García Ladona, Emilio		16
Piro, Oreste	TU	16
Parisi Baradad, Vicenç		16

Nombre total d'investigadors de la UIB: 2.

Total EJC/setmana: 0,8.

Keywords: variability, mesoscale, transport, teledetection, circulation models, stochastic forcings, langrangian measurements.

Summary

The main objective of this proposal is the analysis of the effects of high frequency atmospheric forcings on the emergence, persistence, and dynamics of mesoscale ocean structures, and of their consequences on transport phenomena. Special attention will be given to the transport of substances relevant to the dynamics of marine ecosystems such as nutrients or biomass and to the Mediterranean geographic area, Alboran and the Algerian basin in particular. Specifically we sought to apply three methodologies: numerical simulation of circulation models in the presence of several kinds of atmospheric forcing, analysis of lagrangian data obtained from float tracking, and the quantitative use of information obtained by teledetection. This objective is fully contained in the Programa nacional de ciencia y tecnología marianas, both because of the specific subjects considered and because of its applied and interdisciplinary character. Potential benefits include the improvement of modelling and prediction of physico-biological transport processes, and the development of novel techniques for processing and use of satellite data.

Referència: PB97-1194 (DGES). Programa sectorial de promoció general del coneixement.

Títol: Factores ecológicos y fisiológicos que influyen en la distribución y abundancia de plantas endémicas amenazadas de las Islas Baleares.

Classificació UNESCO: 241713-19-03.

Centre: Institut Mediterrani d'Estudis Avançats (IMEDEA).

Investigadora principal: TRAVESET VILAGINÉS, Anna Maria.

Inici: 1998. **Fi:** 2001.

Membres de l'equip

Traveset Vilaginés, Anna Maria

Medrano Gil, Hipólito

Rita Larrucea, Joan

Mus Amésquita, Maurici

Sven Evert Jonasson

Flexas Sans, Jaume

Keywords: endemic plants, threatened species, plant-animal interactions, photosynthesis, photoinhibition, drought, water stress, reproductive mechanisms, dispersal mechanisms, colonization mechanisms.

Summary

The project will examine both ecological and physiological factors that affect the distribution and abundance of a group of plants endemic to the Balearic Islands, and currently with a very restricted distribution (some considered as 'endangered' in the IUCN categories). The main goals of the study are: (1) to evaluate the population structure of the threatened plant species and (2) to determine the relative importance of biotic factors (interactions with animals in the different phases of the plant life cycle -pollination, herbivory and seed dispersal- or interactions with other plants) and of abiotic factors (such as plant responses to soil water deficit, a relevant trait in current mediterranean conditions) to be able to predict the risk of extinction of the threatened or endangered species in their natural habitat.

Referència: PB97-1173 (DGES). Programa sectorial de promoció general del coneixement.

Títol: Análisis de la evolución y extinción de *Myotragus balearicus* Bate 1909 (*Artiodactyla: Caprinae*).

Classificació UNESCO: 241605.

Centre: Institut Mediterrani d'Estudis Avançats (IMEDEA).

Investigador principal: [ALCOVER TOMÀS, Josep Antoni](#).

Inici: 1998. **Fi:** 2001.

Membres de l'equip

Alcover Tomàs, Josep Antoni

Guerrero Ayuso, Víctor

Moyà-Solà, Salvador

Keywords: *myotragus*, *artiodactyla*, *caprinae*, Balearic Islands, human-autochthonous fauna contact, insular evolution.

Summary

The first goal of the present project is the study of unknown aspects of the biology and evolution of *Myotragus balearicus* Bate 1909, a bizarre dwarf artiodactyle (45 cm height at the shoulders) vanished about 4.200 years ago. We will study its diet, its functional anatomy, the differences between Mallorcan and Menorcan populations, the sexual dimorphism, sex ratio, as well as the heterochronic processes involved on its evolution and the taphonomy of some selected cave deposits. Another question to be studied is the role of *Myotragus* in the insular ecosystems. On the other hand, we will depend on the study of the contact between the first human settlers and *Myotragus balearicus*.

Referència: AGF97-1180. Programa nacional d'investigació i desenvolupament agrari.

Títol: Respuestas de la vid al riego moderado: efectos en los flujos de savia, crecimiento y fotosíntesis, maduración y calidad del fruto.

Classificació UNESCO: 310205, 241719.

Centre: Institut Mediterrani d'Estudis Avançats (IMEDEA).

Investigador principal: MEDRANO GIL, Hipólito.

Categoria: CU (àrea de coneixement: Biologia Vegetal).

Inici: 1997. **Fi:** 2000.

Membres de l'equip	Categoria	Dedicació (h/setm.)
Medrano Gil, Hipólito	CU	32
Díez Betencourt, Clara	CSIC	20
Tortosa Martorell, Enric	CSIC	20
Escalona Lorenzo, J.	B	40
Flexas Sans, Jaume	B	40

Nombre total d'investigadors de la UIB: 2.

Total EJC/setmana: 1,5.

Keywords: water defficit, sap flow, photosynthesis, vine, rippening, quality, wine.

Summary

Irrigation is becoming to be a common practice in spanish vineyards, and new information is needed on the vine response to drought . The vine response to soil water defficit involve modifications in plant growth patterns, total leaf area, water relations, photosynthesis and assimilate partitioning. These changes have an evident effect on harvest. Water defficit severely reduce the plant production capacity. The new approaches now available to follow sap flow, and growth in to the shoot or whole plant, able to achieve a better understanding of the actual water used by the plant (important for irrigation dosage and schedule), as well as to attain a better understanding of the ecophysiological processes involved in crop yield determination and grape quality.

Referència: BIO97-0639. Programa nacional de biotecnologia.

Títol: Biodegradación de compuestos aromáticos; modelo de naftaleno y sus derivados.

Centre: Institut Mediterrani d'Estudis Avançats (IMEDEA).

Investigador principal: LALUCAT JO, Jordi.

Categoria: CU (àrea de coneixement: Microbiologia).

Inici: 1997 **Fi:** 2000.

Membres de l'equip	Categoria
Lalucat Jo, Jordi	CU
Bergueiro López, José Ramón	TU
Bosch Zaragoza, Rafael	Aj. EU
García-Valdés Pukkits, Elena	TU
Rosselló Mora, Ramon	As.

Nombre total d'investigadors de la UIB: 5.

Keywords: biodegradation, naphthalene, pollutants, *pseudomonas*.

Summary

Aerobic naphthalene mineralization by *Pseudomonas stutzeri* AN 10 will be studied by using biochemical and genetical tools. These genes are chromosomally encoded and sufficiently distant (biochemically and genetically) from those already described in other bacteria. Main objectives of the project are: 1) Sequencing and evolutive analysis of the complete naphthalene pathway (*nah* and *sal* operons) of *Pseudomonas stutzeri* AN 10. 2) Characterization of the enzymes involved in the degradation, specially when using methylated and halogenated substrates. 3) Improving the degradative capabilities by genetic manipulation of key enzymes in the pathway. 4) Study of chromosomal rearrangements when the strains are adapted to toxic xenobiotic compounds, like 4-chlorosalicylate. 5) Characterization of the diversity of the naphthalene genes in various types of bacteria (*Pseudomonas*, *Comamonas*, and Gram positives). Results can be useful for bioremediation purposes and for biotransformation of aromatic compounds into commercial products.

Referència: PB97-0141-C02-01-02 (DGES). Programa sectorial de promoció general del coneixement.

Títol: Dinámica no lineal y estocástica en sistemas extendidos.

Classificació UNESCO: 220510.

Centre: Departament de Física-IMEDEA. Edifici Mateu Orfila i Rotger

Coordinador: TORAL GARCÉS, Raúl.

Categoria: CU (àrea de coneixement: Física de la Matèria Condensada).

Subprojecte 01. Investigador principal: TORAL GARCÉS, Raúl.

Inici: 1998. **Fi:** 2001.

Membres de l'equip	Categoria	Dedicació (h/setm.)
Toral Garcés, Raúl	CU	20
Mirasso Santos, Claudio Rubén	TU	20
Cartwright, Julyan		40
Sintes Olives, Tomàs	Aj. U	32
Martínez Eguiluz, Víctor	B	40
Mayol Serra, Catalina	B	40

Nombre total d'investigadors de la UIB: 6.

Total EJC/setmana: 4,8.

Subprojecte 02. Investigador principal: COLET RAFECAS, Pere.

Membres de l'equip	Categoria	Dedicació (h/setm.)
Colet Rafecas, Pere	CC (CSIC)	24
Zimmermann, Martin	B	40
Santagiustina, Marco	C	40

Nombre total d'investigadors de la UIB: 1.

Total EJC/setmana: 1.

Keywords: non linear dynamics, optical systems, extended systems, stochastic resonance.

Summary

The aim of this project is to contribute to the understanding of spatially dependent systems described by equations with nonlinear terms and, that can also contain stochastic terms. Among the many systems where this occurs, we will basically concentrate on the study of optically passive non linear media (kerr medium, optical parametric oscillator, second harmonic generation, etc), noise induced phase transitions (especially the influence of the spacial correlation length of the noise), lasers with transverse and polarization dependence of the electrical field, systems of coupled non linear electronic circuits, stochastic resonance in extended systems (Fitzhugh-Nagumo model of excitability), biological processes (ion transport through membranes), etc. The project uses basically analytical developments and numerical techniques, although we aim to make an effort in the modeling with electronic circuits, and intermediate line between numerical simulations and experiments.

Referència: BFM2000-1108. Ministeri de Ciència i Tecnologia.

Modalitat: P1. Projecte d'investigació bàsica no orientada.

Títol: Cooperación y fenómenos no lineales en sistemas complejos extendidos (CONOCE).

