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LISBOA

UNIVERSIDADE
DE LISBOA

FROM LISBON
TO THE WORLD

ULISBOA ATLAS OF RESEARCH UNITS

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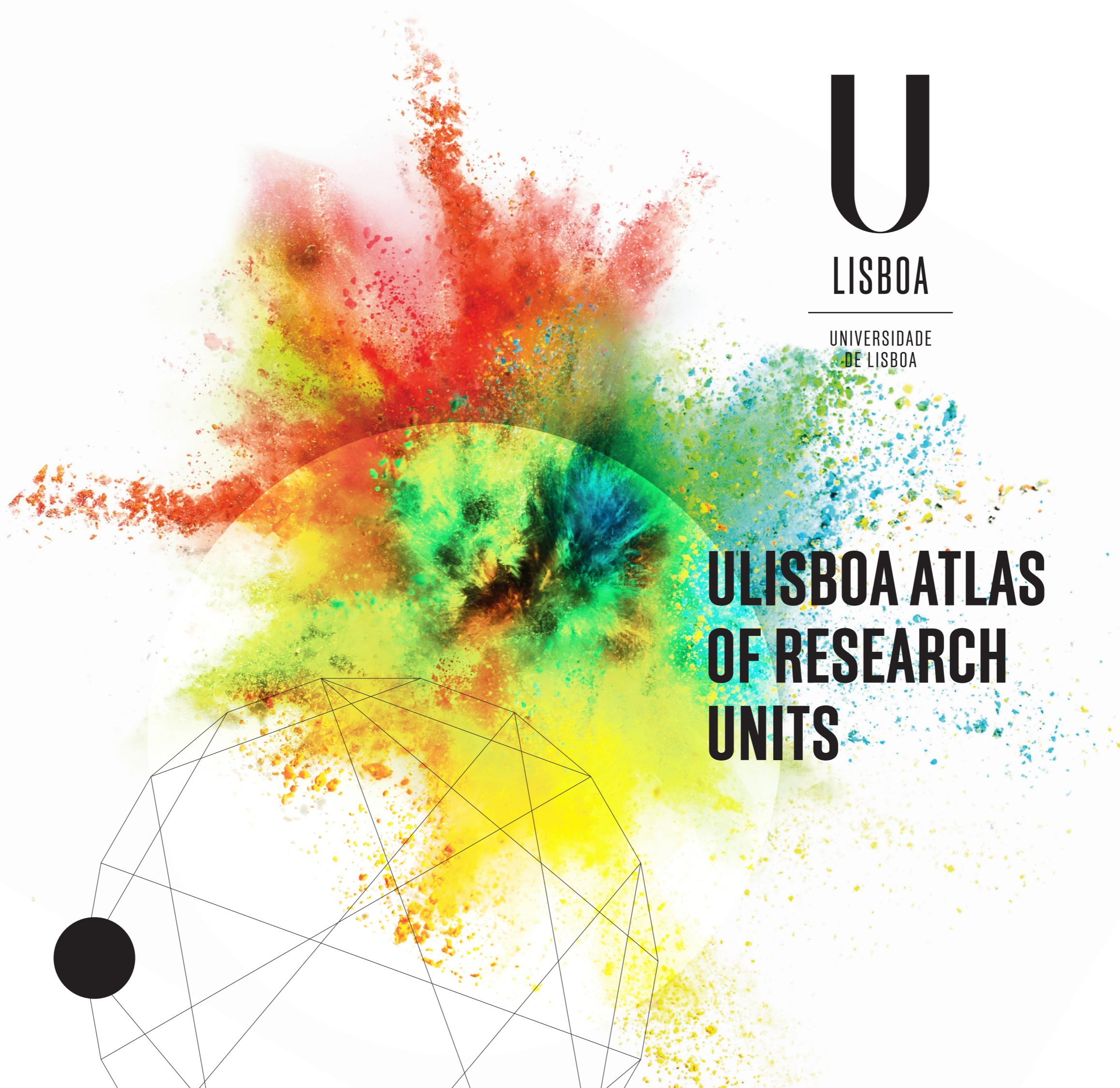
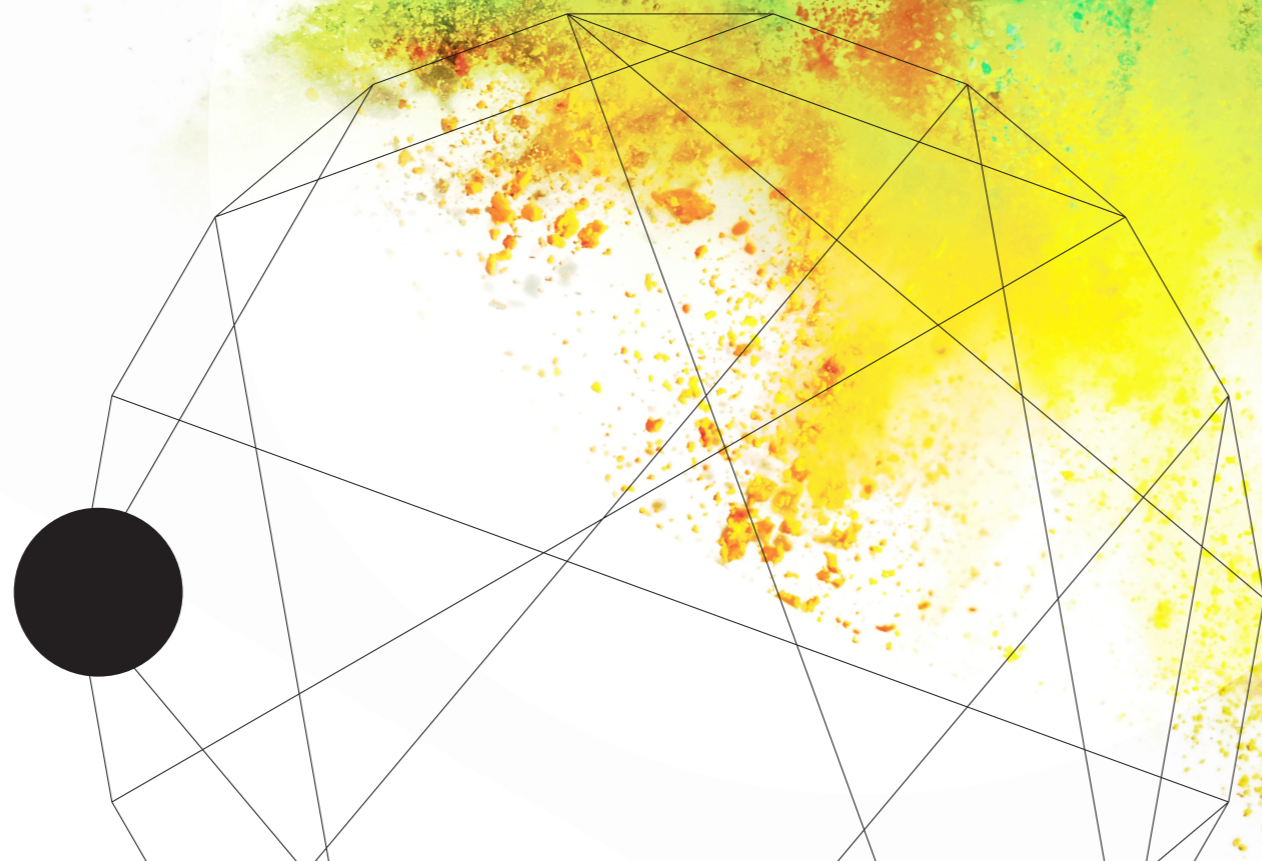
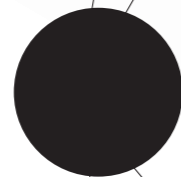


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PREFACE

The ULisboa Atlas of Research Units emphasises the remarkable progress in the scale and nature of research activities at the University of Lisbon. It creates a shared database to cast light on current trends in research topics, building up on the high premium placed on synergies that provide a fertile ground for multiple knowledge based solutions. It captures the richness of our scientific areas that fertilize the organic units, the relevance of pursuing fundamental research towards the advancement of knowledge, and the importance of cooperation and internationalization to solve global societal problems.

The Atlas also provides valuable insights into future strategic priorities derived from national and European directives towards the adoption of open science, including open access to publications, open research data, open collaboration, citizen science, and others. We therefore need to continue to evolve in reinforcing collaborative agendas to promote economic and social activities with greater added value and to attract competitive European funds, ultimately assuring a sustainable future for all.

This institutional framework of Research Units (and Associate Laboratories) at the University of Lisbon, with statute given by the Fundação para a Ciência e a Tecnologia after a competitive call for an external, independent and international evaluation is further communicating with Research Infrastructures, Collaborative Laboratories, Technological Centres, as well as with Interdisciplinary Networks and Colleges, key drivers of innovation and national and international cooperation with academia, industry and the society at large. They establish the right connection to the business sector and the communities in which they operate, which allows them to combine fundamental research

with collaborative agendas tackling major societal challenges in line with the sustainable development goals. Together they have also been instrumental to provide highly qualified employment and advanced training to future generations.

We would like to thank all of those who have contributed to build this shared database as the ULisboa Atlas of Research Units will provide an invaluable backdrop towards important debates to further develop and promote a forward-looking vision for research and innovation at the University of Lisbon.

This Atlas begins with concise infographics of the Research Unit landscape at the University of Lisbon. The 70 Research Units are then presented following grouping by the six broad scientific domains of Agricultural Sciences, Natural Sciences, Medical and Health Sciences, Engineering and Technology Sciences, Social Sciences and Humanities.

The University of Lisbon wishes that this Atlas may foster a better knowledge of the architecture of Research Units propelling them to interdisciplinary research that maximizes excellence, creativity and innovation.

Cecília Rodrigues
Vice-Rector
University of Lisboa

EXECUTIVE SUMMARY

The ULisboa Atlas of Research Units is a much-needed synthesis to know and understand the large diversity of the science system and its architecture, which reflect the commitment to research as a central part of the mission and strategy at the University of Lisbon.

For the preparation of this Atlas, data was obtained from several sources: i) survey conducted in organic Units and research and development (R&D) Units at the University of Lisbon in 2021 (reference date: 31.12.2021); ii) R&D Units websites; iii) FCT webpage; and iv) FCT Portuguese Atlas of Research Units 2022.

The document gives a concise description of the 70 R&D Units evaluated in 2019 by the Fundação para a Ciência e a Tecnologia (FCT) and is organised by 6 broad scientific domains, regarding description, strategic aims, activities and impact.

The R&D Units at University of Lisbon represent 22% of all the units funded by FCT; 34 are rated Excellent, 28 Very Good and 8 Good.

They are distributed between the 18 Schools that comprise the University of Lisbon, with Instituto Superior Técnico hosting 30% (21) of all the R&D Units, followed by Faculdade de Ciências with 20% (14).

The majority of R&D Units fits in the scientific domain of Natural Sciences (33%).

The University of Lisbon and its R&D Units also participate in 19 Associated Laboratories, which correspond to 48% of the national total (40), with 4 of them rated with the maximum grade.

The University of Lisbon hosts 5.345 full time equivalent (FTE) researchers, which represent about 29% of the 18.523 researchers in Portugal considered by FCT. They are found mostly in Natural Sciences (1.871; 35%), followed by

Engineering and Technology Sciences (1.062; 20%). The average dimension of R&D Units at University of Lisbon is of 76 researchers per unit. In 2020-2023, FCT funded the Portuguese R&D Units with about 425 M€ of direct base and programmatic funding. Of that value, about 125 M€ (29% of the national total) were attributed to the University of Lisbon. The funding awarded to each School is highly variable depending on the number of R&D Units and researchers. Instituto Superior Técnico and Faculdade de Ciências together represent 58% of all FCT funding.

Overall, it is important to emphasise that the University of Lisbon plays a central role in the Portuguese research and innovation system, where the R&D Units represent 22% of the total, and researchers and FCT funding reach about 29% of the total.

Research Units at the University of Lisbon promote open science, innovation and knowledge transfer, thus contributing to internationalization and having impact in a knowledge-based society.

OVERALL CHARACTERIZATION

FCT validates the statute of each R&D Unit by organizing evaluation exercises. The evaluation system is based on periodic assessments carried out every 4-5 years by panels of international experts. The evaluation assesses the pluriannual activity reports and strategic plans, complemented with direct contacts with the researchers and the R&D Units within the scope of visits that take place to the units.

As a result of this, a quality score is awarded (Excellent, Very Good and Good) to each R&D Unit, which determines the amount of multi-annual funding to be granted until a new evaluation is carried out. The last evaluation process was completed in 2019, leading to the funding of 312 R&D Units in Portugal.

RESEARCH UNITS AND FCT EVALUATION

The University of Lisbon had 70 R&D Units evaluated in 2019, which represent 22% of all the units funded by FCT in Portugal and 57% (122) in the Lisbon Metropolitan Area. Of that total, 34 were rated with Excellent, 28 with Very Good (31% and 17% of the national total, respectively) and 8 with Good (*figures 1 and 3*).

The University of Lisbon and its R&D Units also participate in 19 Associated Laboratories (annexe 1), which corresponds to 48% of the national total (40 approved in the evaluation process of 2020), with 4 graded with the maximum rating. Following the FCT definition, an Associated Laboratories is an R&D institution or a consortium of institutions established to pursue certain national scientific and technological policy objectives. Associated Laboratories usually consist of research units or institutes from different universities.



Figura 1: FCT Evaluation (2019) of R&D Units

The distribution of the University of Lisbon R&D Units by scientific domain shows that the highest numbers are in Natural Sciences (23; 33%) and the lowest in Agricultural Sciences (3; 4%) (figure 2).

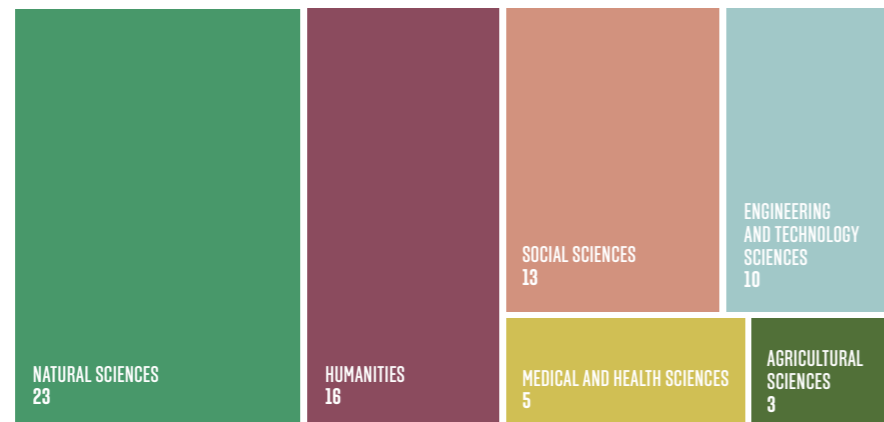


Figure 2: Number of R&D Units by scientific domain

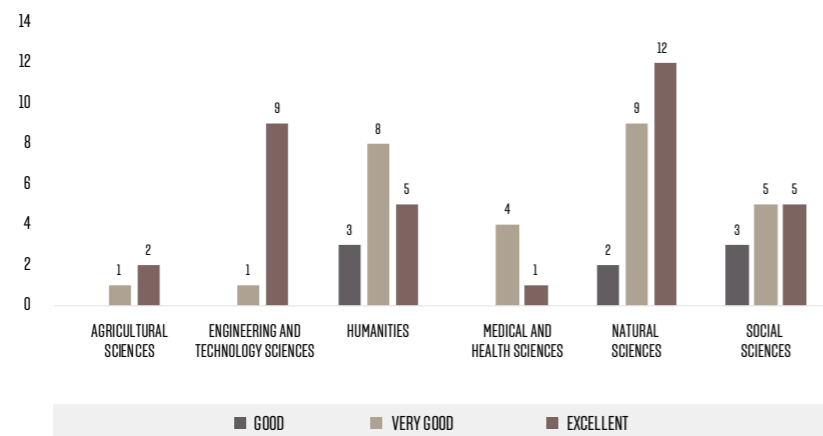


Figure 3: FCT Evaluation (2019) of R&D Units by scientific domain

The R&D Units are spread between the 18 Schools that comprise the University of Lisbon. That distribution shows that Instituto Superior Técnico hosts 30% (21) of all units, followed by Faculdade de Ciências with 20% (14) and Faculdade de Letras with 14% (10). There are 9 Schools with only one R&D Unit (figure 4).

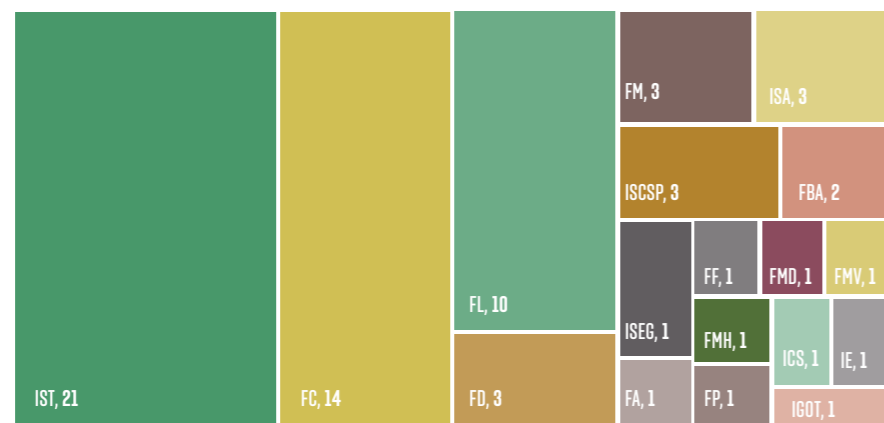


Figure 4: Number of R&D Units by School

FA, Faculdade de Arquitetura; FBA, Faculdade de Belas Artes; FC, Faculdade de Ciências; FD, Faculdade de Direito; FF, Faculdade de Farmácia; FL, Faculdade de Letras; FM, Faculdade de Medicina; FMD, Faculdade de Medicina Dentária; FMH, Faculdade de Motricidade Humana; FP, Faculdade de Psicologia; IE, Instituto de Educação; ICS, Instituto de Ciências Sociais; IGOT, Instituto de Geografia e Ordenamento do Território; ISA, Instituto Superior de Agronomia; ISCSP, Instituto Superior de Ciências Sociais e Políticas; ISEG, Instituto Superior de Economia e Gestão; IST, Instituto Superior Técnico.

RESEARCHERS

The 5.345 FTE Researchers reported as integrated in R&D Units at the University of Lisbon represent about 29% of the 18.523 researchers in Portugal considered by FCT, and 70% of those working in the Lisbon Metropolitan Area. They are found mostly in Natural Sciences (1.871; 35%), followed by Engineering and Technology Sciences (1.062; 20%). These two scientific domains together represent more than half (55%) of all the researchers at the University of Lisbon (figure 5).

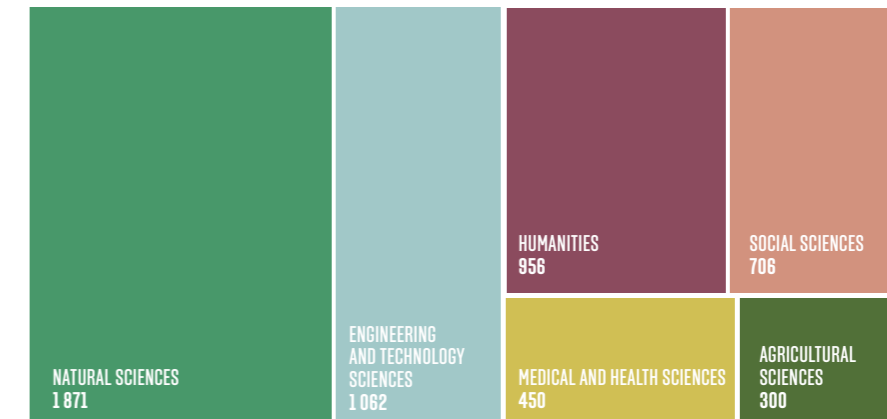


Figure 5: FTE Researchers by scientific domain

The average dimension of R&D Units at the University of Lisbon is 76 researchers per unit, ranging from 54 researchers in Social Sciences to 106 researchers in Engineering and Technology Sciences domains (figure 6).

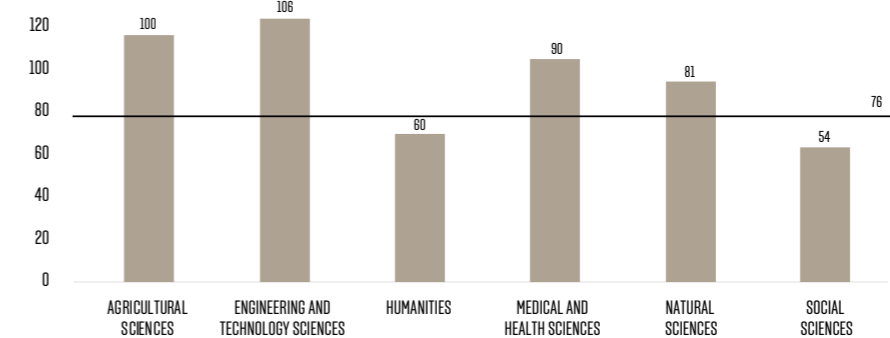


Figure 6: Average number of FTE Researchers by scientific domain

In the different Schools of the University of Lisbon, the number of FTE Researchers varies largely between 46 in Faculdade de Medicina Dentária and 1.749 in Instituto Superior Técnico (figure 7). The average number of researchers per School is 297.

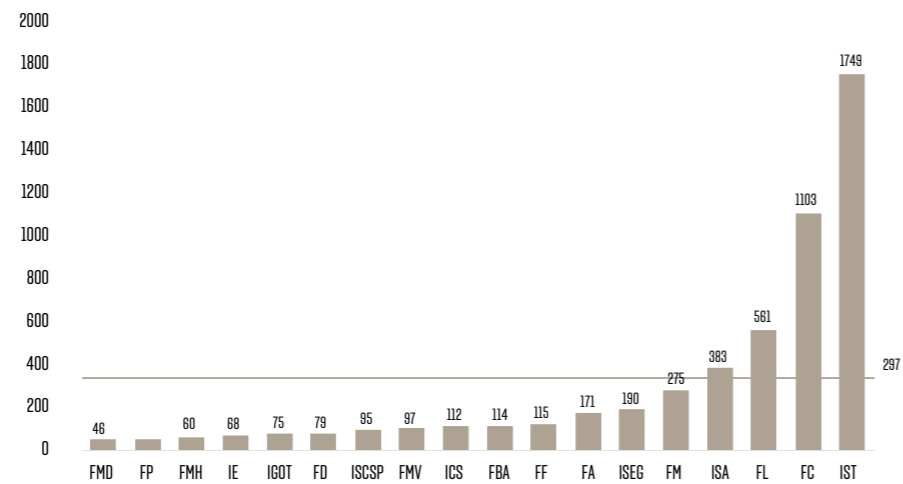


Figure 7: FTE Researchers by School

FUNDING

In 2020-2023, FCT funded the Portuguese R&D units with about 425 M€ of direct base and programmatic funding. Of that value, about 125 M€ (29% of the national total and 73% of the Lisbon Metropolitan Area total) were assigned to ULisboa.

Natural Sciences and Engineering and Technology Sciences are the two most funded scientific domains at the University of Lisbon with over 74 M€, which represents about 59% of the University of Lisbon total (figure 8).

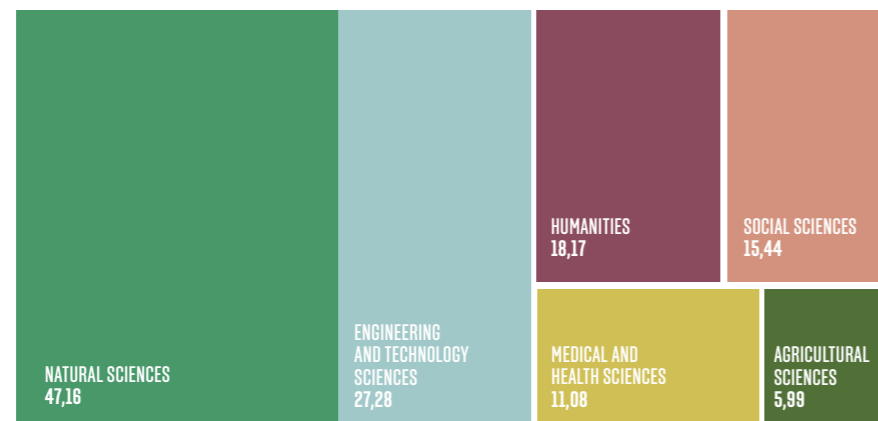


Figure 8: Total funding (M€) by scientific domain

There are significant differences in funding awarded to researchers depending on the scientific domain. The average value is 25,68 k€ in Engineering and Technology Sciences and 19,00 k€ in Humanities (figure 9). The average value granted to a researcher in R&D Units at the University of Lisbon is 23,41 k€.

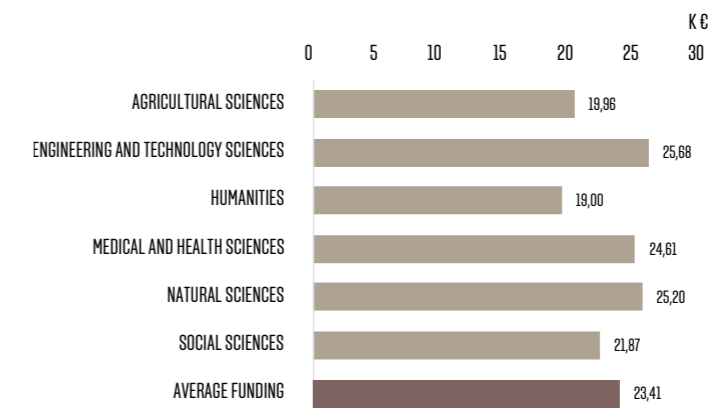


Figure 9: Average funding per FTE Researcher by scientific domain.

The funding awarded to each School at the University of Lisbon varies with the number of research units and researchers, from Instituto Superior Técnico receiving 45,6 M€ (36%) to Faculdade de Medicina Dentária with 0,94 M€ (0,8%). Instituto Superior Técnico and Faculdade de Ciências together received 58% of total FCT funding. The average funding of Schools at the University of Lisbon is 6,95 M€ (figure 10).

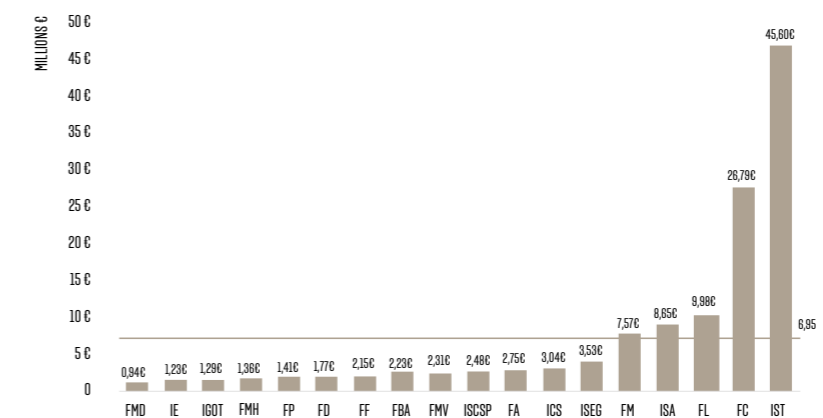
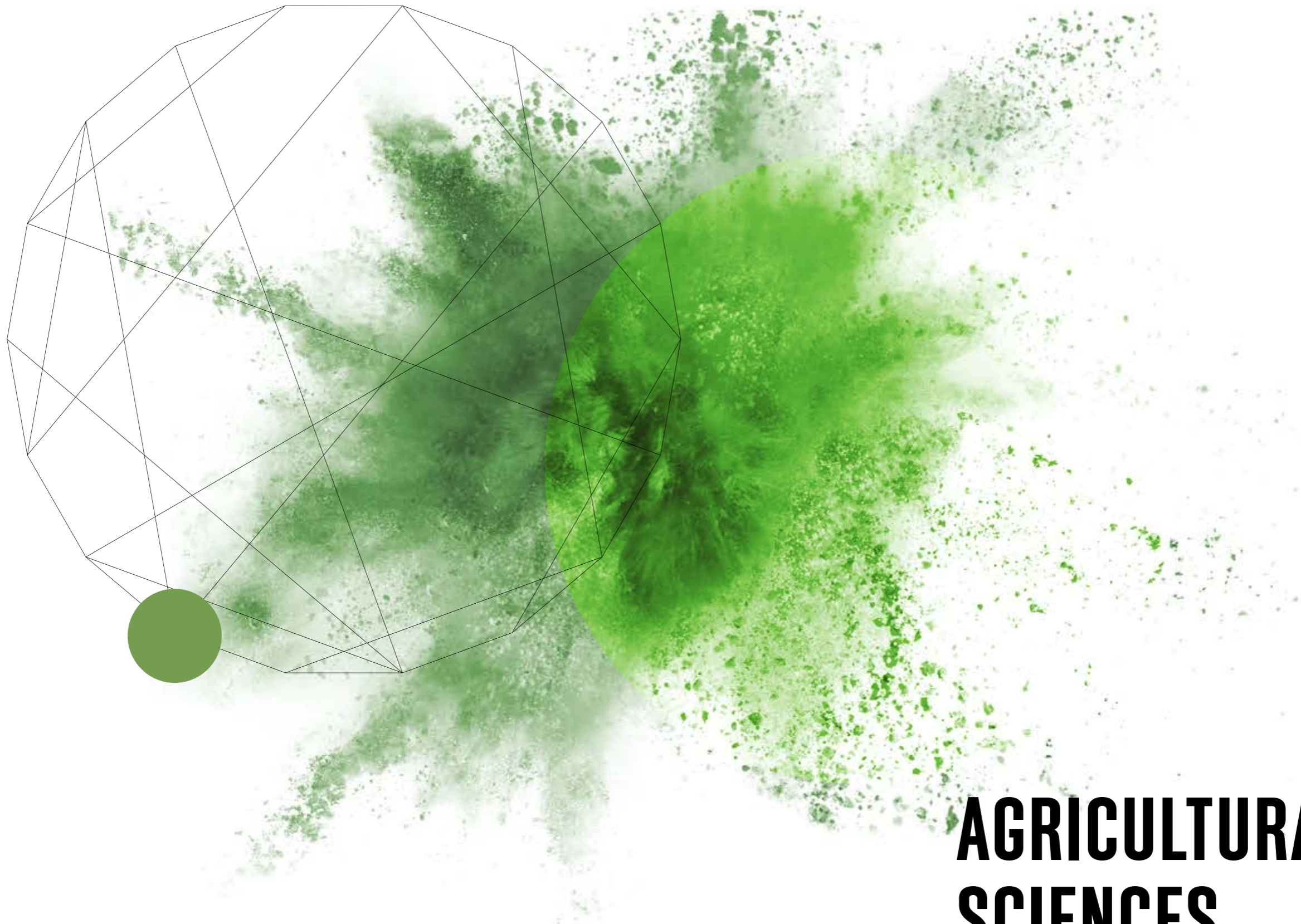