Classificació UNESCO: 2299.

Centre: Institut Mediterrani d'Estudis Avançats (IMEDEA).

Investigador principal: SAN MIGUEL RUIBAL, Maximino.

Categoria: CU (àrea de coneixement: Física de la Matèria Condensada).

Inici: 2000.

Fi: 2003.

Membres de l'equip	Categoria	Dedicació
San Miguel Ruibal, Maximino	CU	Compartida
Toral Garcés, Raúl	CU	Compartida
Balle Monjo, Salvador	TU	Compartida
Hernández García, Emili	TU	Compartida
Mirasso Santos, Claudio	TU	Compartida
Piro Perusin, Oreste	As. Estr.	Compartida
Salazar Tió, Rafael	Aj. U.	Única
Colet Rafecas, Pere		Compartida
Matias Muriel, Manuel		Compartida

Nombre total d'investigadors de la UIB: 7.

Keywords: nonlinear, cooperative phenomena, localized structures, excitability, chaos, spatio-temporal complexity, fluctuations, dynamical systems, feedback, biooscillators, advection, reaction-diffusion, nonlinear optics, semiconductor lasers, VCSELs.

Summary

CONOCE is a nonlinear and cooperative research effort in the general interdisciplinary context of the new directions of statistical and nonlinear physics, with special reference to the behavior of spatially extended systems with external forcing and or non-local couplings. On the one hand the project intends to contribute to the development of methods, concepts and description of generic behavior in nonlinear physics in 6 aspects: fronts, growth phenomena and localized structures. Prediction in spatiotemporal chaos. Systems with feedback. Cooperative phenomena in networks with nonlocal coupling, fluctuations, and synchronization phenomena. On the other hand, it addresses the use of these methods and concepts in 5 exploratory lines of strategic research: mixing, transport and localized structures in fluids. Patterns in nonlinear optics, cooperative phenomena, synchronization and feedback in semiconductor lasers, biological oscillators in excitable media and competition, coordination and cooperation of agents. General phenomena considered in the different research lines of the project include excitability emergence of localized structures, synchronization and coherent response to fluctuations.

Referència: MAR99-1060-C03-03.

Títol: Estudio multidisciplinar y de la dinámica de un cañón submarino y sus repercusiones sobre ecología del margen continental del mediterráneo noroccidental.

Classificació UNESCO: 251001.

Centre: Institut de Ciències de la Mar.

Investigador principal: PALANQUES MONTEYS, Albert.

Investigador de l'IMEDEA: TINTORÉ SUBIRANA, Joaquim.

Categoria: Professor d'investigació del CSIC.

Inici: 2000 **Fi:** 2002.

Membres de l'equip	Categoria
Tintoré Subirana, Joaquim	Professor d'investigació
Gomis Bosch, Damià	TU
Monserrat Tomàs, Sebastià	TU
Duarte Quesada, Carlos	Professor d'investigació
Agustí Requena, Susana	Professor d'investigació

Keywords: biodiversity, fluxes of matter and energy, biological production, tridimensional circulation, shelf-slope transfer, particulated matter, sediment, carbon.

Summary

The northwestern mediterranean canyons are morphological structures with high hydrodynamics activity and transfer of matter. The circulation inside of the canyons is highly heterogenic and its variability is controlled by several forcing mechanisms. The catalan sea is an excellent candidate area to study such processes in detail due to its characteristics. Similarly, the transfer of matter and energy in the canyons is also very complex, and the balance among the vertical and lateral supplies from the shelf and the slope is not known very accurately. The preferent transport of matter from shallow to deep environments through canyons generates a high biomass and production, with a possible exportation of dissolved organic/inorganic matter, which indicates that the deep sea can be more productive than what is was known up to now. In addition the external supply creates bioaccumulation zones in the canyon floor and that they are important reservoirs of biodiversity. The canyons could be one of the environments with a higher diversity and production in the Mediterranean sea. The changes of the circulation induced by the canyons can produce slope water intrusions and canyon biomass towards the shelf. Both situations have important repercussions in the marine system. This project results from the necessity of knowing the dynamics of the canyons in detail, to understand the delivery and concentration processes of continental material and export of the products from the endemic fauna living in this habitat.

Referència: 1FD97-1276. Fons FEDER.

Títol: Riego de apoyo en vid para vinificación de tintos.

Investigador principal: CASTEL SÁNCHEZ, Juan R.

Centre: Institut Valencià d'Investigacions Agràries.

Investigador de l'IMEDEA: MEDRANO GIL, Hipólito.

Categoria: CU (àrea de coneixement: Biologia Vegetal).

Inici: 2000. **Fi:** 2001.

Membres de l'equip

Categoria

Castel Sánchez, Juan Ramón

Medrano Gil, Hipólito

Tortosa Martorell, Enric

Cebolla Rosell, Vicente

Haba Ejarque, Manuel

Chirivella Romero, Camilo

Catalán García, Francisco

CU

Investigador científic CSIC

Keywords: drip irrigation, red wine, yield, quality.

Summary

The global objective of this project is the study of deficit irrigation strategies in grapevine for red wine production with the aims of improving yield and maintaining or improving wine quality. For this purpose field experiments and physiological studies will be carried out in cv. Tempranillo in two contrasting climatic locations (Requena, Valencia and Consell, Mallorca) in comparison to the varieties of major local importance (Bobal and Manto Negro, respectively). The main aspects of this study will be:

1. Relationships between soil water availability, transpiration (sap flow) and photosynthesis at plant level.
2. Vegetative and productive grapevine responses to moderate amounts of irrigation applied in different phenological phases.
3. Fruit and wine quality parameters for production of red and rose wines.

The information obtained through these experiments should constitute an important basis to evaluate the economical impact of moderate irrigation in grapevines for red wine production, thus providing objective criteria for the respective ADC councils.

Referència: 1FD97-1654. Fons FEDER.

Títol: Estudio de la *Posidonia oceanica* y su interacción con la circulación costera y los procesos litorales en al costa valenciana.

Classificació UNESCO: 251010, 251001, 251007.

Investigador principal: MEDINA FOLGADO, Josep R.

Centre: Universitat Politècnica de València.

Investigador de l'IMEDEA: TINTORÉ SUBIRANA, Joaquim.

Categoria: Professor d'investigació del CSIC.

Inici: 2000. **Fi:** 2001.

Membres de l'equip	Categoria
Tintoré Subirana, Joaquim	Professor d'investigació del CSIC
Duarte Quesada, Carlos	Professor d'investigació del CSIC
Morales Nin, Beatriu	Investigador científic del CSIC
Gomis Bosch, Damià	TU
Monserrat Tomàs, Sebastià	TU
Lalucat Jo, Jordi	CU

Keywords: coastal circulation, *Posidonia oceanica*, wave propagation, beach nourishment, beach monitoring.

Summary

The *Posidonia oceanica* areas key elements protecting the diversity of the Spanish Mediterranean marine ecosystem. Although seagrass significantly modify both the sedimentary processes and the wave propagation conditions on the continental shelf, and is the basis of a Mediterranean marine ecosystem, the extension and evolution of the *Posidonia oceanica* areas are not well defined and therefore not correctly considered in the shore protection and beach management programs. POSICOST will define an appropriate methodology to define: (1) extension (superior limit) of the *Posidonia oceanica* areas in the valencian coastline, (2) short time estimation of evolution, (3) selected monitoring indicators for a long-time monitoring to be integrated in the coastal GIS of the Generalitat Valenciana. The ocean circulation on the Mediterranean continental shelf is conditioned by the wind, its interaction with longshore currents generated by wind waves and the internal circulation associated to density fronts on the continental shelf. This coastal circulation is conditioning important processes as: (1) evolution of quality of coastal waters in time and space, (2) dispersion of contaminants along the coastline and (3) advance, retreat or death of the *Posidonia oceanica* areas. However, our 3-D model, to predict currents on the continental shelf, is able to provide reliable enough information to be used efficiently in shore protection, planning and management. Specially for this zones where the interaction of the dynamic and littoral processes and the *Posidonia oceanica* is significant, POSICOST will analyze those interactions. The sedimentary processes and currents interacts with the *Posidonia oceanica* (from 3 to 40 meters depth) and will be considered in a new 3-D currents model to be applicable to the valencian coastal waters. Along the spanish littoral, the beaches are the critical production factor of the tourism industry. The beach stability has direct impact on both the regional economy and the local terrestrial and marine ecosystem. The beach nourishment is a key tool of modern shore protection and may positively or negatively affect the growth of the

Posidonia oceanica. POSICOST will analyze nourished beaches and marine desimentary deposits with may affect *Posidona oceanica*, and will define efficient methods to estimate the positive and negative impact of the coastal engineering works on the seagrass. Several pilot areas in the Valencian and SW Mallorca coastline are selected to be analyzed and monitorized during two years: (1) erosive beaches, (2) stable beaches, (3) accreted beaches, (4) nourished beaches and (5) marine sedimentary deposits useful for beach nourishment projects in the Valencian and the Balearic islands.

Referència: ANT99-1216. Programa nacional d'investigació a l'Antàrtida.

Títol: Adaptaciones fisiológicas de los peces de hielo (*Channichthyidae*) durante el desarrollo, con especial referencia a la expresión y actividad de la forma inducible de óxido nítrico sintasa (NIOS).

Classificació UNESCO: 251005, 240105.

Centre: Institut Mediterrani d'Estudis Avançats (IMEDEA).

Investigador principal: MORALES NIN, Beatriu.

Categoria: Investigador científic CSIC.

Inici: 2000 **Fi:** 2001.

Membres de l'equip	Categoria
Morales Nin, Beatriu	Investigador Científic CSIC
Palomera Laforga, Isabel	Titulada superior CSIC
Busquets Xaubet, Xavier	Investigador INSALUD
Agustí Garcia-Navarro, Àlvar	Investigador INSALUD

Keywords: hyperosia, hyposia, nitric oxide synthase, iNOS, nitrogen reactive species, antioxidants, catalase, superoxide dismutase, SOD, icefish, larvae, juveniles, *Channichthyidae*, antartica.

Summary

In this project we will study icefish development and measure the expression (mRNA and protein) of the three main isoforms of nitric oxide synthase as an indicator of tissue hyperoxia in icefish larvae. This study will be complemented with the measurement of oxidate stress markers as catalase and superoxide dismutase and nitrotyrosine modification of proteins as an index of peroxytrinte activity. The development stage of the icefish larvae will be determined by analysis of otholits and by the ratio of ARN/AND concentration. The oxygen compsumption by the icefish larvae will also be analised experimentally. The results of these studies will be compared with the performed in adult icefishes.

Referència: REN2000-1471-C02-01.

Modalitat: P2. Projecte d'investigació bàsica orientada.

Títol: Flujo de carbono en la región canaria: acoplamiento entre exportación costera y demanda oceánica (COCA-BAL).

Classificació UNESCO: 241001, 251002, 251007.

Centre: Institut Mediterrani d'Estudis Avançats (IMEDEA).

Investigadora principal: AGUSTÍ REQUENA, Susana.

Categoria: Científica titular del CSIC.

Inici: 2000. **Fi:** 2003.

Membres de l'equip

Agustí Requena, Susana

Duarte Quesada, Carlos

Vaqué Vidal, Dolors

Latasa Arcalis, Mikel

Referència: TIC99-0645-C05-02.

Títol: Diodos láser con selección modal.

Classificació UNESCO: 330707.

Centre: Instituto de Física de Cantabria.

Investigador principal: PESQUERA, Luís.

Investigador de l'IMEDEA: BALLE MONJO, Salvador.

Categoria: TU (àrea de coneixement: Física de la Matèria Condensada).

Inici: 1999. **Fi:** 2002.

Membres de l'equip

Categoria

Balle Monjo, Salvador

TU

Mirasso Santos, Claudio

TU

Giudici, Massimo

Tredicce, Jorge R.

Referència: BOS2000-0822. Ministeri de Ciència i Tecnologia.

Modalitat: P1. Projecte d'investigació bàsica no orientada.

Títol: Aislamiento geográfico y exclusión competitiva en la filogenia y la evolución de ciertos géneros de coleopteros.

Centre: Institut Mediterrani d'Estudis Avançats (IMEDEA).

Investigador principal: PETITPIERRE VALL, Eduard.

Categoria: CU (àrea de coneixement: Genètica).

Inici: 2000. **Fi:** 2003.

Membres de l'equip	Categoria	Dedicació
Petitpierre Vall, Eduard	CU	Compartida
Juan Clar, Carles	TEU	Compartida
Sacarés Mas, Antoni		Compartida

Nombre total d'investigadors de la UIB: 2.

Keywords: DNA sequences, molecular phylogenies, chromosomes, endemics, allopatric, evolution, competitive exclusion, *Chrysomelidae coleopterans*.

Summary

The apterous leaf beetle *Cyrtonus* are a suitable model for the high number of endemics to assess the effects of geographic isolation in Iberian and Balearic mountain ranges, by DNA analysis, cytogenetic studies and morphometric measurements. Two mitochondrial gene fragments and another of nuclear ribosomal DNA will be amplified by PCR and then sequenced, to construct cladograms of phylogenetic interrelationships among populations and species of *Cyrtonus*, whose congruence with their karyotypes and geographic distributions would be also evaluated. Particular attention will be paid to the differences in the previous traits between species in allopatry and sympatry, to ascertain possible influences of character displacement and competitive exclusion. Moreover, in the large genus *Chrysolina*, the same two mitochondrial gene fragments plus karyotypes and host-plant affiliations will be examined in 10-15 further species, to obtain more supported cladograms than the previous ones based on 30 species, as well as giving a major emphasis on the complex taxonomy and evolutionary patterns displayed in the Central European subgenus *Colaphoptera sensu lato*. The species of *Colaphoptera sensu lato* feed as a whole on plants of three distinct families, *Lamiaceae*, *Asteraceae* and *Apiaceae*, and might be a right group to investigate the shifts in host-plant affiliations from genetic standpoints.

Referència: REN2000-1521 / GLO.

Títol: Flora micològica (hifomicetos) en ambientes naturales terrestres y acuáticos del área ibero-balear.

Classificació UNESCO: 241706.

Centre: Institut Mediterrani d'Estudis Avançats (IMEDEA).

Investigador principal: DESCALS CALLISEN, Enric.

Categoria: Científic titular del CSIC.

Inici: 2000. **Fi:** 2002.

Membres de l'equip

Categoria

Descals Callisen, Enric

Científic titular del CSIC

Gené Díaz, Josepa

TEU

Mercado Sierra, Ángel

Investigador

Keywords: natural sources, biodiversity, hyphomycetes, fungi, taxonomy, pure culture.

Summary

Two coordinated objectives, using a similar methodology, are proposed, with the aim of acquiring a deeper knowledge of the mycota of aquatic and terrestrial *Hypomycetes* in the ibero-balearic region. Both tasks are designed within the framework of the long term project 'Flora micològica balear'. The leader of the project will attempt to carry survey and pure culture description of aquatic (freshwater) Hyphomycetes in selected habitats, and to complete a checklist of such fungi. It is expected that the pertinent Flora will be at an advanced stage of completion by the end of the project. The rest of the team will attempt to carry out similar work on soil *Hyphomycetes* from terrestrial and aquatic habitats and on terrestrial plant litter *Hyphomycetes*, with the intention of eventually preparing a checklist, and at a later stage, a Flora on the pertinent organisms.

Referència: BOS2000-0569-C02-02.

Títol: Investigaciones aplicadas al programa de conservación de la gaviota de Audouin: los efectos de los depredadores terrestres en la ecología y la dinámica de sus poblaciones.

Classificació UNESCO: 240123.

Centre: Institut Mediterrani d'Estudis Avançats (IMEDEA).

Investigador principal: ORO DE RIVAS, Daniel.

Categoria: Científic titular del CSIC.

Inici: 2000.

Fi: 2003.

Membres de l'equip

Categoria

Oro de Rivas, Daniel

Científic titular del CSIC

Jiménez Pérez, Juan

Generalitat Valenciana

Mínguez Díaz, Eduardo

Generalitat Valenciana

Keywords: migration, predation, dispersal, wintering, fisheries discards, pollution, mercury, laying costs, protracted clutches, food supplementation, yolk characteristics, Ebro delta, Chafarinas, Columbretes.

Summary

The presence of terrestrial carnivores is analysed at the world's largest breeding colony of Audouin's gulls, a threatened species. This was used as a natural experiment to assess the effects of predation at the level of both population ecology (changes in demographic parameters, population growth rate, dispersal and immigration, coloniality and conspecific attraction, source-sink dynamics) and conservation biology (extinction probabilities, culling of predators).

Ajudes de la Comissió Interdepartamental de Ciència i Tecnologia. Conselleria d'Innovació i Energia. Govern Balear.

Títol: Sistema per a la gestió de l'entorn marí (SIGEMAR).

Centre: Institut Mediterrani d'Estudis Avançats (IMEDEA).

Investigador principal: TINTORÉ SUBIRANA, Joaquim.

Categoria: Professor d'investigació de CSIC.

Inici: 1998. **Fi:** 2000.

Membres de l'equip	Categoria	Dedicació (h/setm.)
Tintoré Subirana, Joaquim	Professor d'investigació	10
Monserrat Tomàs, Sebastià	TU	5
Gomis Bosch, Damià	TU	5
Balle Monjo, Salvador	TU	5
Reus Llagostera, M. Cristina	C	40

Summary

SIGEMAR (Marine Environment Management System) is a proposal to develop a project to allow to introduce the new technology management in oceanographic studies and its relation with the marine environment, through a computer tool that uses the communication advances (internet network), that can help and simplify the study of several physic variables and that can be used by any people who work in fields related with the marine research. This tool will permit quickly and easily to obtain graphics representation (simples or complexes) essential for oceanographic researches using several scientific visualisation techniques. All this researches related with sciences and marine technologies have a clearly applied character and have an effect on several sectors (fishing, contamination, shipping,...). Therefore, this tool means an advance on the environment knowledge development and it can help to resolve its problems, now that, it helps and completes the researches in these subjects. The group of oceanography has expertise in the subject from its participation in international projects on similar type of problems.

Referència: ANT97-0273. Programa nacional d'investigació a l'Antàrtida.

Títol: Estímulo experimental de la producció antàrtica costera (ESEPAC).

Centre: Institut Mediterrani d'Estudis Avançats (IMEDEA).

Investigadora principal: AGUSTÍ REQUENA, Susana.

Categoria: Científic titular del CSIC.

Inici: 1998. **Fi:** 2001.

Membres de l'equip	Categoria
Agustí Requena, Susana	CT (CSIC)
Duarte Quesada, Carlos	PI (CSIC)
Vaqué Vidal, Dolors	CT (CSIC)

Keywords: antarctic ocean, plankton production, mesocosms, temporal variability, trophic networks.