Figure 10: Total FCT funding by School

Overall, the University of Lisbon plays a central role in the Portuguese research and innovation system, where FCT R&D Units represent 22%, and researchers and funding reach 29% of the respective total in Portugal (table 1).

Table 1: Number and share of FCT R&D Units, FTE Researchers and funding by scientific domain in Portugal and at the University of Lisbon

SCIENTIFIC DOMAIN	NUMBER OF R&D UNITS			FTE RESEARCHERS			FUNDING (M€)		
	PORTUGAL	ULISBOA	% ULISBOA	PORTUGAL	ULISBOA	% ULISBOA	PORTUGAL	ULISBOA	% ULISBOA
Agricultural Sciences	15	3	20	952	300	32	22	6	27
Engineering and Technology Sciences	54	10	19	3.147	1.062	34	79	27	34
Humanities	62	16	26	3.313	956	29	67	18	27
Medical and Health Sciences	32	5	16	2.509	450	18	61	11	18
Natural Sciences	63	23	37	4.612	1.871	41	116	47	41
Social Sciences	86	13	15	3.990	706	18	79	15	19
Total	312	70	22	18.523	5.345	29	425	125	29



**AGRICULTURAL
SCIENCES**

CIISA

CENTRE FOR INTERDISCIPLINARY RESEARCH IN ANIMAL HEALTH

CIISA is a member of the Associated Laboratory AL4Animals

EXCELLENT

Evaluation (2019)

97

FTE researchers

2,31 M€

Funding FCT

KEYWORDS

Animal Health, One Health; Animal Science; Food Technology and Safety; Veterinary Medicine; Translational Medicine; Medical Biotechnology.

DESCRIPTION

The Centre for Interdisciplinary Research in Animal Health (CIISA) is the Research Unit of the Faculty of Veterinary Medicine (FMV) of the University of Lisbon. It strives to be internationally recognized for conducting state-of-the-art research in animal and veterinary sciences. Animal Sciences and Animal Health are arguably two major research fields at the core of critical societal concerns of present times. Animal science allows the development of novel sustainable systems to secure and provide plentiful, healthy and nutritious food for an increasing population. Animal Health directly impacts public health and the global economy and, in essence, it is at the base of the research required to sustain Human Health. At a national level, CIISA provides an organization platform that leads and integrates research performed at the major Portuguese institutes and research centers acting in the Animal Sciences and Animal Health fields. Thus, CIISA contributes to develop, densify and qualify the national research system in order to promote its societal impact and the international significance of Portuguese animal and veterinary sciences. CIISA's common research platforms have fostered creativity, talent attraction and the development of scientific careers.

STRATEGIC AIMS

CIISA's research is in line with Europe's increasing concerns with animal health related issues that have considerable impact in the global economy and in public health and also with the general claims for the development of novel environmentally

sustainable systems for animal production. CIISA's labs are organized in two major research groups: "Animal Science and Food Safety" and "Animal Health, One Health". Within these research groups CIISA develops internationally renowned multi-institutional and multidisciplinary research under the concepts of "Sustainable Animal Production" and "One Health". The "Sustainable Animal Production" line relevantly includes nutritional biotechnology, quality and safety of animal products, biodiversity conservation (world-wide and native genetic resources), and animal welfare and wellbeing (in intensive and extensive production systems). The "One Health" approach mainly considers emergent infectious diseases and zoonosis, such as vector-borne diseases, translational medicine, such as oncobiology, and antimicrobial resistance. These contributions to improve animal and human quality of life have brought impacts on animal, veterinary and biomedical sciences at a scientific, economic and social level. In order to optimize the current resources, we aim to improve the organizational and diversity base of CIISA's infrastructure to promote its further integration into a higher hierarchy of national and international networks of excellence.

MAJOR AREAS AND LINES OF RESEARCH

Research is conducted along four major interdisciplinary thematic lines: a) Disease Surveillance, Prevention and Control Towards a Sustainable Animal Health - aiming at the discovery of the biological principles of animal health, animal disease and related biomedicine; b) Clinical Research Towards Novel Diagnosis and Therapeutic Strategies - aiming to integrate research activities



COORDINATOR

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CEF

FOREST RESEARCH CENTRE

CEF is a member of the Associated Laboratory TERRA – Laboratory for Sustainable Land Use and Ecosystem Services.

EXCELLENT

Evaluation (2019)

75

FTE researchers

1,58 M€

Funding FCT

KEYWORDS

Forest Ecosystem Management; Landscape-Scale Fire Management; Riparian Ecosystems; Agroforestry Systems; Ecosystem Services; Forest Products, Bioenergy and Biorefineries.

DESCRIPTION

The Forest Research Centre (CEF) is a research unit of the School of Agriculture (ISA, Instituto Superior de Agronomia), University of Lisbon (ULisboa, Universidade de Lisboa) and a FCT - funded member of the national R&D system. The research is organized in 4 Research Groups: 1) ForEco (Forest ecology); 2) ForProtect (Protection, Restoration & Services in Forests and Agroecosystems); 3) ForChange (Forest ecosystem management under global change; and 4) ForTec (Forest products and biorefineries). CEF develops research, post-graduate education, and outreach activities on issues dealing with forests, agro-forestry systems semi-natural areas, and forest-based industrial chains. CEF shares the EU Forest2020, as well as the European Green Deal vision of forests and semi-natural areas as vital, productive and multifunctional ecosystems, contributing to sustainable development and human well-being, in a healthy environment. CEF is committed to an international perspective on research issues and fosters a diverse academic community. Most of our experimental research is located in Portugal, but it extends to the Mediterranean region and to tropical and sub-tropical regions and encompasses global approaches. CEF has also a strong commitment to doctoral education as a privileged means to foster research and scientific outputs and inter-institutional cooperation. CEF evolves further a structured interaction with stakeholders and society.

STRATEGIC AIMS

CEF has a multidisciplinary strategy that is implemented in 4 research groups in cooperation with other national and international research teams. It is supported by proactive grant seeking by its members and seeks a balance between basic research and applied research to solve problems of stakeholders in the forest and natural resources sector. The strategy focusses on key areas to increase the competitiveness of research and its societal impact as well as to respond to the challenges posed by the European Green Deal. Moreover, it addresses the challenge of reconciling scientific productivity with the demands of teaching and administrative management, especially for younger members. Specifically, CEF's strategic lines involve the production of knowledge: a) in ecology and ecophysiology of forests and agroforestry, fire ecology, fire risk assessment and forest genetics; b) in maintenance and restoration of the ecological quality and natural values of ecosystems that make up the landscape; c) in sustainable management targeting ecosystem services and their valuation as well as the conservation of biodiversity; d) in production and dissemination of tools to improve multifunctional and sustainable forest management, including tools to characterize forest resources, forest models and simulators and decision support methods and systems; and e) in innovative products based on solid wood or on cork, as well as in fractionation and chemical characterization of agroforestry biomass, in order to enhance its full valuation for the production of biofuels, added value chemicals and innovative products in the context of biorefineries.



COORDINATOR

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MAJOR AREAS AND LINES OF RESEARCH

The main areas are structured into 4 CEF research groups: 1) ForEco (Forest ecology) - Ecology and ecophysiology of forests and agroforestry, fire ecology, fire risk assessment and forest genetics; 2) ForProtect (Protection, Restoration & Services in Forests and Agroecosystems) - Protection of ecosystems, ecosystem services and management of river ecosystems; 3) ForChange (Forest ecosystem management under global change) - Forest inventory methodologies based on multiple sources; forest models to deal with complex and diversified forestry and agroforestry systems in climate change scenarios; decision support methods and systems integrating a wide range of ecosystem services; and 4) ForTec (Forest products and biorefineries) - Product innovation and biomass valuation for the production of biofuels, added value chemicals and innovative products in the context of biorefineries.

LEAF

LINKING LANDSCAPE, ENVIRONMENT, AGRICULTURE AND FOOD

LEAF is a member of the Associated Laboratory TERRA – Laboratory for Sustainable Land Use and Ecosystem Services

VERY GOOD

Evaluation (2019)

128

FTE researchers

2,10 M€

Funding FCT

KEYWORDS

Sustainable Agriculture; Agri-Food Value Chains; Land Use Planning; Agrobiodiversity; Circular Economy; Climate Change.

DESCRIPTION

Under a scenario of global climate change, LEAF main research goals are: 1) to design SMART landscapes; 2) to apply strategies for biodiversity conservation, anticipating shifts on critical and endangered species and habitats; 3) to improve sustainable crop productions, focusing on yield and the best management of resources, while aiming at a circular economy; and 4) to develop new processes to obtain healthy, safe, economic, and sensory appealing new and functional foods (and feeds) with impact on health. To address these challenges, aligned with SDG and the European Green Deal, LEAF brings together a multidisciplinary team that produces knowledge with impact in multiple contexts, from temperate and Mediterranean regions to subtropical and tropical countries.

STRATEGIC AIMS

LEAF is composed of 3 Groups: G1) Resource Management & Landscape Architecture (Head: David Paulo Fangueiro); G2) Plant Science & Crop Production (Head: Luís Goulão); and G3) Food & Feed (Head: Anabela Raymundo). And 4 transversal Thematic Lines: LT1) Grapevine & Wine (Head: Joaquim Miguel Costa); LT2) Olive & Olive Oil (Head: Teresa Afonso do Paço); LT3) Tropical Agriculture & Food Value Chains (Head: André M. Almeida); LT4) Green & Blue Infrastructures (Head: Selma B. Pena). From 2020 onwards, the base funding is attributed to: i) 3-year Thematic-Line projects (4), 100k€ funding and a PhD student, internationally peer evaluated,

ii) Yearly exploratory projects (30), 5k€ each, evaluated by senior LEAF members. With this approach, we aim: i) to promote collaboration between LEAF Groups; ii) to identify and reinforce LEAF's competences and lines of research; and iii) to streamline the integration of the different groups in competitive projects of international quality. This dynamism created inter- and intra-group interactions, contributing to cohesion and to a clearer reorganization of LEAF's research areas, increasing the level of publications and internationalization. The center's excellence is our main challenge: to differentiate LEAF as an excellent research center, integrating all areas of research from the territory to food production, its transformation and impact on health, from a perspective of sustainability and circular economy.

MAJOR AREAS AND LINES OF RESEARCH

Research areas cover the entire food value chain, from farm to fork, including landscape planning and soil and water management at the basis, to the impact of food on human and animal health at the end: a) starting from the territory: sustainable, ecological and cultural planning of land use; landscape restoration; mitigation of water scarcity; innovation in soil remediation; mitigation of environmental impacts; new technologies for the treatment of effluents, sediments and organic waste; b) supporting good agricultural practices based on scientific evidence with: genetic bases and underlying molecular mechanisms; ecosystem regulation/support services, aligning resilience and sustainability with a focus on woody species; and c) progressing along



COORDINATOR

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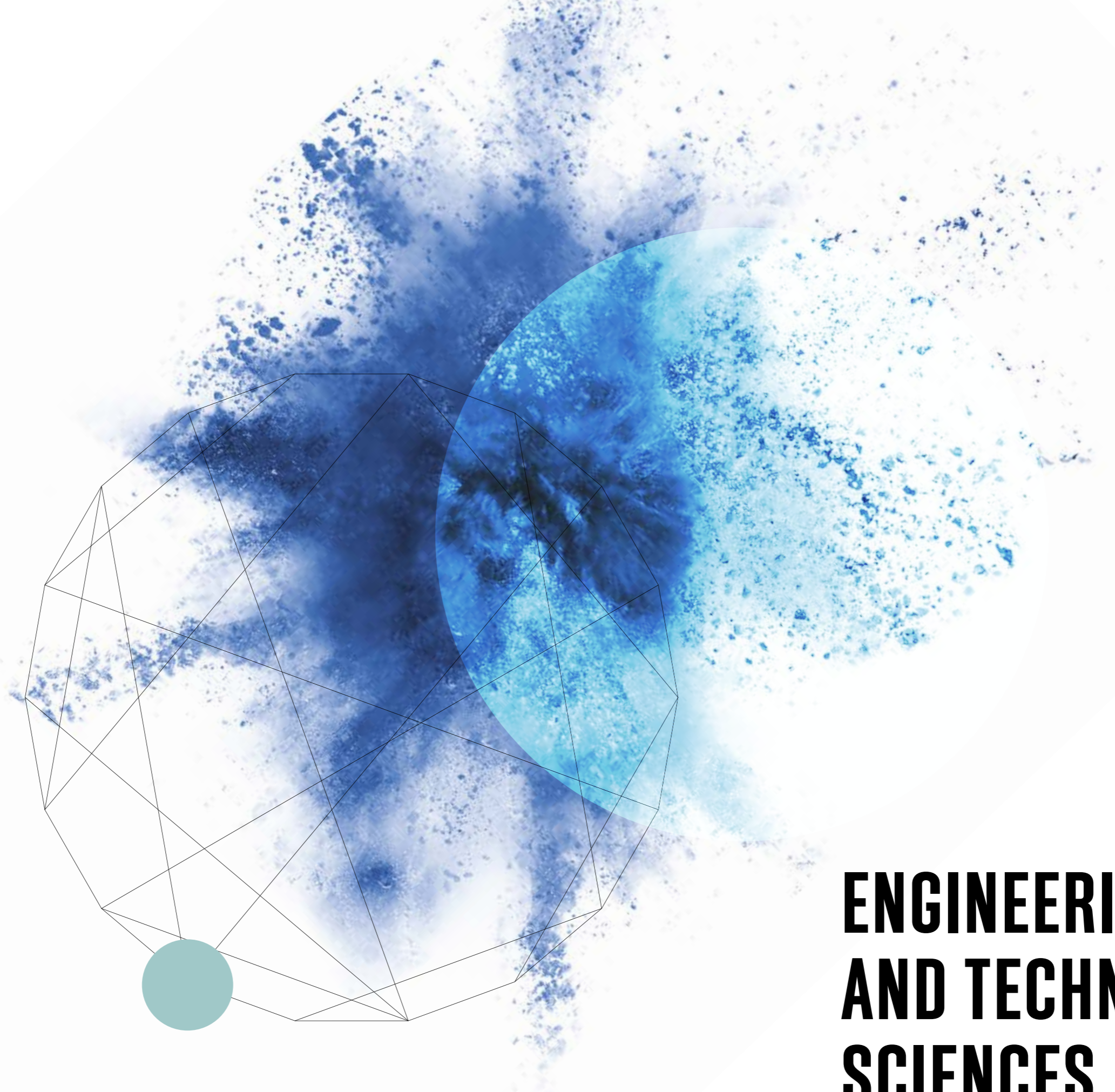
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the value chain, from a circular economy perspective: development of innovative foods for niches and by 3D printing; edible films with bioactives; structured lipids; oenology; fermented foods; and bioactives.