Summary

Antarctic coastal ecosystems are characterized by a substantial planktonic production, which have an important contribution to the carbon flow in the Southern Ocean and, therefore, its role in the carbon budget of the global ocean. Present knowledge points to the control of coastal planktonic production in Antarctica by biological and physical factors. However, our present knowledge on these control mechanisms is still poor, and we are, as yet, unable to predict the magnitude and fate of Antarctic planktonic production. The different hypotheses on the regulation of the planktonic production in the Antarctic coast must, therefore, be subject to experimental manipulation at a relevant scale, allowing the observation of the entire system. The goal of this project is to conduct the experimental work with mesocosms needed to test the importance of different control mechanisms of Antarctic coastal production, to produce a predictive model, which will be tested against a detailed time series and oceanographic surveys. The model will then be used to estimate the role of Antarctic coastal communities in the flow of carbon in the Antarctic Ocean.

Projecte d'investigació en tecnologies de la informació i de les comunicacions.

Títol: Development of a programmable photonic sensor for the prevention of risk in companies.

Classificació UNESCO: 330707.

Centre: Institut Mediterrani d'Estudis Avançats (IMEDEA).

Investigador principal: BALLE MONJO, Salvador.

Categoria: TU (àrea de coneixement: Física de la Matèria Condensada).

Inici: 1999. **Fi:** 2000.

Membres de l'equip	Categoria
Balle Monjo, Salvador	TU
Mirasso Santos, Claudio Rubén	TU



PROJECTES D'ESTÍMUL A LA TRANSFERÈNCIA DE RESULTATS D'INVESTIGACIÓ (PETRI)

- Receptores de imidazolinas y adrenoceptores alfa-2 en el SNC. Caracterización bioquímica y molecular, y modulación fisio-farmacológica y patológica.
ESCRIBÁ RUIZ, Pablo.
- Evaluación del análisis del óxido nítrico exhalado para la monitorización de las infecciones bacterianas en la enfermedad pulmonar obstructiva crónica (EPOC).
ALBERTÍ SERRANO, Sebastià
- Métodos moleculares para la detección de fraudes en aditivos alimentarios.
BENEDÍ BENITO, Vicente J.

Referència: PTR95-0421-OP (PETRI).

Títol: Receptores de imidazolinas y adrenoceptores alfa-2 en el SNC. Caracterización bioquímica y molecular, y modulación fisio-farmacológica y patológica.

Centre: Departament de Biologia. Edifici Guillem Coloma Casanovas.

Investigador principal: ESCRIBÁ RUIZ, Pablo.

Categoria: TEU (àrea de coneixement: Biologia Cel·lular).

Inici: 2000. **Fi:** 2002.

Membres de l'equip	Categoria	Dedicació (h/setm.)
Escribá Ruiz, Pablo	TEU	20
Miralles Socias, Antoni	TU	20
Estebán Valdés, Susana	TU	10

Nombre total d'investigadors de la UIB: 3.

Total EJC/setmana: 1,25.

Referència: PTR95-0453-OP (PETRI).

Títol: Evaluación del análisis del óxido nítrico exhalado para la monitorización de las infecciones bacterianas en la enfermedad pulmonar obstructiva crónica (EPOC).

Centre: Hospital Son Dureta.

Investigador principal: ALBERTÍ SERRANO, Sebastià.

Categoria: AS. (àrea de coneixement: Microbiologia).

Inici: 2000. **Final:** 2002.

Membres de l'equip	Categoria
Albertí Serrano, Sebastià	As.
Benedí Benito, Vicente J.	TU
Borrel Solé, Núria	
Busquets Xaubet, Xavier	
Agustí García-Navarro, Àlvar	
Salas Llinàs, Ernest	
Sauleda Roig, Jaume	

Nombre total d'investigadors de la UIB: 2.

Referència: PTR95-0461-OP (PETRI).

Títol: Métodos moleculares para la detección de fraudes en aditivos alimentarios.

Classificació UNESCO: 330912, 330923.

Centre: Departament de Biologia-IMEDEA. Edifici Guillem Colom Casasnovas.

Investigador principal: BENEDÍ BENITO, Vicente J.

Categoria: TU (àrea de coneixement: Microbiologia).

Inici: 2000. **Final:** 2002.

Membres de l'equip	Categoria	Dedicació (h/setm.)
Benedí Benito, Vicente J.	TU	20
Albertí Serrano, Sebastià	As.	20
Doménech Sánchez, Antonio	B	40
Rosselló Picornell, Josep Antoni		20

Nombre total d'investigadors de la UIB: 3.

Total EDP/semana: 2,5

Keywords: food additives, identification, molecular methods, DNA.

Summary

Current EU directives laying down specific purity criteria on food additives other than colours and sweeteners presents an important gap in the technical description of the methods to distinguish between food additives locust bean gum and guar gum (E 410 and E 412, respectively). This makes possible the accidental (unadverted) or intentional (fraudulent) addition of E 412 to E 410 by producers and/or blenders. The consequences are: (1) locust bean gum producers (European companies) are subjected to unfair competition by their Asian counterparts (guar gum producers), and (2) end user companies using these additives in their processed foods may be incorrectly labeling their products due to the undeclared presence of gums mixtures instead of the labeled pure gum.

Our group has recently developed a DNA-based methods to identify and distinguish both additives. The methods are described in detail in a patent application jointly filed by our group (inventors) and UIB, CSIC, Universidad de Valencia and Carob S.A. as applicants. This projects aims to transfer the cited methods to Carob SA, a locust bean gum producer.



ACCIONS INTEGRADES

- Tratamiento del miedo a volar con procedimientos de simulación.
BORNAS AGUSTÍ, F. Xavier

Inestabilidades en la emisión de un láser de semiconductor sujeto a realimentación óptica y sus aplicaciones.
MIRASSO SANTOS, Claudio

Autoensamblaje de porfirinas en supramoléculas con estructura.
BALLESTER BALAGUER, Pau

Teoría de las propiedades ópticas y de agregados calientes de metales nobles y de la dinámica de relajación en femtosegundos de agregados y puntos cuánticos.
CASAS AMETLLER, Montserrat

Proyecto ISIR (Italian-Spanish Information Retrieval).
DELGADO DOMÍNGUEZ, Adelaida

Utilización de porfirinas para la generación de ensamblajes moleculares multi-componente.
BALLESTER BALAGUER, Pau

Elaboración y caracterización de aleaciones con memoria de forma: preparación directa por el método "in rotating water spinning".
PONS MORRO, Jaume

Los reinos de Mallorca y Cerdeña en la monarquía hispánica de los Austrias (siglos XVI-XVII).
JUAN VIDAL, Josep

Aplicación de técnicas moleculares a la ecología microbiana marina: estudio comparativo de comunidades bacterianas marina psicófilas y mesófilas.
LALUCAT JO, Jordi

Referència: HA98-0061.

Acció hispano-alemanya.

Títol: Tratamiento del miedo a volar con procedimientos de simulación.

Investigador principal de la UIB: BORNAS AGUSTÍ, F. Xavier.

Departament: Psicologia.

Període: 1999-2000.

Referència: HA98-0029.

Acció hispano-alemanya.

Títol: Inestabilidades en la emisión de un láser de semiconductor sujeto a realimentación óptica y sus aplicaciones.

Investigador principal de la UIB: MIRASSO SANTOS, Claudio.

Departament: Física.

Període: 1999-2001.

Referència: HB98-0010.

Acció hispano-britànica.

Títol: Autoensamblaje de porfirinas en supramoleculas con estructura.

Investigador principal de la UIB: BALLESTER BALAGUER, Pau.

Departament: Química.

Període: 1999-2000.

Referència: HA98-0064.

Acció hispano-alemanya.

Títol: Teoría de las propiedades ópticas y de agregados calientes de metales nobles y de la dinámica de relajación en femtosegundos de agregados y puntos cuánticos.

Investigadora principal de la UIB: CASAS AMETLLER, Montserrat.

Departament: Física.

Període: 1999-2000.

Referència: HI98-0018.

Acció hispano-italiana.

Títol: Projecte ISIR (Italian-Spanish Information Retrieval).

Investigadora principal de la UIB: DELGADO DOMÍNGUEZ, Adelaida.

Departament: Ciències Matemàtiques i Informàtica.

Període: 1999-2000.

Referència: HB99-0042.

Acció hispano-britànica.

Títol: Utilización de porfirinas para la generación de ensamblajes moleculares multi-componente.

Investigador principal: BALLESTER BALAGUER, Pau.

Departament: Química.

Període: 2000-2002.

Referència: HF99-0056.

Acció hispano-francesa.

Títol: Elaboración y caracterización de aleaciones con memoria de forma: preparación directa por el método "in rotating water spinning".

Investigador principal: PONS MORRO, Jaume.

Departament: Física.

Període: 2000-2001.

Referència: HI99-0022.

Acció hispano-italiana.

Títol: Los reinos de Mallorca y Cerdeña en la monarquía hispánica de los Austrias (siglos XVI-XVII).

Investigador principal: JUAN VIDAL, Josep.

Departament: Ciències Històriques i Teoria de les Arts.

Període: 2000-2001.

Referència: HA99-0013.

Acció hispano-alemanya.

Títol: Aplicación de técnicas moleculares a la ecología microbiana marina: estudio comparativo de comunidades bacterianas marina psicrófilas y mesófilas.

Investigador principal: LALUCAT JO, Jordi.

Departament: IMEDEA.

Període: 2000-2001.



ACCIONS ESPECIALS

- Sistema de diseño multipuesto cooperativo 3D para arquitectura (M3D).
LUO, Yuhua
- Ayuda complementaria para el proyecto SUCSEDE.
PUIGJANER TREPAT, Ramon
- 10 Congreso Internacional Performance Tools '98.
PUIGJANER TREPAT, Ramon
- Soporte a la Delegación española en el Foro de Ciencia Global de la OCDE.
GARCIA MORENO, Eugeni
- Modelización y simulación del cuerpo humano.
MAS SANSÓ, Ramon
- Congreso 1999 EUSFLAT-ESTYLEF.
MAYOR FORTEZA, Gaspar
- International workshop on articulated motion and deformable models.
GONZÁLEZ HIDALGO, Manuel
- Simposium de filosofía política sobre: La Política frente a la Globalización.
RIUTORT SERRA, Bernat
- Reunión internacional sobre emociones y cerebro (nuevos avances en investigación básica y aplicaciones clínicas).
MONTOYA JIMÉNEZ, Pedro
- Workshop sobre ondas magnetohidrodinámicas en la corona solar (mhd waves in the solar corona).
BALLESTER MORTES, Josep L.
- III Escuela de Química Teórica de la Universitat de les Illes Balears.
MUÑOZ IZQUIERDO, Francisco
- INTERMED, estudi interdisciplinar de la mediterrània occidental.
TINTORÉ SUBIRANA, Joaquim
- Effects of entrophicated seawater on rocky shore ecosystems studied in large littoral mesocosm.
DUARTE QUESADA, Carlos
- Prediction of the resilience and recovery of distribeb coastal communities in the tropics.
DUARTE QUESADA, Carlos
- Producción de materia orgánica disuelta en el Atlántico Central: consecuencias para el flujo de carbono.
AGUSTÍ REQUENA, Susana
- Edición del libro 'El pulso de la investigación en ciencias marinas en España'.
DUARTE QUESADA, Carlos
- Revisión del papel del plánton marino como fuente o sumidero de CO².
DUARTE QUESADA, Carlos
- Recuperación de series temporales de temperatura en la franja costera del mediterráneo español.
TINTORÉ SUBIRANA, Joaquim
- Consolidación del Grupo de Oceanografía Interdisciplinaria.
TINTORÉ SUBIRANA, Joaquim

Referència: TIC98-1530-CE (CICYT). Programa nacional de tecnologies de la informació i de les comunicacions.

Títol: Sistema de diseño multipuesto cooperativo 3D para arquitectura (M3D).

Centre: Departament de Ciències Matemàtiques i Informàtica. Edifici Anselm Turmeda.

Investigador responsable: LUO, Yuhua.

Categoria: AS. ESTR. (àrea de coneixement: Ciències de la Computació i Intel·ligència Artificial).

Inici: 1998.

Fi: 2001.

Referència: TIC98-1848-CE (CICYT). Programa nacional de tecnologies de la informació i de les comunicacions.

Títol: Ayuda complementaria para el proyecto SUCSEDE.

Centre: Departament de Ciències Matemàtiques i Informàtica. Edifici Anselm Turmeda.

Investigador responsable: PUIGJANER TREPAT, Ramon.

Categoria: CU (àrea de coneixement: Arquitectura i Tecnologia de Computadors).

Inici: 1999.

Fi: 2001.

Referència: TIC98-1570-E (CICYT). Programa nacional de tecnologies de la informació i de les comunicacions.

Títol: 10 Congreso Internacional Performance Tools '98.

Centre: Departament de Ciències Matemàtiques i Informàtica. Edifici Anselm Turmeda.

Investigador responsable: PUIGJANER TREPAT, Ramon.

Categoria: CU (àrea de coneixement: Arquitectura i Tecnologia de Computadors).

Inici: 1999.

Fi: 2000.

Referència: AE98-0128. Oficina de Ciència i Tecnologia de Presidència del Govern.

Títol: Soporte a la Delegación española en el Foro de Ciencia Global de la OCDE.

Centre: Departament de Física. Edifici Mateu Orfila i Rotger.

Investigador responsable: GARCIA MORENO, Eugeni.

Categoria: CU (àrea de coneixement: Tecnologia Electrònica).

Inici: 1999.

Fi: 2000.

Referència: TIC99-1465-E. Programa nacional de tecnologies de la informació i de les comunicacions.

Títol: Modelización y simulación del cuerpo humano.

Centre: Departament de Ciències Matemàtiques i Informàtica. Edifici Anselm Turmeda.

Investigador responsable: MAS SANSÓ, Ramon.

Categoria: TEU (àrea de coneixement: Ciències de la Computació i Intel·ligència Artificial).

Inici: 2000.

Fi: 2001.

Referència: TIC99-0392-E. Programa nacional de tecnologies de la informació i de les comunicacions.

Títol: Congreso 1999 EUSFLAT-ESTYLE.

Centre: Departament de Ciències Matemàtiques i Informàtica. Edifici Anselm Turmeda.

Investigador responsable: MAYOR FORTEZA, Gaspar.

Categoria: CU (àrea de coneixement: Ciències de la Computació i Intel·ligència Artificial).

Inici: 2000. **Fi:** 2001.

Referència: TIC00-1957-E. Programa nacional de tecnologies de la informació i de les comunicacions.

Títol: International workshop on articulated motion and deformable models.

Centre: Departament de Ciències Matemàtiques i Informàtica. Edifici Anselm Turmeda.

Investigador responsable: GONZÁLEZ HIDALGO, Manuel.

Categoria: TU (àrea de coneixement: Ciències de la Computació i Intel·ligència Artificial).

Inici: 2000. **Fi:** 2001.

Referència: PGC2000-2292-E.

Títol: Simposium de filosofía política sobre: La Política frente a la Globalización.

Centre: Departament de Filosofia. Edifici Ramon Llull.

Investigador responsable: RIUTORT SERRA, Bernat.

Categoria: TU (àrea de coneixement: Filosofia Moral).

Inici: 2000. **Fi:** 2001.

Referència: PGC2000-2515-E.

Títol: Reunión internacional sobre emociones y cerebro (nuevos avances en investigación básica y aplicaciones clínicas).

Centre: Departament de Psicologia. Edifici Guillem Cifre de Colonya.

Investigador responsable: MONTOYA JIMÉNEZ, Pedro.

Categoria: TU (àrea de coneixement: Psicobiologia).

Inici: 2000. **Fi:** 2001.

Referència: PGC2000-2516-E.

Títol: Workshop sobre ondas magnetohidrodinámicas en la corona solar (mhd waves in the solar corona).

Centre: Departament de Física. Edifici Mateu Orfila i Rotger.

Investigador responsable: BALLESTER MORTES, Josep L.

Categoria: TU (àrea de coneixement: Física de la Terra, Astronomia i Astrofísica).

Inici: 2000. **Fi:** 2001.

Referència: PPQ2000-1827-E.

Títol: III Escuela de Química Teórica de la Universitat de les Illes Balears.

Centre: Departament de Química. Edifici Mateu Orfila i Rotger.

Investigador responsable: MUÑOZ IZQUIERDO, Francisco.

Categoria: TU (àrea de coneixement: Química Física).

Inici: 2000. **Fi:** 2001.

Project núm.: MAR98-1353-CE. Programa nacional de ciència i tecnologia marines.

Títol: INTERMED, estudi interdisciplinar de la mediterrània occidental.

Centre: Institut Mediterrani d'Estudis Avançats (IMEDEA).

Investigador responsable: TINTORÉ SUBIRANA, Joaquim

Categoria: Professor d'investigació del CSIC.

Inici: 1999. **Fi:** 2000.

Referència: MAR98-1591-CE. Programa nacional de ciència i tecnologia marines.

Títol: Effects of entrophicated seawater on rocky shore ecosystems studied in large littoral mesocosm.

Centre: Institut Mediterrani d'Estudis Avançats (IMEDEA).

Investigador responsable: DUARTE QUESADA, Carlos.

Categoria: Professor d'investigació del CSIC.

Inici: 1999. **Fi:** 2001.

Referència: MAR98-1839-CE. Programa nacional de ciència i tecnologia marines.

Títol: Prediction of the resilience and recovery of distribeb coastal communities in the tropics.

Centre: Institut Mediterrani d'Estudis Avançats (IMEDEA).

Investigador responsable: DUARTE QUESADA, Carlos.

Categoria: Professor d'investigació del CSIC.

Inici: 1999. **Fi:** 2002.

Referència: MAR98-1676-E. Programa nacional de ciència i tecnologia marines.

Títol: Producción de materia orgánica disuelta en el Atlántico Central: consecuencias para el flujo de carbono.

Centre: Institut Mediterrani d'Estudis Avançats (IMEDEA).

Investigadora responsable: AGUSTÍ REQUENA, Susana.

Categoria: Científic titular del CSIC.

Inici: 1999. **Fi:** 2000.

Referència: ANT98-1557-E. Programa nacional d'investigació a l'Antàrtida.
Títol: Edición del libro 'El pulso de la investigación en ciencias marinas en España'.
Centre: Institut Mediterrani d'Estudis Avançats (IMEDEA).
Investigador responsable: DUARTE QUESADA, Carlos.
Categoria: Professor d'investigació del CSIC.
Inici: 1999. **Fi:** 2000.

Referència: MAR99-1315-E. Programa nacional de ciència i tecnologia marines.
Títol: Revisión del papel del pláncton marino como fuente o sumidero de CO².
Centre: Institut Mediterrani d'Estudis Avançats (IMEDEA).
Investigador responsable: DUARTE QUESADA, Carlos.
Categoria: Professor d'investigació del CSIC.
Inici: 1999. **Fi:** 2000.

Referència: MAR99-1283-E. Programa nacional de ciència i tecnologia marines.
Títol: Recuperación de series temporales de temperatura en la franja costera del mediterráneo español.
Centre: Institut Mediterrani d'Estudis Avançats (IMEDEA).
Investigador responsable: TINTORÉ SUBIRANA, Joaquim.
Categoria: Professor d'investigació del CSIC.
Inici: 2000. **Fi:** 2001.

Referència: AE00-0356.
Títol: Consolidación del Grupo de Oceanografía Interdisciplinaria.
Centre: Institut Mediterrani d'Estudis Avançats (IMEDEA).
Investigador responsable: TINTORÉ SUBIRANA, Joaquim.
Categoria: Professor d'investigació del CSIC.
Inici: 2000. **Fi:** 2001.