**ENGINEERING
AND TECHNOLOGY
SCIENCES**

IN+ CENTER FOR INNOVATION, TECHNOLOGY AND POLICY RESEARCH

IN+ is a member of LARSyS – Laboratory of Robotics and Engineering Systems.

EXCELLENT

Evaluation (2019)

126

FTE researchers

4,04 M€

Funding FCT

KEYWORDS

(LARSyS): Robotics and Cyber-physical Systems; Engineering Systems; Human Computer Interaction; Socio-technical Systems; Environmental Technologies

DESCRIPTION

The IN+ Centre for Innovation, Technology and Policy Research is a cross-disciplinary research venue, acting since 1998 to enhance the integration of scientific research in technology, innovation and public policies, with the final goal of promoting sustainable applications for science, industry and society. IN+ aims to link basic and applied research to technology development regarding issues of sustainable innovation.

STRATEGIC AIMS

IN+ brings together researchers from various academic backgrounds, who join efforts on the issue of sustainable innovation. It integrates competencies in sustainable energy systems and circular economy, technology policy and socio-economic research. Our Strategy is set to achieve a sustainable society through cooperation with industry and communities fostering a scientific and technological culture. We aim to improve assimilation of knowledge, through an interactive approach that considers the overall value-chains associated with industrial, corporate and social processes. To achieve these goals, we host students and researchers interested in challenges for engineering systems and related policy implications.

MAJOR AREAS AND LINES OF RESEARCH

Optimize energy processes through research on microscale thermal phenomena, multiscale transport phenomena in energy systems and lean-combustion. Promote the development of cities, considering the complex interactions between people, technology, policy and urban infrastructures, to support decision-making in energy and waste management networks. Foster policies to increase significantly the export of engineering products and services from Portugal by deepening dynamics along the value chain of emerging industries.



COORDINATOR

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CERENA CENTER FOR NATURAL RESOURCES AND ENVIRONMENT



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EXCELLENT

Evaluation (2019)

63

FTE researchers

1,78 M€

Funding FCT

KEYWORDS

Energy; Environment; Resources and raw materials; Processes and systems modelling; Circular Economy; Engineering.



cerena.tecnico.ulisboa.pt/

DESCRIPTION

CERENA's goals are to develop research at the highest level of excellence related to the sustainable use of natural resources and other raw materials, including energy, as well as their impact on the environment. CERENA uses an approach that is simultaneously integrative, multidisciplinary and multi-scale, from the molecular level to the planetary scale. Researchers from different scientific fields - Earth, chemical and materials engineering - work together to achieve the same objectives by exploring the synergies that can arise from the combination of different knowledge areas. We are committed to finding solutions for current societal challenges, including those related to climate action, environment, health, raw materials and resource efficiency and, safe, clean and efficient energy, in order to contribute to achieving the goals of sustainable development and the progress towards a circular economy.

STRATEGIC AIMS

The general goals of CERENA are to perform research, to promote industrial leadership and to give response to societal challenges, at a regional, national and international level concerning the sustainability of modern society that are related to the use of resources and the respective impact on the environment. This is achieved by the development of research and innovative solutions in three main fields of action: Raw Materials, Energy and Environment. We have now 10 years of history where we successfully pursue these objectives in-line with the sustainable development goals. Our plan is to keep on the

good track by continuously developing our strong areas of action, while looking for new opportunities in areas of affinity and seeking for new challenges.

MAJOR AREAS AND LINES OF RESEARCH

Our research is oriented towards the sustainable management and efficient use of mineral resources, water, bioresources, wastes and energy, considering the life cycle of products in a circular economy framework. We are also working on projects related with climate change impacts and adaptation, and with protection of environment, health and cultural heritage, and natural hazards. To follow up the ongoing research we need to evolve and grow in line with upcoming scientific, technological, and societal challenges such as those related to the huge amount of data (big data) that requires massive databases and sophisticated tools to extract information that will help us pursuing the sustainable development, in many diverse fields. We also strongly believe that methods for acquiring processing and extract information from imagery data will play a core role in the development of our three main fields of action. So, it is strategic for CERENA to invest in people and equipment for strength and enlarge our capabilities on imaging.

CENTEC

CENTRE FOR MARINE TECHNOLOGY AND OCEAN ENGINEERING



COORDINATOR

Yordan Garbatov

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EXCELLENT

Evaluation (2019)

43

FTE researchers

1,10 M€

Funding FCT

KEYWORDS

Marine environment; Dynamics and Hydrodynamics; Marine structures; Safety and logistics of maritime transportation.

DESCRIPTION

The Centre for Marine Technology and Ocean Engineering (CENTEC) is a Research Centre of IST, has been evaluated and classified by FCT as “Excellent”. CENTEC’s scientific research has been based on the activity of the Groups of Marine Environment, Marine Dynamics and Hydrodynamics, Marine Structures, and Safety and Logistics of Maritime Transportation and Ports, which contribute to the Strategic Areas of Renewable Energies Offshore, Impact of Climate Change, Energy Efficiency, Subsea Engineering and the Blue Economy. CENTEC’s research team is multidisciplinary and multinational, with about half its members of foreign origin (Bangladesh, Brazil, Bulgaria, China, Egypt, India, Iran, Italy, Lebanon, Peru, Russia, Spain, turkey and United Kingdom). The sectors of industry that CENTEC covers are: Ship Design and Operation, Maritime Transportation and Ports, Shipbuilding and Repair, Oil and Gas, Renewable Energies Offshore, Fishing and Aquaculture, Yachts and Recreational Vessels.

STRATEGIC AIMS

CENTEC’s Strategy Research Plan is focused on consolidating its core areas and in developing new research areas that will allow it to continue in the forefront of research in the area of Marine Technology and Ocean Engineering worldwide. The consolidation of the core research areas is done through the research lines of the existing research groups on Marine Environment, Marine Dynamics and Hydrodynamics, Marine and Offshore Structures, and Safety and Logistics of Maritime Transportation and Ports that is

supported by 53 PhD researchers. The plan for strategic development of new research areas is carried out through a series of thematic lines on Renewable Energies Offshore, Energy efficiency in the design and operation of ships, Subsea Production of Oil & Gas, and the Blue Economy, involving from one to all four of the main groups. It is envisaged to give continuity to Advanced Education through research, providing training to PhD students and experience to post-doctorate researchers, in an environment of wide international research cooperation. Dissemination will also be one of the main directions through the publication of journal papers and participation in conferences as well as organizing international conferences and seminars.

MAJOR AREAS AND LINES OF RESEARCH

Marine Environment - Wave Spectral Models and Time Series Models; Probabilistic Models of Wave Parameters; Wave Modelling and Hindcasting; Circulation and Oil Spill Modelling; Oceanographic Instrumentation. Marine Dynamics and Hydrodynamics - Dynamics of Moored Floaters; Nonlinear Motions and Loads; Ship Manoeuvring and Control; Computational Fluid Dynamics; Full-Scale Trials and Model Tests; 3D Virtual Environments in Ship Dynamics. Marine and Offshore Structures - Ultimate Strength; Fatigue Strength; Impact Strength; Structures in Composite Materials; Geometric Modelling of Ship Structures; Offshore and Submarine Structures; Experimental Analysis. Safety and Logistics of Maritime Transportation - Structural Safety; Reliability Based Structural Maintenance; System Reliability and Availability; Maritime Safety and Human Factors; Industrial and Occupational Safety;

Logistics of Maritime Transportation and Port Operations; Economic and Technological Analysis of Maritime Clusters.

CERIS

CIVIL ENGINEERING RESEARCH AND INNOVATION FOR SUSTAINABILITY



COORDINATOR

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Júlio

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ceris.pt

EXCELLENT

Evaluation (2019)

83

FTE researchers

2,74 M€

Funding FCT

KEYWORDS

Hydraulics; Environment and water resources; Systems and management; Transportation systems; Structures and geotechnics; Construction.

DESCRIPTION

CERIS – Civil Engineering Research and Innovation for Sustainability – is an FCT-registered research unit operating in the Civil Engineering area. It is hosted by the Department of Civil Engineering, Architecture and Georesources (DECivil) of Instituto Superior Técnico (IST), University of Lisbon (ULisboa). CERIS was created in 2015 through the merge of CEHIDRO (Centre of Hydraulics, Water Resources and Environment), CESUR (Centre for Urban and Regional Systems) and ICIST (Institute of Structural Engineering, Territory and Construction), 3 units from the 1970s. Their merging in CERIS enhances our comprehensive thematic coverage, in depth and scope, and promotes synergies in the inherently multidisciplinary Built and Natural Environment sector, in a more integrated manner. CERIS is a research unit of IST-ID, The Association of Instituto Superior Técnico for Research and Development. IST-ID is a private not-for-profit institution, which primarily aims to undertake scientific and technological activities, fostering knowledge transfer and promoting the involvement of national and foreign researchers in RD&I and projects in their areas of expertise. The mission and the objectives of CERIS address research, innovation and knowledge transfer needs in the following areas of the Built and Natural Environment sector: Product Development in Civil Engineering Industries; Risk and Safety in the Built and Natural Environment; Rehabilitation of Built and Natural Environments; Response to Natural and Societal Changes.

STRATEGIC AIMS

The research objectives of CERIS are “To create and disseminate scientific knowledge and to promote innovation in the Built and Natural Environment sector through the active involvement in fundamental and applied research, at both national and international levels, and to enhance higher education and research training”. To accomplish these objectives, CERIS is organized in research groups articulated in transversal thematic strands: TS1: Product Development in Civil Engineering Industries; TS2: Risk and Safety in Built and Natural Environments; TS3: Rehabilitation of Built and Natural Environments; TS4: Response to Natural and Societal Changes. research in CERIS is focused on: i) research activities whose main purpose is to improve the competitiveness of civil engineering industries; ii) The reduction of risk to people, the environment, and natural and built heritage that may be affected by the occurrence of extreme events, either natural or due to human activities; iii) ensuring safety, as well as promoting more efficient life cycle management of energy and natural resources; and iv) characterization, mitigation and adaptation to natural and societal changes for a sustainable interaction between man and nature. These are well consolidated and broad research areas whose objectives were set to be pursued in the medium term. It is envisaged that they will be still pursued in 5 years. Main challenges are imposed by exogenous factors, namely the vitality of the construction sector, state support to environmental and territory management policies and re-organization of research units into Associate Laboratories.

MAJOR AREAS AND LINES OF RESEARCH

a) Sensors, intelligent systems and knowledge-based management infrastructure systems, in what concerns improved safety, maintenance and management procedures; b) Improvement of natural treatment systems, through pilot facilities, to define best procedures when facing seasonal interruptions C69 and to determine maximum load capacity; c) Prevention, preparedness and management of risk considering natural hazards and climate change scenarios; d) Enhancement of the spatial functionality, energy efficiency and structural performance of civil infrastructures, including the improvement of seismic and fire resistance; e) Development of urban management models to establish financing systems of urban rehabilitation and public investments, and flexibility and efficiency of the existing transport network infrastructure and management; f) Rehabilitation of natural and transformed water bodies, namely rivers, lakes, reservoirs and aquifers, and improvement of the flexibility and efficiency of the existing water infrastructure; g) Understanding the complexity of natural and societal changes, mainly in what regards adaptation and resilience, competition and mitigation, path dependence, emergence, self-organization and metabolic mechanisms; h) Improving governance, seeking better integration of policies, new flexible planning and management tools; and i) Development of eco-efficient, high-performance and durable cementitious materials and products, for both new construction and rehabilitation.

LASIGE EXTREME COMPUTING



COORDINATOR

Vasco T. Vasconcelos

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www.lasige.pt

EXCELLENT

Evaluation (2019)

30

FTE researchers

1,04 M€

Funding FCT

KEYWORDS

Accessibility and Ageing; Data and Systems Intelligence; Health and Biomedical Informatics; Cyber-Physical Systems; Resilient Distributed and Networked Systems; Reliable Software Systems.

DESCRIPTION

The Centre for Marine Technology and Ocean Engineering (CENTEC) is a Research Centre of IST, has been evaluated and classified by FCT as “Excellent”. CENTEC’s scientific research has been based on the activity of the Groups of Marine Environment, Marine Dynamics and Hydrodynamics, Marine Structures, and Safety and Logistics of Maritime Transportation and Ports, which contribute to the Strategic Areas of Renewable Energies Offshore, Impact of Climate Change, Energy Efficiency, Subsea Engineering and the Blue Economy. CENTEC’s research team is multidisciplinary and multinational, with about half its members of foreign origin (Bangladesh, Brazil, Bulgaria, China, Egypt, India, Iran, Italy, Lebanon, Peru, Russia, Spain, turkey and United Kingdom). The sectors of industry that CENTEC covers are: Ship Design and Operation, Maritime Transportation and Ports, Shipbuilding and Repair, Oil and Gas, Renewable Energies Offshore, Fishing and Aquaculture, Yachts and Recreational Vessels.

STRATEGIC AIMS

CENTEC’s Strategy Research Plan is focused on consolidating its core areas and in developing new research areas that will allow it to continue in the forefront of research in the area of Marine Technology and Ocean Engineering worldwide. The consolidation of the core research areas is done through the research lines of the existing research groups on Marine Environment, Marine Dynamics and Hydrodynamics, Marine and Offshore Structures, and Safety and Logistics

of Maritime Transportation and Ports that is supported by 53 PhD researchers. The plan for strategic development of new research areas is carried out through a series of thematic lines on Renewable Energies Offshore, Energy efficiency in the design and operation of ships, Subsea Production of Oil & Gas, and the Blue Economy, involving from one to all four of the main groups. It is envisaged to give continuity to Advanced Education through research, providing training to PhD students and experience to post-doctorate researchers, in an environment of wide international research cooperation. Dissemination will also be one of the main directions through the publication of journal papers and participation in conferences as well as organizing international conferences and seminars.

MAJOR AREAS AND LINES OF RESEARCH

Marine Environment - Wave Spectral Models and Time Series Models; Probabilistic Models of Wave Parameters; Wave Modelling and Hindcasting; Circulation and Oil Spill Modelling; Oceanographic Instrumentation. Marine Dynamics and Hydrodynamics - Dynamics of Moored Floaters; Nonlinear Motions and Loads; Ship Manoeuvring and Control; Computational Fluid Dynamics; Full-Scale Trials and Model Tests; 3D Virtual Environments in Ship Dynamics. Marine and Offshore Structures - Ultimate Strength; Fatigue Strength; Impact Strength; Structures in Composite Materials; Geometric Modelling of Ship Structures; Offshore and Submarine Structures; Experimental Analysis. Safety and Logistics of Maritime Transportation - Structural Safety; Reliability Based Structural Maintenance; System Reliability and

Availability; Maritime Safety and Human Factors; Industrial and Occupational Safety; Logistics of Maritime Transportation and Port Operations; Economic and Technological Analysis of Maritime Clusters.

INESC MN INESC MICROSYSTEMS AND NANOTECHNOLOGIES



INESC-MN is a member of the Associated Laboratory i4HB - Institute for Health and Bioeconomy.

EXCELLENT

Evaluation (2019)

14

FTE researchers

0,65 M€

Funding FCT

KEYWORDS

Microsystems; Sensors; Lab-on-chip devices and microfluidics; Spintronics; Micro and nanofabrication; MEMS and BioMEMS.



www.inesc-mn.pt

DESCRIPTION

INESC Microsistemas e Nanotecnologias is a private, non-profit Research and Development Institute created in January, 2002 from the former Solid State Technology group of INESC. INESC MN is dedicated to leading edge R&D in strategic technological areas of micro- and nanotechnologies and the application of these technologies to electronic, biological and biomedical devices. INESC MN research work shares the Laboratories and Class 10/100 Cleanroom facilities with student training and external services. The group’s mission is to provide advanced training to undergraduate and graduate students and researchers at Master, PhD and Post-Doctoral levels, acting as a bridge between the Technical Engineering School (IST, ULisboa) and Industrial Partners worldwide. INESC MN offers Transfer of Technology to Portuguese and International Industries through Collaborative Research, Contract Research, Prototyping and Consulting.

STRATEGIC AIMS

INESC MN research in 18-22 will have an increased focus on the development of complex microsystems that integrate micro or nanofabricated elements. We aim at being leaders in microsystems for industrial sensing, in integrated systems for diagnostics and treatment follow-up, and in smart agrifood/ environmental applications. This research focus will impact the advanced training, services and technology transfer of the unit. As described in 4.1/4.2, research at INESC MN has until now been anchored in two

research groups: (i) Spintronic and Magnetic Biosensors; (ii) Thin-Film MEMS and BioMEMS. In 18-22 the research of these two well-established groups will be conjugated with two strategic developments: (i) the planned extension of our research activities with the integration of new researchers and incubation of new research groups of INESC MN; (ii) the launching of three unit-wide transversal research challenges that coordinate expertise available at INESC MN to solve specific complex problems with high scientific, technological, and societal impact. The three planned transversal research initiatives for 18-22 are: (i) ADVANCED SENSOR SYSTEMS FOR MULTIPURPOSE APPLICATIONS: the aim is to demonstrate advanced multifunctional (physical, chemical, biological) sensor systems for applications in robotic handling, electronic skins, power management in IoT and drone environmental monitoring; (ii) MICROSYSTEMS TO DETECT BACTERIAL CONTAMINATION: the aim is to develop a portable, fast, and inexpensive lab-on-chip microsystem to screen patients with antibiotic-resistant bacteria in a hospital environment (protocol has been established with the Grupo Luz-Saúde); (iii) SENSOR MICROSYSTEMS FOR AGRI-FOOD: we aim at developing advanced microsystems to control key steps in food production – wine and milk are two applications currently under study. These strategic transversal initiatives leverage the combined know-how developed by INESC MN researchers, are expected to have broad impact and aim at addressing complex research and societal challenges. The initiatives are instrumental for a successful integration of the new researchers in the unit

and to align our research to several of the European research priorities.

MAJOR AREAS AND LINES OF RESEARCH

GROUPS: (1) Spintronics and magnetic biosensors; (2) Thin-film mems and biomems; (3) Microfluidics and Lab on a Chip systems; (4) Widebandgap semiconductors and devices; (5) Sensor fusion and electronics; and (6) Materials simulations. TRANSVERSAL LINES: (1) Advanced sensor systems for multipurpose applications; (2) Microsystems to detect bacterial contamination; and (3) Sensor microsystems for Agri Food applications.

IBB INSTITUTE FOR BIOENGINEERING AND BIOSCIENCES

IBB is a member of the Associated Laboratory i4HB - Institute for Health and Bioeconomy

EXCELLENT

Evaluation (2019)

68

FTE researchers

1,71 M€

Funding FCT

KEYWORDS

Bioprocess Engineering; Biomolecular Engineering; Stem Cell Engineering; Microbiology and Microbial Biotechnology; Functional and Comparative Genomics; Biospectroscopy and Biophysics.

DESCRIPTION

The Institute for Bioengineering and Biosciences (iBB) is a Research unit at Instituto Superior Técnico, Universidade de Lisboa, that aims to excel in research and advanced education in biotechnology, by responding to the challenge of exploring innovative approaches to key scientific and technological questions in Biosciences and Bioengineering and of transforming scientific knowledge into tangible innovation. IBB has been classified as EXCELLENT in all FCT evaluations and is the coordinator unit of the Associate Laboratory Institute for Health and Bioeconomy.

STRATEGIC AIMS

The mission of iBB is to conduct groundbreaking research that combines an understanding of the complexity and mechanisms of living systems with the application of engineering principles, to educate and train scientists and bioengineers who will contribute to foster the economic growth of biotechnology in Portugal and to transfer knowledge to society by engaging into productive relations with industrial partners, promoting the creation of start-ups and raising scientific awareness among the public. iBB key objectives are: 1. Conduct excellent quality and competitive research in Bioengineering and Biosciences; 2. Address specific challenges and needs of the Human Health and Bioeconomy sectors; 3. Develop advanced (PhD) educational programmes in Bioengineering and Biosciences; and 4. Transfer knowledge to society (dissemination, patenting, licensing, training, consulting).

MAJOR AREAS AND LINES OF RESEARCH

iBB is organized in four research groups: 1) Bioengineering (BERG) explores engineering approaches to address unmet technological challenges and to translate the knowledge gained in molecular and cellular mechanisms into a rational development of efficient processes and applications of biological systems; 2) Stem Cell Engineering (SCERG) is focused on cell production platforms for the ex-vivo expansion of stem cells and/or their controlled differentiation into specific cell types and micro-tissues. The goal is to generate large numbers of specific and high quality stem/progenitor cell subsets needed for Regenerative Medicine settings as well as to develop in vitro models for disease modelling and drug testing; 3) Biological Sciences (BSRG) conducts multidisciplinary research in fundamental and applied biological sciences, with a focus on Microbiology. Research programs combine Molecular and Cellular Biology, Biochemistry, Functional, Comparative, and Meta- Genomics and Bioinformatics, and explore Systems and Synthetic Microbiology strategies to understand how biological systems orchestrate multiple functions; and 4) Biospectroscopy and Interfaces (BSIRG) concentrates on Molecular and Cellular Biophysics, on Fluorescence and Surface Spectroscopies, and on the Synthesis of Molecules, Polymers and Nanoparticles, having in view both fundamental science, as well as Health and Industrial Applications.



COORDINATOR

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ibb.tecnico.ulisboa.pt

INESC-ID INSTITUTE FOR SYSTEMS AND COMPUTER ENGINEERING, RESEARCH AND DEVELOPMENT

INESC-ID has the status of Associated Laboratory

EXCELLENT

Evaluation (2019)

91

FTE researchers

2,64 M€

Funding FCT

KEYWORDS

Cyber-Physical Systems for Sustainable Energy; Information and Decision Support Systems; Computing Systems and Communication Networks; Architectures and Circuits for Embedded Systems; Interactive Intelligent Systems.

DESCRIPTION

INESC-ID is an R&D institute in Information Technologies, Electronics, Communications, and Energy. INESC-ID is a non-profit institution of public interest, privately owned by Instituto Superior Técnico - IST (51%) and Instituto de Engenharia de Sistemas e Computadores - INESC (49%). It was created in 2000 from the reorganization of INESC, which has become the holding of INESC-ID and four other R&D institutes. INESC-ID boasts more than one hundred PhD researchers and more than two hundred graduate students and fellowship recipients from several universities and polytechnic institutes. In 2013, INESC-ID was identified by FCT as one of the top 10 Portuguese research units attracting projects and funding from the European Union, a recognition that is still valid today. This success is also verifiable at the national level. Like all other Portuguese R&D units, INESC-ID was evaluated in 2018 by the Portuguese Fundação para a Ciência e a Tecnologia (FCT). It has awarded the grade of Excellent, the highest, not only in the overall classification but also in each and every one of the items under evaluation: quality, merit, relevance and internationalization of the R&D activities; merit of the team; appropriateness of objectives, strategy, plan of activities and organization. INESC-ID also renewed the Associate Laboratory status from 2021 for ten years (1 Jan 2021-31 Dez 2030).

STRATEGIC AIMS

The main objectives of INESC-ID are to carry out cutting-edge scientific research in the fields of Computer and Information Technologies, Electronics, Communications and Energy, to deliver advanced training of human resources and to perform the transfer of technology to the productive fabric, carried out through research and development (R&D) contracts with public or private, national or international companies and institutions, as well as to provide direct support to launching technology-based startup companies. Within this context, INESC-ID conducts the following main activities: a) conduct of advanced research in the areas of Computer and Information Sciences, Energy, Electrical Engineering, Electronic Engineering and Informatics through projects and partnerships developed within its Thematic Lines; b) participation in Networks of Excellence and Thematic Networks at European and global levels; c) development of skills and training of human resources (at the graduate level) in the scientific and technological domains covered by the Scientific Areas and support of the work undertaken in the Thematic Lines; d) design, development and evaluation of prototypes based on research work; e) demonstration of commercial or industrially oriented applications; f) evaluation, comparison, standardization and quality certification of products and services; g) promotion of the most advanced technologies among the scientific and academic



COORDINATOR

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community, public services and companies, industrial companies and the general public; h) assessment of the impact and use of new information, communication and electronic technologies in economic activities and in the society in general, thus promoting the economic value of scientific knowledge; i) provision of services and consultancy to public and private entities; and j) support the setup and development of technology-based startup companies bringing new ideas and prototypes to the market.

MAJOR AREAS AND LINES OF RESEARCH

Thematic Lines: a) Digital transformation and citizenship; b) Life and health technology; c) Energy transition; and d) Security and Privacy. Lines of Research: a) Artificial intelligence for people and society; b) Automated reasoning and software reliability; c) Communication networks; d) Distributed, parallel and secure systems; e) Graphics and interaction; f) Green energy and smart converters; g) High-Performance computing architectures and systems; h) Human language technologies; i) Information and decision support systems; j) Nano-electronic circuits and systems; and k) Sustainable power systems.

ISR INSTITUTE FOR SYSTEMS AND ROBOTICS

ISR is a member of LARSyS – Laboratory of Robotics and Engineering Systems.

EXCELLENT

Evaluation (2019)

126

FTE researchers

4,04 M€

Funding FCT

KEYWORDS

(LARSyS): Robotics and cyber-physical systems; Engineering Systems; Human Computer Interaction; Socio-technical Systems; Environmental technologies.

DESCRIPTION

The Institute for Systems and Robotics – ISR-Lisboa – is a multidisciplinary research institution in the areas of Robotics and Information Processing, including Systems and Control Theory, Signal Processing, Computer Vision, AI and Intelligent Systems and Biomedical Engineering. Research at ISR-Lisboa spans a multitude of key topics, ranging from fundamental theoretical issues to the applications of engineering methods and tools to the design and analysis of complex systems. ISR-Lisboa is organized in the following 5 research groups/labs: 1) Computer and Robot Vision (VisLab); 2) Dynamical Systems and Ocean Robotics (DSOR); 3) Evolutionary Systems and Biomedical Engineering (LAsceb); 4) Intelligent Robots and Systems Group (IRSG); and 5) Signal and Image Processing Group (SIPg). Across this broad spectrum our methodologies are rooted in solid mathematical principles, providing, whenever possible, formal guarantees of performance.

STRATEGIC AIMS

ISR-Lisbon is the largest research unit in Portugal devoted to research in Robotics, Systems and Information Processing. ISR-Lisbon is home to more than 250 researchers, students and collaborators including 52 Faculty and doctoral researchers. The internal organization of ISR is structured in five research groups. ISR-Lisboa is part of the Associate Laboratory LARSyS: Laboratory for Robotics and Engineering Systems, together with three other partner research institutions, IN+, ITI and MARETEC.

LARSyS aims at conducting research and innovation activities in multidisciplinary domains with a clear societal impact. Since Jan 2015, LARSyS has new structure that results from a re-organization that took place in the framework of the national research assessment exercise. The renewed LARSyS, “Laboratory of Robotics and Engineering Systems” is a research institution that brings together the following research units: ISR-Lisbo; IN+; MARETEC; and ITI.