[Retorn](#)

PROJECTES DE RECERCA APLICADA I DESENVOLUPAMENT



[Endavant](#)

Títol: Avaluació contínua de l'aplicació del document únic de programació, Foner II 1994-99-Objectiu 5b) a la CAIB.

Investigador: BENNÀSAR ROIG, Antoni.

Departament: Biologia.

Empresa/Administració: Conselleria d'Agricultura, Comerç i Indústria.

Inici: 1997. **Fi:** 2000.

Títol: Suport científicotècnic al Laboratori d'Anàlisi del MICOFB.

Investigador: COSTA TORRES, Antoni.

Departament: Serveis Científicotècnics.

Empresa/Administració: Col·legi de Farmacèutics.

Inici: 1999. **Fi:** 2000.

Títol: Control i altres estudis de lleixius i detergents.

Investigador: FORTEZA COLL, Rafel.

Departament: Química.

Empresa/Administració: Associació de Fabricants de Productes Químics de Mallorca.

Inici: 1999. **Fi:** 2000.

Títol: Programa de vigilància radiològica ambiental: Red densa.

Investigador: CASAS AMETLLER, Montserrat.

Departament: Física.

Empresa/Administració: Consejo de Seguridad Nuclear.

Inici: 1991. **Fi:** 2000.

Títol: Revegetació de les dunes de Es Trocadors-Es Pujols (Formentera). Quarta fase.

Investigador: LLORENS GARCIA, Leonard.

Departament: Biologia.

Empresa/Administració: GESA.

Inici: 2000. **Fi:** 2000.

Títol: Atlas de los hábitats naturales y seminaturales de España.

Investigador: LLORENS GARCIA, Leonard.

Departament: Biologia.

Empresa/Administració: TRAGSA.

Inici: 1999. **Fi:** 2002.

Títol: Determinación de técnicas para la purificación de Plomo y el eutéctico plomo-bismuto fundidos y diseño conceptual de sistemas de purificación en un amplificador de energía.

Investigador: [BERGUEIRO LÓPEZ, José R.](#)

Departament: Química.

Empresa/Administració: LAESA.

Inici: 1999. **Fi:** 2001.

Títol: Determinació de conductivitats tèrmiques de blocs de construcció.

Investigador: [CESARI ALIBERCH, Eduard.](#)

Departament: Física.

Empresa/Administració: Asociación de Fabricantes y Empresas Auxiliares de la Construcción de Baleares.

Inici: 1999. **Fi:** 2000.

Títol: Evaluación de información científica y en la preparación de informes de experto preclínicos de diversos productos.

Investigador: [GARCÍA SEVILLA, Jesús A.](#)

Departament: Biología.

Empresa/Administració: IPSEN PHARMA, S.A.

Inici: 2000. **Fi:** 2001.

Títol: Estudi de l'impacte dels tractaments contra la processonària del pi a Balears.

Investigador: [ALEMANY FERRÀ, Aina](#) i [MIRANDA CHUECA, Miguel Ángel.](#)

Departament: Biología.

Empresa/Administració: Conselleria d'Economia, Agricultura, Comerç i Indústria.

Inici: 1999. **Fi:** 2000.

Títol: Caracterització de la varietat vitícola malvasia de Banyalbufar, el seu fruit i els seus vins, i el sanejament d'àpex caulinars mitjançant el seu cultiu in vitro.

Investigador: [MEDRANO GIL, Hipólito.](#)

Departament: Biología.

Empresa/Administració: Conselleria d'Agricultura i Pesca.

Inici: 2000. **Fi:** 2002.

Títol: Estat actual del litoral marí del municipi d'Alcúdia.

Investigador: [MOYÀ NIELL, Gabriel.](#)

Departament: Biología.

Empresa/Administració: Ajuntament d'Alcúdia.

Inici: 2000. **Fi:** 2000.

Fundació Universitat-Empresa

Títol: Efecte al preu de l'impost turístic
Investigador: [AGUILÓ PÉREZ, Eugeni](#).
Departament: Economia i Empresa.
Empresa/Administració: Conselleria de Turisme.

Títol: Despesa turística 1999.
Investigador: [AGUILÓ PÉREZ, Eugeni](#).
Departament: Economia i Empresa.
Empresa/Administració: Conselleria de Turisme / Conselleria d'Economia, Comerç i Indústria.

Títol: Índex de preus turístics de 1999.
Investigador: [AGUILÓ PÉREZ, Eugeni](#).
Departament: Economia i Empresa.
Empresa/Administració: Conselleria d'Economia, Comerç i Indústria.

Títol: Índex de preus turístics de 2000.
Investigador: [AGUILÓ PÉREZ, Eugeni](#).
Departament: Economia i Empresa.
Empresa/Administració: Institut Balear de Promoció del Turisme.

Títol: Tribunal de Defensa de la Competència.
Investigador: [AGUILÓ PÉREZ, Eugeni](#).
Departament: Economia i Empresa.
Empresa/Administració: Viajes Iberia, SA.

Títol: Despesa turística de 2000.
Investigador: [AGUILÓ PÉREZ, Eugeni](#).
Departament: Economia i Empresa.
Empresa/Administració: Conselleria de Turisme.

Títol: Input/output.
Investigador: [AGUILÓ PÉREZ, Eugeni](#).
Departament: Economia i Empresa.
Empresa/Administració: Conselleria d'Economia, Comerç i Indústria.

Títol: Condicions metereològiques d'Eivissa.
Investigador: ALONSO OROZA, Sergio.
Departament: Física.
Empresa/Administració: Banco Vitalicio de España.

Títol: Avaluació externa dels programes URBAN.
Investigador: BALLESTER BRAGE, Lluís; FERRÀ, P.; OLIVER, J. L.; PASCUAL, A.; PASCUAL, B.; TOUZA, C.
Departament: Ciències de l'Educació.
Empresa/Administració: Consorci Mirall Palma-Centre.

Títol: Avaluació final (Ex-Post) dels programes URBAN.
Investigador: BALLESTER BRAGE, Lluís; FERRÀ, P.; OLIVER, J. L.; PASCUAL, A.; PASCUAL, B.; TOUZA, C.
Departament: Ciències de l'Educació.
Empresa/Administració: Consorci Mirall Palma-Centre.

Títol: Enquesta de salut.
Investigador: BALLESTER BRAGE, Lluís; ORTE SOCIAS, C.; PASCUAL, B.
Departament: Ciències de l'Educació.
Empresa/Administració: Conselleria de Sanitat i Consum del Govern de les Illes Balears.

Títol: Estudi social (necessitats socials i formatives).
Investigador: BALLESTER BRAGE, Lluís; ORTE SOCIAS, C.; PASCUAL, A.
Departament: Ciències de l'Educació.
Empresa/Administració: Ajuntament de Capdepera.

Títol: Avaluació del pla d'actuació LEADER II a Menorca.
Investigador: BENNÀSAR ROIG, Antoni.
Departament: Biologia.
Empresa/Administració: Conselleria d'Agricultura i Pesca.

Títol: Avaluació del pla d'actuació LEADER II.
Investigador: BENNÀSAR ROIG, Antoni.
Departament: Biologia.
Empresa/Administració: Conselleria d'Agricultura i Pesca.

Títol: Impacte ambiental a Son Quint.
Investigador: [BENNÀSAR ROIG, Antoni](#).
Departament: Biologia.
Empresa/Administració: Conselleria d'Agricultura i Pesca.

Títol: Vídeo digital Tiempo Real.
Investigador: [BIBILONI COLL, Antoni](#).
Departament: Ciències Matemàtiques i Informàtica.
Empresa/Administració: ADECEF, SA.

Títol: CD Rom literatura. Autor: Pere Rosselló.
Investigador: [BIBILONI COLL, Antoni](#).
Departament: Ciències Matemàtiques i Informàtica.
Empresa/Administració: Consorci pel Foment de l'Ús de la Llengua Catalana.

Títol: Accidents domèstics infantils.
Investigador: [BIBILONI COLL, Antoni](#).
Departament: Ciències Matemàtiques i Informàtica.
Empresa/Administració: Fundació Balear per a la Prevenció de Riscos.

Títol: Potestat normativa de la CAIB en matèria de transports.
Investigador: [BLASCO ESTEVE, Avel.lí](#).
Departament: Dret Públic.
Empresa/Administració: Associació Sindical d'Autònoms del Taxi de Mallorca.

Títol: Avantprojecte de Llei Patrimonial de la CAIB.
Investigador: [BLASCO ESTEVE, Avel.lí](#).
Departament: Dret Públic.
Empresa/Administració: Conselleria de Presidència.

Títol: Sostenibilitat turística de les Illes Balears.
Investigador: SALOM BLÁZQUEZ, Macià.
Departament: Ciències de la Terra.
Empresa/Administració: Centre d'Investigació i Tecnologies Turístiques de les Illes Balears.

Títol: Elaboració especificacions de CD-Roms.
Investigador: BORNAS AGUSTÍ, Francesc X.
Departament: Psicologia.
Empresa/Administració: Fundació Balear per a la Prevenció de Riscos.

Títol: Fòbia de volar en avió.
Investigador: BORNAS AGUSTÍ, Francesc X.
Departament: Psicologia.
Empresa/Administració: AENA.

Títol: Inventari patrimoni ferroviari.
Investigador: BRUNET ESTARELLAS, Pere J.
Departament: Ciències de la Terra.
Empresa/Administració: Serveis Ferroviaris de Mallorca.

Títol: Parc arqueològic del puig de Sa Morisca.
Investigador: CALVO TRIAS, Manuel A.
Departament: Ciències Històriques i Teoria de les Arts.
Empresa/Administració: Ajuntament de Calvià.