MAJOR AREAS AND LINES OF RESEARCH

ISR-Lisboa research is organized in 5 research groups/labs: 1) Computer and Robot Vision; 2) Dynamical Systems and Ocean Robotics; 3) Evolutionary Systems and Biomedical Engineering; 4) Intelligent Robots and Systems Group; and 5) Signal and Image Processing Group. In the context of the Associate Laboratory LARSyS, ISR-Lisboa works together with the other LARSyS core units in the 5 thematic lines of societal impact and contributing to national and international public policies: 1) OCEAN exploration and exploitation; 2) URBAN systems and sustainability; 3) AIR: aeronautics and space systems; 4) LIFE: engineering for and from the Life Sciences; and 5) INTERACTION: Cognitive robots and systems for user experience.



COORDINATOR

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IT INSTITUTE FOR TELECOMMUNICATIONS

IT has the status of Associated Laboratory

VERY GOOD

Evaluation (2019)

263

FTE researchers

5,65 M€

Funding FCT

KEYWORDS

Telecommunications; Applied Physics; Electronics; Applied Mathematics; Instrumentation and Measurements.

DESCRIPTION

Instituto de Telecomunicações it (<https://www.it.pt/>) is a private, non-profit organisation of public interest established in 1992, and State Associate Laboratory since 2001. It is a partnership of six universities one polytechnic institute and two companies involved in research and development in the field of ICTs: Instituto Superior Técnico (IST); University of Aveiro (UA); University of Coimbra (UC); University Institute of Lisbon (ISCTE-IUL); University of Porto (UP); University of Beira Interior (UBI); Altice Labs (AL); Nokia Solutions and Networks (NSN); Instituto Politécnico de Leiria (IPL). Its activities are regularly overseen by an advisory board formed by three recognised international experts. It is regularly evaluated by independent international panels appointed by the Portuguese Science Foundation (FCT). In recognition of its achievements, it was awarded the status of Associate Laboratory of the Portuguese Ministry for Science and Technology in 2001 and renewed in 2011 and 2021.

STRATEGIC AIMS

Its scientific expertise and main research and education activities span five wide areas which aggregate 16 Research Groups covering different topics in telecommunications and cross fertilization areas. Its collaborative networks spans over 250 institutions, of which 179 universities, 39 R&D institutions, 21 companies, 7 state organizations and 7 other institutions. Cooperation includes joint publications, staff exchange and services or product development. It has been the cradle of

some bold technological and scientific ideas that have nurtured for years in the research Groups and have grown to become the basis of independent business. It also plays its role towards the public by producing and disseminating public awareness information, transferring knowledge to national and international industry and providing telecommunications consulting services on a non-competing basis.

MAJOR AREAS AND LINES OF RESEARCH

Major IT research areas are: Wireless technologies, OPTis and Photonics, Information and Data Sciences, Networks and Services and Basic Sciences and enabling technologies.



COORDINATOR

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www.it.pt

ITI INTERACTIVE TECHNOLOGIES INSTITUTE

ITI is a member of LARSyS – Laboratory of Robotics and Engineering systems.

EXCELLENT

Evaluation (2019)

126

FTE researchers

4,04 M€

Funding FCT

KEYWORDS

(LARSyS): Robotics and cyber-physical systems; Engineering Systems; Human Computer Interaction; Socio-technical Systems; Environmental technologies.

DESCRIPTION

ITI is a research unit dedicated to the interdisciplinary field of HCI and encloses Psychology and Social Sciences, Computer Science, and Creativity and Design as core scientific areas. The cross-pollination of these areas allows thriving application areas directed towards societal needs. Assistive Technologies, Learning and Digital Culture, and Sustainability have been identified by ITI as main application areas to build capacity and advance innovation.

STRATEGIC AIMS

Investigate how nature and communities are affected by natural, political, and economic global pressures by supporting the transition to reliable, sustainable and competitive energy systems. This will lead to a climate change resilient economy and society and help to explore the opportunities related to aquatic living and marine research and bio-based industries for the blue economy: a) Invent new design techniques to best respond to, or shepherd, complex and interrelated natural, social, and cultural global issues that could help repositioning Europe in a changing world through new ideas, strategies and governance structures that integrate and inspire the younger and more creative generations leveraging Europe's cultural heritage to build a more inclusive, innovative and reflexive society; and b) Develop personal, business, scientific, and civic technological platforms for better understanding and situating actions, choices, and self in a global perspective – enabling the transition towards a green economy and society through eco-innovation and developing comprehensive and sustained global environmental observation and information systems.

MAJOR AREAS AND LINES OF RESEARCH

ITI is dedicated to the interdisciplinary field of Human-Computer Interaction and explores Psychology and Social Sciences, Computer Science, Creativity and Design.



COORDINATOR

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MARETEC MARINE, ENVIRONMENT AND TECHNOLOGY CENTRE

MARETEC is a member of LARSyS – Laboratory of Robotics and Engineering systems.

EXCELLENT

Evaluation (2019)

126

FTE researchers

4,04 M€

Funding FCT

KEYWORDS

(LARSyS): Robotics and cyber-physical systems; Engineering Systems; Human Computer Interaction; Socio-technical Systems; Environmental technologies.

DESCRIPTION

MARETEC (Marine, Environment and Technology Centre) is a Research Centre of Instituto Superior Técnico. It is dedicated to the analysis and development of solutions for environmental and sustainability problems, in a strongly interdisciplinary approach, based on fundamental physical principles and intensive use of modeling and computational tools. MARETEC is internationally recognized for the development of the physical and ecological modelling systems MOHID Water (for aquatic ecosystems) and MOHID Land (for terrestrial ecosystems), for the use of thermodynamic principles in understanding the growth of organisms and economies, and for the practical application of these tools in topics such as estuarine management, oil spills, precision agriculture, or biodiversity and ecosystem services. MARETEC's activity is part of the Associate Laboratory LARSyS - Laboratory of Robotics and Engineering Systems, a highly interdisciplinary consortium of four research centers that brings together expertise in systems, data science, machine learning, environment, energy, economics, social sciences, humanities and arts.

MAJOR AREAS AND LINES OF RESEARCH

MARETEC has two main research areas:
1) Modelling of marine and land systems – MARETEC's main activities in this area focus on numerical modelling applied to water environmental problems, monitoring and data management. MARETEC has more than 20 years of experience in the development and application of numerical models to coastal and ocean areas and 10 years of experience

in land and riparian areas. It is also strongly involved with different monitoring programs for coastal areas concerning water quality and primary production. The MOHID system - a public domain code with users worldwide - is an integrated modeling system developed by MARETEC. It includes two main models: MOHID WATER and MOHID LAND; and 2) Sustainability – in this research area MARETEC aims at creating a theoretical, mathematical basis for sustainability assessment, through the integration of Thermodynamics, Ecology and Economics. For this purpose, MARETEC has notably worked on Dynamic Energy Budget theory for the metabolism of organisms; the useful exergy approach to energy accounting; energy and economic growth; carbon responsibility indicators; ecosystem services; comprehensive accounting; and sustainable agriculture. Within this overarching framework MARETEC has most notably published in the areas of metabolic ecology, ecosystem services, sustainable agriculture, energy analysis, green accounting, and carbon responsibility.



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IDMEC

MECHANICAL ENGINEERING INSTITUTE

IDMEC is a member of LAETA – Associate Laboratory of Energy, Transports and Aeronautics.

EXCELLENT

Evaluation (2019)

281

FTE researchers

5,92 M€

Funding FCT

KEYWORDS

(LAETA): Mechanical Engineering; Aerospace Engineering; Transports Technology; Energy.

DESCRIPTION

IDMEC played a fundamental role in shaping the future of research, innovation, and education in Mechanical and Aerospace Engineering, by performing high-quality fundamental and applied research that promotes the economic development, and by contributing for the advanced training of the future generation of scientists and engineers. IDMEC has a unique capacity to address complex societal challenges, both nationally and internationally, and to promote and support the definition of public policies in its fields of activity. From 2006 to 2018, IDMEC was the leading institution that coordinated LAETA, which is an Associated Laboratory ranked as Excellent in the last evaluation performed by FCT. The core of LAETA is a dynamic, connected community of 264 Integrated Researchers (IRs) and 255 PhD students. In the last 7 years, IDMEC coordinated 26 large projects with industry (SIEMENS, GALP, REN, MOTA ENLIL, REFER, TAP, OGMA, BRISA, CASADA MOEDA, ERSE, OMNIDEA, EWF, HOVIONE, and other 15 National and International companies). Provided also services to public administration, such as 24 technical reports to Law Courts related to vehicle accidents. Several spin-offs and start-ups were promoted by IDMEC researchers (e.g. Stone City, Kymaner), who also participated in collaborative clusters (e.g. PFP/Cluster Railway, Produtec, MR/Mineral Resources, AED/Aeronautics, Space and Defence). Other initiatives of science and technology management were the coordination of 34 research projects directly funded by FCT, the leadership of 6 EC projects, and the organization of 26 international scientific conferences in Lisbon with more than 4000 participants.

STRATEGIC AIMS

IDMEC is a leading R&D institute, within the industrial network and technological agencies. The plan for future is to increase the visibility of IDMEC to the international stakeholders. To achieve this goal, IDMEC will implement an operational strategy to outreach its activities, that includes the following procedures: 1) To strongly promote and facilitate the interaction of IDMEC researchers with existing European and International R&I networks, by creating and investing in one “acceleration program” to support an increased and award-driven participation of IDMEC in competitive calls (European Horizon, ERC, Marie Skłodowska-Curie); 2) To attract international top-level researchers to IDMEC team by investing in unprecedented and carefully selected experimental infrastructures and computational facilities. This will be achieved by applying to fund-based program PRR; 3) To select top-level PhD students doing their work in foreign institutions and attract them to IDMEC after their PhD completion, using the same procedure for top-level researchers. To this aim, IDMEC will additionally implement a “search program” to easily promote the identification of these candidates at international level; 4) To attract talented students from Brazil, India, Middle East and Asia, to PhD programs coordinated by IDMEC researchers and provide unique opportunities for their career development; and 5) To reinforce the synergies between IDMEC’s researchers and other national and international top-level researchers by promoting “anchor projects”, i.e. projects funded by IDMEC in specific frontier-driven research within the previously mentioned fields.



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MAJOR AREAS AND LINES OF RESEARCH

IDMEC’s dimension and critical mass allows to deploy its expertise across the main fields of sustainable energy, transport technologies and aeronautics and space, and manufacturing technologies. The scientific and technological program of IDMEC for the next five years follows the core objectives of LAETA and its four Thematic Lines (TLs), for which LAETA was awarded Excellent by FCT: TL1 – Energy, Environment and Forests, TL2 – Surface and Air Transport Vehicles, TL3 – Space Technologies, and TL4 – Resilient Industry. Among several objectives, the following three activities need to be highlighted: 1) “Marine Renewable Energy” group will play an important role in support Renewable Energy public policies and in high level education and training highly qualified and trained workforce with in-depth knowledge of the scientific, technological, economic and environmental aspects involved in the use of the different renewable energies existing at sea; 2) “Railway Technologies” group will play an important role in the Certification of Railway Vehicles. The demonstration of the suitability of a given vehicle for an infrastructure, for determined operating speeds, is what is expected from the approval of vehicles for operation on railway networks; and 3) “Space Technologies” group will be in the forefront of the research in emerging areas, such as the development of nano and microsattellites, space robotics, Earth Observation missions, particularly relevant for Portugal (e.g. for maritime observation).





HUMANITIES

ARTIS INSTITUTE OF ART HISTORY

GOOD

Evaluation (2019)

24

FTE researchers

0,32 M€

Funding FCT

KEYWORDS

History of Art; Heritage; Decorative Arts; Architecture; Painting; Tiles.

DESCRIPTION

The ARTIS - Institute of Art History (ARTIS-IHA) is an R&D unit whose main scientific domain is Art History, understood as an autonomous subject, albeit open to articulation with other areas of knowledge. This field is conceived as a vast area of expertise focused on the study of artistic works and Heritage throughout history, and on the retrieval of their accumulated memories and aesthetic meanings. Through the development of basic and applied research in the domain of Art History, in articulation with other fields of knowledge directly related to its methodology and praxis - such as materials science and information technologies, among others - ARTIS-IHA covers a variety of working areas, also expressed by the diverse interests of the team's integrated researchers and the many partners with which it collaborates.

STRATEGIC AIMS

The ARTIS - Institute of Art History (ARTIS-IHA) is an R&D unit whose main scientific domain is Art History, understood as an autonomous subject, albeit open to articulation with other areas of knowledge. This field is conceived as a vast area of expertise focused on the study of artistic works and Heritage throughout history, and on the retrieval of their accumulated memories and aesthetic meanings. Through the development of basic and applied research in the domain of Art History, in articulation with other fields of knowledge directly related to its methodology and praxis - such as materials

science and information technologies, among others - ARTIS-IHA covers a variety of working areas, also expressed by the diverse interests of the team's integrated researchers and the many partners with which it collaborates.

MAJOR AREAS AND LINES OF RESEARCH

In the next five years we propose to continue to develop ARTIS identity in the scientific research context in Portugal, focusing on the subjects of Art History and Cultural Heritage, according to the 3 main axes. The question is in which direction and with which tools should ARTIS continue its path. The answer should be both technological and human. We continue to invest in Digital Art History and all its systems. Our aim is to develop working tools suited to a structured and updated research praxis, with the potential for growth in different directions.

**COORDINATOR**

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CIEBA ARTISTIC STUDIES RESEARCH CENTER

VERY GOOD

Evaluation (2019)

94

FTE researchers

1,54 M€

Funding FCT

KEYWORDS

Heritage and Conservation; Design; Visual Arts; Art Education; New Media.

DESCRIPTION

The CIEBA establishes itself as a producer and disseminator of academic, scientific and creative discourses, in the various audio visual art fields, contributing with acquisitions and research practices 'About art', 'Through Art' and 'For Art'. In the 'About Art research' we can find studies based on the History of Arts and Design, Aesthetic Philosophy, Visual Culture, Curatorial practices and Critical Theory, Image Theory. In the discourses 'Through Art', the possibilities of intervention, education and training, formal and informal, are explored, including institutional education (general education) and vocational education (nurturing prospective artists), as well as advanced training (post graduations) to which we can add intervention in society (with the fostering of new audiences, the education and taste formation, the exhibition, the museum and new museology approaches, interventions, collaborative expressions). Here, too, the arts come across artistic uses in the industrial and communicative formats (such as Industrial and Product Design, Communication Design, Interface Design, New Media). In the research 'For Art' we include the patrimonial safeguard (museology, curatorship, conservation and restoration, studies and research actions on heritage and art remains) as well as the permanent construction of the artistic and cultural heritage of the nation (through creation of artistic and cultural works, through its valorization and dissemination).