Títol: Son Reus 2000.
Investigador: CERDÀ MARTÍN, Víctor.
Departament: Química.
Empresa/Administració: Consell de Mallorca.

Títol: Àcids húmics de les aigües de Mallorca.
Investigador: COSTA TORRES, Antoni.
Departament: Química.
Empresa/Administració: Nalco Española, SA.

Títol: Assessoria edicions digitals.
Investigador: [GALLI GRANADA, Ricardo](#).
Departament: Ciències Matemàtiques i Informàtica.
Empresa/Administració: ATLAS IAP, SL.

Títol: Mesures de gestió de la demanda.
Investigador: [GARCÍA GARCÍA, Celso](#).
Departament: Ciències de la Terra.
Empresa/Administració: Conselleria de Medi Ambient.

Títol: Base de dades valoració de motors.
Investigador: [GARCIA MORENO, Eugeni](#).
Departament: Física.
Empresa/Administració: Conselleria d'Economia, Comerç i Indústria.

Títol: Informe dels camps de golf a Mallorca.
Investigador: [GRIMALT GELABERT, Miquel](#).
Departament: Ciències de la Terra.
Empresa/Administració: Universidad de Córdoba.

Títol: Projecte Patter.
Investigador: [GRIMALT GELABERT, Miquel](#).
Departament: Ciències de la Terra.
Empresa/Administració: Consell de Mallorca / FODESMA.

Títol: Anàlisi inundacions del vessant marítim de Lluçmajor.
Investigador: [GRIMALT GELABERT, Miquel](#).
Departament: Ciències de la Terra.
Empresa/Administració: Conselleria de Medi Ambient.

Títol: Assessoraments en Dret Europeu.
Investigador: [GUTIÉRREZ GONZÁLEZ, Carlos](#).
Departament: Dret Privat.
Empresa/Administració: Productors Mallorquins de Fruits Secs, SAT.

Títol: Hispalink 2000.

Investigador: JUANEDA SAMPOL, Catalina N.

Departament: Economia i Empresa.

Empresa/Administració: Conselleria d'Hisenda i Pressuposts.

Títol: Formació d'investigació turística.

Investigador: JUANEDA SAMPOL, Catalina N.

Departament: Economia i Empresa.

Empresa/Administració: Centre d'Investigació i Tecnologies Turístiques de les Illes Balears.

Títol: Control i identificació de bacteris a la fermentació làctica.

Investigador: LALUCAT JO, Jordi.

Departament: Biologia.

Empresa/Administració: Purac Bioquímica, SA.

Títol: OCU.

Investigador: LLABRÉS MUT, Francesc.

Departament: Servei de Càlcul i Informatització.

Empresa/Administració: Oficina de Cooperación Universitaria, SA.

Títol: Història econòmica del calçat balear.

Investigador: MANERA ERBINA, Carles.

Departament: Economia i Empresa.

Empresa/Administració: COFLUSA, SA.

Títol: Assessorament i direcció de l'arxiu del COCIN.

Investigador: MANERA ERBINA, Carles.

Departament: Economia i Empresa.

Empresa/Administració: Cambra Oficial de Comerç, Indústria i Navegació.

Títol: Punts de venda de la distribuïdora Rotger.

Investigador: MORATAL OLIVER, Vicenç.

Departament: Economia i Empresa.

Empresa/Administració: Distribuïdora Rotger, SA.

Títol: Fitoplancton tòxic 2000.
Investigador: [MOYÀ NIELL, Gabriel](#).
Departament: Biologia.
Empresa/Administració: Conselleria d'Agricultura i Pesca.

Títol: Vídeo del I Festival Internacional de Poesia.
Investigador: [OLIVER RIBAS, Miquel](#).
Departament: Servei de Recursos Audiovisuals.
Empresa/Administració: Consell de Mallorca.

Títol: Adecuació mediambiental, 3a fase.
Investigador: [OLIVER TROBAT, Miquel](#).
Departament: Ciències de l'Educació.
Empresa/Administració: AENA.

Títol: Enquesta zona Santa Pagesa.
Investigador: [PALMER POL, Alfons](#).
Departament: Ciències de l'Educació.
Empresa/Administració: Ajuntament de Palma.

Títol: Disseny d'una beguda d'ametlla per a esportistes.
Investigador: [PONS BIESCAS, Antoni](#).
Departament: Biologia Fonamental i Ciències de la Salut.
Empresa/Administració: Productors Balears d'Ametlles i Garroves.

Títol: Canvis nutricionals a la beguda per a esportistes.
Investigador: [PONS BIESCAS, Antoni](#).
Departament: Biologia Fonamental i Ciències de la Salut.
Empresa/Administració: Productors Balears d'Ametlles i Garroves.

Títol: Planificació i desenvolupament d'eines web.
Investigador: [PUIGJANER TREPAT, Ramon](#).
Departament: Ciències Matemàtiques i Informàtica.
Empresa/Administració: Transtools, SA.

Títol: Assessorament jurídic a la Federació d'Entitats Locals de les Illes Balears.

Investigador: RAMIS REBASSA, Lurdes.

Departament: Dret Públic.

Empresa/Administració: Federació d'Entitats Locals de les Illes Balears.

Títol: Forum Sa Nostra 2015.

Investigador: RIERA FONT, Antoni.

Departament: Economia i Empresa.

Empresa/Administració: Caixa de Balears, 'Sa Nostra'.

Títol: Tècniques d'ús per al control de la qualitat de la sobrassada.

Investigador: ROSSELLÓ MATAS, Carme.

Departament: Química.

Empresa/Administració: Procam, SA.

Títol: Anàlisi colorimètric de 360 mostres de sobrassades.

Investigador: ROSSELLÓ MATAS, Carme.

Departament: Química.

Empresa/Administració: Conselleria d'Economia, Comerç i Indústria.

Títol: Sobrassada no embotida.

Investigador: ROSSELLÓ MATAS, Carme.

Departament: Química.

Empresa/Administració: Procam, SA.

Títol: Denominació d'origen de l'oli de Mallorca.

Investigador: ROSSELLÓ MATAS, Carme.

Departament: Química.

Empresa/Administració: Conselleria d'Economia, Comerç i Indústria.

Títol: Model digital dels terrenys de les pitiüses.

Investigador: RUIZ PÉREZ, Maurici.

Departament: Laboratori de Sistemes d'Informació Geogràfica.

Empresa/Administració: Conselleria d'Obres Públiques, Habitatge i Transports.

Títol: Creació del MDT de Menorca.
Investigador: RUIZ PÉREZ, Maurici.
Departament: Laboratori de Sistemes d'Informació Geogràfica.
Empresa/Administració: Conselleria d'Obres Públiques, Habitatge i Transports.

Títol: PORN de la península d'Artà.
Investigador: RUIZ PÉREZ, Maurici.
Departament: Laboratori de Sistemes d'Informació Geogràfica.
Empresa/Administració: Conselleria de Medi Ambient.

Títol: Formació i inserció.
Investigador: SALVÀ MUT, Francesca.
Departament: Ciències de l'Educació.
Empresa/Administració: Consorci Mirall Palma Centre.

Títol: Estudi de la situació i demanda dels joves d'Artà.
Investigador: SALVÀ MUT, Francesca.
Departament: Ciències de l'Educació.
Empresa/Administració: Ajuntament d'Artà.

Títol: Nombre de passatgers arribats a les Illes Balears.
Investigador: SASTRE ALBERTÍ, Antoni.
Departament: Economia i Empresa.
Empresa/Administració: Conselleria d'Hisenda i Pressuposts.

Títol: Projecte Cornell II.
Investigador: SASTRE ALBERTÍ, Francesc.
Departament: Economia i Empresa.
Empresa/Administració: Sol Melià, SA.

Títol: Estudi de mercat.
Investigador: SASTRE ALBERTÍ, Francesc.
Departament: Economia i Empresa.
Empresa/Administració: Ajuntament de Montuïri.

Títol: Màster de Gestió d'Activitats i Recursos Turístics.
Investigador: [SASTRE ALBERTÍ, Francesc](#).
Departament: Economia i Empresa.
Empresa/Administració: UNA-UNIAO de Negocios e Administraçao LTDA.

Títol: Estudi impacte econòmic de l'aeroport de Palma.
Investigador: [SASTRE ALBERTÍ, Francesc](#).
Departament: Economia i Empresa.
Empresa/Administració: AENA.

Títol: Turisme nacional arriat amb transport regular.
Investigador: [SEGUÍ LLINÀS, Miquel](#).
Departament: Ciències de la Terra.
Empresa/Administració: Institut Balear de Promoció del Turisme.

Títol: Disseny d'un circuit microscòpic d'aplicació específica.
Investigador: [SEGURA FUSTER, Jaume](#).
Departament: Física.
Empresa/Administració: Robot, SA.

Títol: Diagnòstic i seguiment dels mercats turístics.
Investigador: [SERRA CANTALLOPS, Antoni](#).
Departament: Economia i Empresa.
Empresa/Administració: Centre d'Investigació i Tecnologies Turístiques de les Illes Balears.

Títol: Assessorament i assistència tècnica en informàtica.
Investigador: [SERRA CIFRE, Bartomeu](#).
Departament: Servei de Càlcul i Informatització.
Empresa/Administració: Serveis Telemàtics de Balears, SL.

Títol: Consultoria tecnològica a la Confederació d'Associacions Empresarials de Balears.
Investigador: [SERRA CIFRE, Bartomeu](#).
Departament: Servei de Càlcul i Informatització.
Empresa/Administració: Confederació d'Associacions Empresarials de Balears.

Títol: Actualització i manteniment pàgina Mediweb.
Investigador: SUREDA NEGRE, Jaume.
Departament: Vicerektorat d'Estudiants i Relacions Institucionals.
Empresa/Administració: Caixa de Balears, 'Sa Nostra'.

Títol: Diagnòstic EBEA.
Investigador: SUREDA NEGRE, Jaume.
Departament: Vicerektorat d'Estudiants i Relacions Institucionals.
Empresa/Administració: Conselleria de Medi Ambient.

Títol: Borsí d'interins.
Investigador: SUREDA NEGRE, Jaume.
Departament: Vicerektorat d'Estudiants i Relacions Institucionals.
Empresa/Administració: Conselleria de Funció Pública i Interior.

Títol: Caracterització microbiològica del procés de compostatge.
Investigador: TINTORÉ SUBIRANA, Joaquim.
Departament: Física.
Empresa/Administració: TIRME, SA.

Títol: Sèries temporals de temperatura.
Investigador: TINTORÉ SUBIRANA, Joaquim.
Departament: Física.
Empresa/Administració: MEC / DGESIC.

Títol: Situació jurídica del lloc de Jornets.
Investigador: TORRES LANA, José A.
Departament: Dret Privat.
Empresa/Administració: Ajuntament de Sencelles.

Títol: Fertilització de la patata.
Investigador: VADELL ADROVER, Jaume.
Departament: Biologia.
Empresa/Administració: Conselleria d'Agricultura i Pesca.

Títol: Conversió del sistema agrari.
Investigador: VADELL ADROVER, Jaume.
Departament: Biologia.
Empresa/Administració: Caixa de Balears, 'Sa Nostra'.

Títol: Assistència tècnica Cecomasa-Limit.
Investigador: VALVERDE GARCIA, Llorenç.
Departament: Ciències Matemàtiques i Informàtica.
Empresa/Administració: Cecomasa-Limit.

Títol: Situació dels sistemes d'informació i comunicació.
Investigador: VALVERDE GARCIA, Llorenç.
Departament: Ciències Matemàtiques i Informàtica.
Empresa/Administració: Consell de Mallorca.

Títol: Pla estratègic.
Investigador: VALVERDE GARCIA, Llorenç.
Departament: Ciències Matemàtiques i Informàtica.
Empresa/Administració: Consell de Mallorca.

Institut Mediterrani d'Estudis Avançats (IMEDEA)

Títol: Modificación de programa de análisis de imagen de otolitos.

Investigador: [MORALES NIN, Beatriu](#).

Departament: Institut Mediterrani d'Estudis Avançats (IMEDEA).

Empresa/Administració: INFAIMON, SL.

Inici: 1996. **Fi:** 2001.

Títol: Col·laboració en l'organització d'activitats relacionades amb la història natural.

Investigador: [ALCOVER TOMÀS, Josep A.](#)

Departament: Institut Mediterrani d'Estudis Avançats (IMEDEA).

Empresa/Administració: Societat d'Història Natural de les Balears.

Inici: 1998. **Fi:** 2001.

Títol: Excavació de la cova d'es Moro i cova Estreta a Pollença.

Investigador: [ALCOVER TOMÀS, Josep A.](#)

Departament: Institut Mediterrani d'Estudis Avançats (IMEDEA).

Empresa/Administració: Consell de Mallorca.

Inici: 1999. **Fi:** 2000.

Títol: Estudio de poblaciones de aves marinas en las islas Columbretes y en los islotes de Benidorm.

Investigador: [ORO DE RIVAS, Daniel](#).

Departament: Institut Mediterrani d'Estudis Avançats (IMEDEA).

Empresa/Administració: Generalitat Valenciana.

Inici: 1999. **Fi:** 2001.

Títol: Elaboració de fitxes per les LIC's (cavitats càrstiques de les Balears).

Investigador: [JAUME LLABRÉS, Damià](#).

Departament: Institut Mediterrani d'Estudis Avançats (IMEDEA).

Empresa/Administració: Conselleria de Medi Ambient.

Inici: 1996. **Fi:** 2001.

Títol: El seguimiento del efecto reserva sobre la pesca y el rendimiento pesquero en las reservas marinas de las islas Baleares.

Investigador: [MORALES NIN, Beatriz](#).

Departament: Institut Mediterrani d'Estudis Avançats (IMEDEA).

Empresa/Administració: Conselleria d'Agricultura i Pesca.

Inici: 2000. **Fi:** 2004.

Títol: Excavació i estudi dels materials exhumats de la Cova des Moro (4a fase).

Investigador: [ALCOVER TOMÀS, Josep A.](#)

Departament: Institut Mediterrani d'Estudis Avançats (IMEDEA).

Empresa/Administració: Consell de Mallorca.

Inici: 2000. **Fi:** 2004.

Títol: Bases científicas para el desarrollo sostenible de la acuicultura costera en Filipinas.

Investigador: [DUARTE QUESADA, Carlos](#).

Departament: Institut Mediterrani d'Estudis Avançats (IMEDEA).

Empresa/Administració: Agencia Española de Cooperación Internacional.

Inici: 2000. **Fi:** 2001.

Títol: Estudio sobre indicadores y criterios de valoración de los espacios marinos susceptibles de ser propuestos como LICs en la Comunidad Valenciana.

Investigador: [DUARTE QUESADA, Carlos](#).

Departament: Institut Mediterrani d'Estudis Avançats (IMEDEA).

Empresa/Administració: Generalitat de València.

Inici: 2000. **Fi:** 2000.

Títol: Evaluación del efecto reserva y de las medidas de control de fondo en la dinámica poblacional de *Posidonia Oceánica* en el Parque Nacional de Cabrera.

Investigadors: [DUARTE QUESADA, Carlos](#); [TINTORÉ SUBIRANA, Joaquim](#).

Departament: Institut Mediterrani d'Estudis Avançats (IMEDEA).

Empresa/Administració: TIRME.

Inici: 2000. **Fi:** 2000.

Títol: Evaluación del efecto reserva y de las medidas de control de fondo en la dinámica poblacional de *Posidonia Oceánica* en el Parque Nacional de Cabrera.

Investigadors: [DUARTE QUESADA, Carlos](#); [TINTORÉ SUBIRANA, Joaquim](#).

Departament: Institut Mediterrani d'Estudis Avançats (IMEDEA).

Empresa/Administració: TIRME.

Inici: 2000. **Fi:** 2000.

Títol: Demografía, hábitat y ciclo vital de *Margaritifera auricularia*.
Investigadors: [RUÍZ DE ALTABA, Cristian](#).
Departament: Institut Mediterrani d'Estudis Avançats (IMEDEA).
Empresa/Administració: Ministeri de Medi Ambient.
Inici: 1999. **Fi:** 2001.

Títol: Efecto del riego sobre la ecofisiología, la producción y la calidad del fruto y el vino.
Investigadors: [MEDRANO GIL, Hipólito](#).
Departament: Institut Mediterrani d'Estudis Avançats (IMEDEA).
Empresa/Administració: Herederos de Ribas, SA.
Inici: 1995. **Fi:** 2000.

Títol: Caracterización microbiológica del proceso de compostage.
Investigadors: [LALUCAT JO, Jordi](#).
Departament: Institut Mediterrani d'Estudis Avançats (IMEDEA).
Empresa/Administració: TIRME.
Inici: 1999. **Fi:** 2000.

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ÍNDEX D'ABREVIACIONS

Aj. EU: Ajudant/a d'Escola Universitària
Aj. U: Ajudant/a d'Universitat
AGR: Programa nacional d'investigació i desenvolupament agrari
ALI: Programa nacional de tecnologia d'aliments
AMB: Programa nacional d'I+D en medi ambient
ANT: Programa nacional d'investigació a l'Antàrtida.
As.: Associat/da
B: Becari/ària
B (reinc.): Becari/ària postdoctoral de reincorporació
BIO: Programa nacional de biotecnologia
C: Col·laborador/a
CEU: Catedràtic/a d'Escola Universitària
CICYT: Comissió Interministerial de Ciència i Tecnologia
CLI: Programa nacional d'I+D sobre el clima
CSIC: Consell Superior d'Investigacions Científiques
CU: Catedràtic/a d'Universitat
DGES: Direcció General d'Ensenyament Superior
DGESIC: Direcció General d'Ensenyament Superior i Investigació Científica
DGICYT: Direcció General d'Investigació Científica i Tècnica
EJC: Equivalents de Jornada Completa
FD: Fons FEDER
FIS: Fons d'Investigació Sanitària
HID: Programa nacional de recursos hídrics
IMPIVA: Institut per a la Modernització dels Processos Industrials de València
MAR: Programa nacional de ciència i tecnologia marines
MAST: Marine Sciences and Technologies
MAT: Programa nacional de materials
MEC: Ministeri d'Educació i Ciència
PB: Programa bàsic (Programa sectorial de promoció general del coneixement)
PETRI: Projecte d'Estímul a la Transferència de Resultats d'Investigació
PM: Programa de medicina
PS: Programa sectorial
P1: Projectes d'investigació bàsica no orientada
P2: Projectes d'investigació bàsica orientada
P3: Projectes d'investigació aplicada
P4: Projectes d'I+D en cooperació
RACE: Research and Technology Development in Advanced Communications Technologies
SC: Programa sectorial d'I+D agrari i alimentari del MAPA
SM: Projecte simplificat d'investigació en biomedicina
Tèc.: Tècnic
TEL: Programa nacional d'aplicacions i serveis telemàtics
TEU: Titular d'Escola Universitària
TIC: Programa nacional de tecnologies de la informació i de les comunicacions
TU: Titular d'Universitat
UE: Unió Europea
UNESCO: United Nations Educational Scientific and Cultural Organization