STRATEGIC AIMS

Over the next five years, CIEBA will embed the role of art studies focusing on four strategic goals: Goal 1. Facilitate meaningful engagement with relevant audiences, enrolling younger and mature practitioners and researchers towards an advanced education; Goal 2. Deepen thematic Research; Goal 3. Ensure research placement and its curation and safekeeping; Goal 4. Enhance relevant interactions and creative interventions with cultural and social impact; and Goal 5. Facilitate engagement between art and innovation, through the transfer of knowledge and technology.

MAJOR AREAS AND LINES OF RESEARCH

The Artistic Studies Research Center (CIEBA) develops its activity in the field of Culture and Science, namely in the area of Visual Arts and holds eight research groups, being the areas in which the center focuses its development: 1) Sciences of Art and Heritage - "Francisco de Holanda"; 2) Design; 3) Painting; 4) Communication Design; 5) Drawing; 6) Research Group on Sculpture; 7) Research Group on Multimedia Art; and 8) Research Group on Art Education.

b
a

cieba

belas-artes
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CLUL

CENTER OF LINGUISTICS OF THE UNIVERSITY OF LISBON



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EXCELLENT

Evaluation (2019)

72

FTE researchers

1,51 M€

Funding FCT

KEYWORDS

Grammar; Processing; Linguistic Resources; Language Variation; Language Acquisition; Digital Humanities.

DESCRIPTION

The Center of Linguistics of the University of Lisbon (CLUL), a public R&D institution founded in 1932, is a unit of the School of Arts and Humanities (FLUL). CLUL is committed to leading research on Portuguese, including Portuguese-related creoles, which aims at contributing to understand language knowledge, acquisition, and use, from the mental representation of grammar(s) to oral and written language processing, from language acquisition and development to language production across time, regions and people. By combining theory-oriented and applied research, laboratorial investigation, fieldwork, and archive and computer-based treatment of linguistic data, the center has a long tradition of producing, updating, refining and disseminating linguistic resources to the scientific community and to the general public. The outcomes of CLUL's research on language impairments have direct impact on societal challenges and target a more inclusive society. With this mission in mind, CLUL positions itself as the international reference center for the study of Portuguese and Portuguese-related languages.

STRATEGIC AIMS

CLUL's strategic research agenda involves eight key research areas strongly related to the strategic goal of furthering CLUL's role as the leading international center for the study of Portuguese: language resources and applications for Portuguese and Portuguese related-languages; spatial and historical language variation; digital humanities and critical edition; language processing and language acquisition; language impairments

in development and ageing; educational linguistics; translation; formal models of grammar (and their computational modeling). This research agenda is supported by strengthening the human resources, promoting advanced training positions in articulation with FLUL's and UL's PhD programs, generalizing open access practices and further fostering CLUL's international and national networks and dissemination actions inside and outside academia. CLUL sees service to the community as a central part of its research activities, and develops initiatives to broadly disseminate research outcomes, as well as to promote their application to societal demands.

MAJOR AREAS AND LINES OF RESEARCH

CLUL's team is organized into five research groups - Dialectology and Diachrony, Grammar & Resources, Phonetics and Phonology Lab, Laboratory of Psycholinguistics, Philology – which are coherently structured to jointly contribute to the following main research areas and strands: language resources and applications; spatial and historical language variation; digital humanities and critical edition; language processing at phonological, morphological, lexical syntactic and semantic levels; language acquisition; clinical linguistics and educational linguistics; translation. These strategic areas are related to work on formal phonology, lexicon, syntax, and semantics that contributes to building an integrated model of grammar (taking into consideration how it is represented in the human mind and how it can be computationally modeled), and also to usage-based approaches to language in context.



UNIARQ

CENTRE FOR ARCHAEOLOGY UNIVERSITY OF LISBON



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VERY GOOD

Evaluation (2019)

34

FTE researchers

0,74 M€

Funding FCT

KEYWORDS

Archaeology; History; Cultural Heritage; Museology.

DESCRIPTION

UNIARQ is a research unit of the School of Arts and Humanities (SAH) of the University of Lisbon (UL) dedicated to archaeological research of past human societies. The chronological scope covers the period between the first Hunter-Gatherers until the formation of the Roman province of Lusitania and the beginning of the Middle Ages. Due to the nature and the chronological scope, our research transcends the national borders and includes the Iberian, Mediterranean and Atlantic regions, even reaching a global level whenever dealing with the Neandertal, the neolitization process, Bell beaker culture, Phoenician contacts in the Mediterranean and the Roman Empire. Research is frequently performed within multidisciplinary teams in partnership with other national and international research units, Municipalities, the National Museum of Archaeology and other museums, foundations, associations and private companies. The unit is directly involved in training undergraduate and graduate students in Archaeology at SAH-UL, for their active participation in research projects. Publications of the unit can be considered a reference in national and international scales and chiefly published in open access. The results of the research are the bases of Public Archaeology projects in a local and regional level, throughout the whole country and help the definition public policies of management and valorization of archaeological heritage.

STRATEGIC AIMS

In its research strategy, UNIARQ incorporates projects with different configurations and

which are developed within multidisciplinary teams. The research activities include field work (with surveys and excavations, etc.) mainly in the Iberian Peninsula but also in other geographies whenever the subjects transcend the Iberian scope; as well as studies of material culture and paleoenvironmental data. The main challenges are the intensification of knowledge production and the expansion of research areas to the Medieval and Modern/Contemporary periods, in addition to strengthening internationalization. On the other hand, the use of new technologies in the field of the Digital Humanities has a high potential that can be intensified. The use of archeometric approaches is a consolidated reality, which must continue and even intensify in the different lines of investigation and in specific projects. In the same way, subjects as the History of Archeology and theoretical issues can still be developed. Another challenge is the search for competitive funding for projects that are often supported (logistically and financially) by local entities. The attraction and stabilization of high potential researchers is also a challenge to take into account, in addition to the necessary improvement of the physical conditions of the laboratories to be included within SAH.

MAJOR AREAS AND LINES OF RESEARCH

UNIARQ is a reference centre for the knowledge of Human Evolution; the latest hunter-gatherers and the neolitization process; the social complexification of agro-metallurgical societies; the Eastern presence and its interaction with Western Iron Age communities; the origins of writing systems; the construction of the province of Lusitania

and the changes that took place in Late Antiquity. The main areas of investigation include material culture studies, archaeology of funerary and symbolic practices, paleoenvironmental and zooarchaeological studies, site and landscape analysis, DNA, cultural relations between indigenous and settlers / migrants, among others. History and Theory of Archeology are also strategic areas. UNIARQ invests in the development of new areas of study in the area of Historical Archeology, particularly in the Medieval / Modern periods, Archeology of identities and Resistance linked to different geographical frameworks in Africa, Brazil and even in Europe.



CEC-FLUL CENTRE FOR CLASSICAL STUDIES

EXCELLENT

Evaluation (2019)

39

FTE researchers

1,05 M€

Funding FCT

KEYWORDS

Classical Philology (edition/translation of texts); Classical Reception in Portugal; Classics and Other Sciences.

DESCRIPTION

CEC's hallmark as producer of world-leading research is its work on what CEC has been calling 'a Portuguese approach to the Classics'. This encompasses the study of the transmission of ancient texts, of how they were read, of the new genres into which they were transformed, of the authors who engaged with Classics, and of the challenging attitudes towards Classical texts, particularly in Portugal. In this area, there is still much to be done in Portugal, where many primary sources are still unavailable and are unknown even to researchers. CEC assumes the task of investing in the edition and the critical study of the huge set of still poorly known or completely unknown Latin texts from Western Iberia and, more specifically, from the Portuguese territory. This core task is accompanied by research in the classical authors themselves, as they provided the models emulated and contested in the post-classical period. It is also accompanied by innovative research in reception studies and by an investment in interdisciplinary projects. These research activities have two concrete and important global outputs. First, they provide the across-fields national and international academic community with new materials and perspectives that would be otherwise unavailable to them. Second, they have an impact on the non-academic community, raising awareness for the Classical cultural heritage. CEC publishes two journals in its areas of research: *Euphrosyne* (indexed in the main databases and the leading Portuguese journal in Classics), and *eClassica* (an online publication). CEC is chaired by a Director and a Secretary, assisted by a Scientific Council of all Integrated members who hold a PhD. It also has an extended Scientific Advisory Board of six

internationally renowned scholars from Italy, Spain, the UK and the US, and an Honorary Researchers committee of eight scholars.

STRATEGIC AIMS

CEC's vocation is clear – to offer a Portuguese perspective to research in Classics, focusing especially on the Classical heritage in Iberia/Portugal. This entails a compelling task: to study the huge set of poorly known or completely unknown Latin texts from Western Iberia, and especially from the Portuguese territory. This core task is to be accompanied by research in the classical authors themselves, as they provided the models emulated and contested in the post-classical period. It must also be accompanied by innovative research in reception studies and by an investment in interdisciplinary projects. These research activities have two concrete global outputs. First, they provide the across-fields national and international academic community with new materials and perspectives that would be otherwise unavailable to them. Second, they have an impact on the non-academic community, raising awareness for the Classical cultural heritage. In order to focus on what distinguishes it from other R&D centres, and to improve its budgetary focus on research themes with greater potential for excellence, CEC prioritized, as part of its five-year planning, ten small dynamic teams (3-6 integrated researchers), which could be considered as High-Potential Research Teams (HPRT) on the basis of their previous work, their degree of internationalization, their prospective impact and the challenges of their project. CEC has three global priorities: 1) to produce internationally excellent research; 2) to attract new researchers and students; and 3) to disseminate research.



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MAJOR AREAS AND LINES OF RESEARCH

CEC is organized in four thematic areas, designed to coordinate activities efficiently and to promote cohesion and communication between groups. These areas are not formal divisions; their aim is to bring together researchers interested in related topics or approaches in a cooperative, debating and free environment. 1) CLASSICA: it brings together projects dealing with Greco-Roman themes; 2) HISPANIA LATINA: it brings together projects that deal with Latin post-classical Iberian/Portuguese texts; 3) RESCRIPTA: it brings together projects dealing with the literary reception of classical themes and texts in Portuguese-language literature; and 4) DIA/LOGOS: interdisciplinary projects, exploring the ways ancient models have been used and offering inputs to other academic disciplines. CEC prioritized ten small dynamic teams, which could be considered as High-Potential Research Teams (HPRT) on the basis of their previous work, their degree of internationalization, their prospective impact and the challenges of their project: 1) MYTHOI: ancient readings and scholarship; 2) FLAVII: Flavian poetry; 3) EPIGRAPHICA: Roman, Late Antique and early medieval epigraphy; 4) WISIGOTHICA: Visigothic hagiography and historiography; 5) CODOLPOR: Corpus Documentale Latinum Portucalense; 6) EPISTEME: Portuguese early modern science; 7) SINICA: Portuguese Jesuit Latin texts in/on Asia; 8) HVMANISTICA: Camões and the Portuguese Humanism; 9) ESCRITORAS: Portuguese women writers; and 10) WSFC: What stage for the Classics?

CEComp CENTRE FOR COMPARATIVE STUDIES



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VERY GOOD

Evaluation (2019)

62

FTE researchers

1,18 M€

Funding FCT

KEYWORDS

Comparatism; Culture; Literature; (Inter)Art Studies.

DESCRIPTION

The Centre for Comparative Studies (CEComp) is a scientific unit of the School of Arts and Humanities, University of Lisbon. Its activities encompass the comparative analysis of literatures, arts and cultures, using interdisciplinary methodologies and highly theorised approaches. CEComp's scientific identity is strongly grounded in the fields pertaining to Comparatism within the Humanities (Culture Studies, Literary and Artistic/Interart Studies, in dialogue with the Social Sciences). Spatial questions and approaches articulating these with the aesthetic and cultural dimensions of time, history and memory are common to all groups, notwithstanding the variety of approaches and methodological procedures adopted. CEComp promotes the necessary discussion about the epistemological challenges raised by Comparatism, continually refocusing the reflection on this field of knowledge. The comparatist practice, situated at an interdisciplinary and interdisciplinary focal point, depends on that inward gaze that is the first condition of its possibility.

STRATEGIC AIMS

CEComp is organized in 4 Research Groups that reflect these trends, using multidisciplinary and crosscultural approaches, with different emphases that correspond to research previously undertaken and the specific training of its members. One of the most consolidated features of CEComp is its high-standard international profile in terms of its members

and partnerships, attracting a large number of foreign PhD students and postdoctoral researchers, and fostering a significant number of international networks and doctoral schools. Several projects have received national and international funding, CEComp's members contribute regularly to international publications. CEComp fosters the training and integration of post-graduate students, who work with the researchers and participate in doctoral schools and consortia. CEComp publishes regularly a book series, a periodical for postgraduate students and another for undergraduate students. It relies on a website, public databases and a monthly digital newsletter that disseminates CEComp's activities and publications. It also supports academic education, fostering a six semester BA course and a postgraduation programme, including a MA course and an international PhD programme.

MAJOR AREAS AND LINES OF RESEARCH

CEC is organized in 4 Groups: MORPHE-Text and Memory works on issues derived from different kinds of personal, cultural, or literary memory associated to literary tradition, textual memory and emotions. Literature and the arts are seen as central in the debate on how cultural identities are (trans)formed and submitted to a permanent process of revision. Special attention is paid to critical editions and archival work. CITCOM-Citizenship, Critical Cosmopolitanism, Modernity/ies, (Post)Colonialism researches using the contribution of Social Sciences to Culture Studies, focussing on citizenship, comparative colonialisms, migration, gender, memory and history. THELEME-Interart and

Intermedia Studies' research encompasses different artistic practices, devising innovative approaches to new interart phenomena. It uses an intermedial perspective, focusing on the medium, processes of (re)mediation, translation and the interface between verbal, visual and audio media. LOCUS - Spaces, Places, and Landscapes examines the practice and theory of spaces, places, landscapes and borders. It promotes new research on the historical, social and material construction of space and the relationship between place(s) and culture(s), examines how nationality and transnationality shape the experience of place and culture, and how globalisation and cosmopolitanism shape cultural and aesthetic cartographies.

CEAUL / ULICES

CENTRE FOR ENGLISH STUDIES



COORDINATOR

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ulices.letras.ulisboa.pt/cn/

VERY GOOD

Evaluation (2019)

52

FTE researchers

1,00 M€

Funding FCT

KEYWORDS

English; Language; Literature; Culture; Translation.

DESCRIPTION

Founded in the late 1980s, CEAUL/ULICES undertakes both fundamental and applied research, often with social impact, comprehending hermeneutical practices where interpersonal/intercultural relationships are crucial. The Unit hosts researchers organised in six Research Groups (RGs) specialising in the major fields of literature, culture and linguistics, and focusing in particular on translation studies; diaspora and post-colonial studies; city studies; new media studies; digital humanities; and medical humanities.

STRATEGIC AIMS

CEAUL/ULICES organises its research aiming at the dissemination of English Studies both among the Portuguese academia, and non-specialised social groups. It also aims to develop its international rapport with similar institutions abroad in order to ensure the constant updating of its activities. The Unit's researchers are encouraged to participate in conferences and similar meetings in foreign research units, as well as to publish in specialised and peer-reviewed /refereed periodicals and publishers thus presenting their work. They are also involved, on a regular basis, with other Portuguese and foreign Universities and Research Centres sharing projects and developing ground-breaking fields of study.

MAJOR AREAS AND LINES OF RESEARCH

The unit has six research groups (RGs) engaged in individual and collective projects. Its researchers are committed to enhancing a mono-, inter- and multidisciplinary dialogue with the aforementioned fields of knowledge. This is particularly visible in ground-breaking projects such as: SHARE – Health and Humanities Acting Together (PTDC/LLT-OUT/29231/2017); Receiving | Perceiving English Literature in the Digital Age; Messengers from the Stars: On Science Fiction and Fantasy; Creative Cultures: Cities, Trends, Strategies; IndirecTrans: Indirect Translation via English.

CH-ULISBOA

CENTRE FOR HISTORY OF THE UNIVERSITY OF LISBON



COORDINATOR

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centrodehistoria-flul.com

GOOD

Evaluation (2019)

80

FTE researchers

1,13 M€

Funding FCT

KEYWORDS

Comparative and Connected History; Mobilities; Transitions; Environment; Identities; Social Memories.

DESCRIPTION

CH-ULisboa is an integrated research unit in the History Area of the School of Arts and Humanities of the University of Lisbon (FLUL). The unit's main group of researchers is associated with Faculty members and graduate students linked to FLUL's Department of History. As a research unit closely linked to FLUL, members of the research team actively collaborate with the Faculty's undergraduate and graduate programs. The unit also frequently welcomes foreign researchers (doctorate or not), many of them from countries outside the EU, as well as other researchers who develop their activities either through mobility programs within the framework of projects in which the Center is a participating entity, either through the scientific institutions of their countries of origin. The restructuring program (2015-2017) led to a major renovation of the team. The research axes widened, focusing on a more global and comparative approach to history from non-European spaces and from case studies of the history of Portugal and its empire. The scientific agenda of CH-ULisboa also underwent a deep realignment, centered on the challenges social problems posed by the present (for example, in the domains of environmental history or religion and violence).

STRATEGIC AIMS

The strategic plan for 2018-2022 is based on the idea that, in the analysis of societies, the perspective of connections deepens the understanding of the past. At the same time, it is based on the conviction that Portugal (and Lisbon) has historically been an

excellent point of observation for the study of interactions and for research topics reflected in the structure of the Research Groups (RG). The focus will be increasingly on connectivity and relations between societies, favoring interconnections on a wide geographic scale. The strengthening of partnerships and network activities is crucial in the plan's implementation strategy. Particular attention will be paid to some key themes: maritime history, environmental history, tourism and leisure. Digital Humanities are also central to the strategic plan, developing on three basic axes: 1) the availability of historical sources online; 2) the creation of working instruments, namely dictionaries, in partnership with other institutions; and 3) the publication of prosopographic databases, including academics and notaries. Last but not least, a line of publications will be the unit's historiographic emblem.

MAJOR AREAS AND LINES OF RESEARCH

Chronological depth and thematic diversity are an integral part of the centre heritage and identity. This should be seen as an opportunity rather than a limitation. The project is grounded on the visibility of a common line of research within this diversity. Thus, the CH-ULisboa internal organization encompasses five Research Groups, each established according to different historiographical perspectives corresponding to the unit main research subjects: 1) Building and Connecting Empires (coord.: Francisco Contente Domingues); 2) Court Studies and Diplomacy (coord.: Manuela Santos Silva); 3) Cultural Encounters and Intersecting Societies (coord.: Carlos Almeida); 4) Military History (coord.: José Varandas); 5) Uses of the Past

(coord.: Sérgio Campos Matos). At the same time, international collaboration projects are underway to expand and deepen the research conducted in the Research Groups.

CITUA

CENTRE FOR INNOVATION IN TERRITORY, URBANISM AND ARCHITECTURE

EXCELLENT

Evaluation (2019)

24

FTE researchers

1,09 M€

Funding FCT

KEYWORDS

Territory; Urbanism; Architecture; Built Environment; Consolidated City; Peripheral City.

DESCRIPTION

CiTUA is a R&D Unit dedicated to research and advanced training in Territory, Urbanism and Architecture. Its mission is the production and dissemination of knowledge on issues with direct impact on the quality of urban life and the construction of a fairer and more equitable city. Its main aims are to document and research the theories, processes and methodologies involved in the (re) construction of urban territories and their built spaces, to study the interactions between built fabrics and their potential social, economic, cultural and environmental dynamics, to evaluate models of governance, management and financing and to inform the debate about the future. R&D activities covers different scales of urban issues, from the territory to the building structures. They are carried out in an interdisciplinary context from 7 thematic lines: Knowledge spaces, Heritage, Landscape as a Socio-Ecological System, Planning, Management and Governance, Spatial Justice and Practice-Based Research and are based on an active collaboration among researchers and strategic partnerships with other R&D centres and entities outside the university. CiTUA is classified as 'Excellent' by FCT. With administrative and financial autonomy, it allows its researchers to access an international scientific atmosphere, as well as a stimulating and collaborative internal dynamics.

STRATEGIC AIMS

CiTUA adopts a strategical framework based on: a) a process of knowledge building on urban territories according to a multiscale approach; b) active intellectual collaboration

among researchers with varied backgrounds and perspectives; c) strategic partnerships with other R&D centres and institutions; d) advanced formative and life learning actions; e) diffusion of scientific results through publications, seminars, conferences, exchange visiting programs and national and international scientific meetings; f) new and diversified outreach activities based on the concept of open science and innovation; g) collaborative attitude among senior and junior researchers and doctoral students through the development and implementation of "research-training" sessions.

MAJOR AREAS AND LINES OF RESEARCH

CiTUA's research areas are organized around transversal and not closed challenges, covering different scales of urban issues, from the territory to the building structures. They involve researchers with distinct and complementary backgrounds whose range of skills enables a multidisciplinary approach to the issues and challenges involved in the (re)construction of urban territories and their built spaces, based on: 1: Emerging forms of inhabiting space in the contemporary urban territories resulting from evolving social demands; 2: Planning, management and governance of contemporary urban territories in scarcity, different socio-economic and climate change contexts. These two research areas also express CiTUA researchers' contribution to a growing field of cross-cultural studies and interdisciplinary scholarship that use concepts from humanistic, social, scientific and technical disciplines.

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CLEPUL

CENTRE FOR LUSOPHONE AND EUROPEAN LITERATURES AND CULTURES

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www.clepul.eu**GOOD**

Evaluation (2019)

116

FTE researchers

1,43 M€

Funding FCT

KEYWORDS

Literature; Culture; Lusophony; Europe.

DESCRIPTION

The Centre for Lusophone and European Literatures and Cultures (CLEPUL) was founded by Professor Jacinto do Prado Coelho in 1975. Back then CLEPUL had the broad denomination of Centre for Portuguese Literatures of the Universities of Lisbon. This Research Unit on Arts and Humanities – Literary Studies came into being with the main purpose of promoting innovative and unique research work on the universe of Literature and its cultural expressions in the countries where Camões' language is spoken. The research work developed at CLEPUL is directly connected to the teaching and research of language, culture and literature within the School of Arts and Humanities of the University of Lisbon. It is also connected to the projects of our full members and associate members within other national and international universities and institutions. In recent years, CLEPUL has developed scientific work within its main subject matter (Portuguese Language Literatures), considering more profound study and understanding would be expected. This development was largely aided by the flourishing of other contiguous scientific areas (Comparative Literary Studies, History, Classic Studies and Cultural Studies), as well as by the expansion of the centre itself as well as the number of researchers involved. This reflection effort, along with the increase of CLEPUL's "critical mass", have placed the European Literatures and Cultures at the centre of a more national perspective, literarily and culturally speaking, in order to better understand the authors and their work. Otherness and national background became fundamental for understanding identity. In these circumstances, CLEPUL was able

to develop projects, in light of this new spirit, welcoming national and international partnerships and organizing workgroups and several actions.

STRATEGIC AIMS

CLEPUL has established since 2008 a dialogue between various fields of knowledge and the national community, Europe, Lusophone countries and the Iberian-Slavonic inter-culturality. Given the large number of researchers, it becomes possible to realize aggregate and fundamental projects for the Culture of the countries with which Portugal has relations with: in addition to revealing sources and publish titles of national interest (Pioneering Works of Portuguese Literature, the Complete Work of Father António Vieira, of Fernando de Oliveira and Marquis of Pombal), the Centre devotes great interest to Lusophone historiography and literature, with critical and annotated editions, and finally, it associates the Portuguese language to the other Romance languages and, in an innovative way, with the Slavic languages. Supported by national and international partnerships, CLEPUL organizes numerous congresses and conferences with the participation of several national and international researchers. Presently composed of 5 Research Groups (Portuguese Literature and Culture; Portuguese-speaking African Cultures and Literatures; Brazilian Literature and Culture; Literatures, Cultures and Arts; European Literatures and Cultures) and two FCT projects (Pombalia and Building African Literatures) CLEPUL surveys themes of identity, violence, multiculturalism and intersections, with a strong presence in civil society and in schools through conferences and free course. In the meantime, the future

is being prepared by supporting scholarship holders and postgraduates, between training courses, colloquia and seminars.

MAJOR AREAS AND LINES OF RESEARCH

The Centre's activities will follow: 1) deepening of the dialogue and exchange between Lusophone cultures and Europe, as well as between the various fields of knowledge/discourses (Arts, Letters, History and Sciences); 2) networking and internationalization achievement; 3) publication of unpublished/scarcely known sources (critical and annotated editions), complete works of founding authors of Literatures both from Portugal, Brazil, Timor and African Portuguese language countries; 4) enlargement and consolidation of CLEPUL's formal/informal networks, especially in the Lusophone countries and in the frame of Iberian-Slavonic; 5) investment in the research scientific results' dissemination, namely through a) systematic translation; b) the web, with the production of scientific contents in free access, and establishing partnerships with the media agents, in view of disseminating the Centre's work; and 6) strengthening of CLEPUL's presence outside the universities, namely in secondary schools and cultural centers, through the realization of gatherings, training actions, conferences, as a way to make known this research unit's scientific results. CLEPUL will further foster the areas that define its true identity and boost the addition of new projects that reinforce its natural vocation, promoting research in fields related to the intangible portuguese cultural heritage, such as the oral popular traditions and other artistic and cultural manifestations.

CFCUL

CENTRE FOR PHILOSOPHY OF SCIENCES OF THE UNIVERSITY OF LISBON

VERY GOOD

Evaluation (2019)

47

FTE researchers

0,91 M€

Funding FCT

KEYWORDS

Philosophy of Science; Philosophy of Natural and Life Sciences; Science and Art; Science, Ethics and Politics; Interdisciplinarity; Epistemology.

DESCRIPTION

Established in 2003, the Center for Philosophy of Sciences of the University of Lisbon (CFCUL) is a R&D Unit funded by the Fundação para a Ciência e a Tecnologia (Ref. UIDB/00678/2020 e UIDP/00678/2020), located in the Faculty of Sciences of the University of Lisbon. CFCUL is the only research center in Portugal fully devoted to the Philosophy of Science. CFCUL's mission is to promote research, training and dissemination of knowledge in the area of Philosophy of Science in accordance with the best international scientific standards. CFCUL is organized in three Research Groups (RG) and one Transversal Research Pole. The RGs are: RG1 - Philosophy of the Formal Sciences, Methodology and Epistemology; RG2 - Philosophy of Natural Sciences; RG3 - Philosophy of Technology, Human Sciences, Art and Society.

STRATEGIC AIMS

CFCUL aims to develop first class interdisciplinary research in Philosophy of Science, by fostering dialogue and collaboration among philosophers, scientists and artists. Accordingly, CFCUL's research strategy is based on the promotion of an international and diverse research team; support to publications in top-rated international outlets; fostering of CFCUL's members participation in national and international research projects, with an emphasis on the application for international funding; promotion of the participation in and creation of national and international research networks; support of researchers international mobility (in and outbound). Additionally,

CFCUL is strongly invested in post-graduate training and is increasingly committed to the dissemination of its research in both academic and lay audiences.

MAJOR AREAS AND LINES OF RESEARCH

CFCUL is committed to a pluralist conception of philosophy of science, open to diverse disciplines and to crucial societal challenges. CFCUL's main areas of research correspond to its RGs, i.e., Philosophy of the Formal Sciences, Methodology and Epistemology (RG1); Philosophy of Natural Sciences (RG2); Philosophy of Technology, Human Sciences, Art and Society (RG3). The RGs are divided in research lines (RL) as follow: RG1: RL1) Epistemology & methodology, RL2) Philosophy of the formal sciences, and RL3) History & philosophy of both european and non-european scientific traditions and communication of science; RG2: RL1) Philosophy of physics, RL2) Philosophy of the life sciences, and RL3) Metaphysics of science; RG3: RL1) Science and art; RL2) Science-art-philosophy lab ; RL3) Philosophy of human technology; RL4) Philosophy of human sciences, ethics and politics. Finally, the Transversal Research Pole crosses different research lines and is devoted to interdisciplinarity and transdisciplinarity.



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CET

CENTRE FOR THEATRE STUDIES



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www.ceteatro.pt/

VERY GOOD

Evaluation (2019)

30

FTE researchers

0,68 M€

Funding FCT

KEYWORDS

Digital Humanities; Theatre; History; Cultural Heritage; Performing Arts; Theatre Iconography.

DESCRIPTION

CET was created, in 1994, by professor Osório Mateus to function as a privileged stage for scientific research activities and training researchers to study of the theatre. Historical and sociological research and the collection and fixation of materials, which allow the study not only of Portuguese theatre, but of the theatre produced and presented in Portugal, have been the privileged fields for the Centre for Theatre Studies. The work that has been developed is distinguished by privileging the exploration new technologies, in order to produce documents that allow the history of theatre in Portugal to be available quickly and accessible to a wider audience. CET considers as essential part of its mission the initial and advanced training of researchers in a field and participate as a partner of other higher education institutions, of public and private. CET regularly promotes research initiation through internships and participates in the recognition of the qualifications of many teaching staff and artists.

STRATEGIC AIMS

CET's main priorities are to encourage and develop scientific research on Portuguese theatre and performance from the Middle Ages to the present, and to train researchers in the methodologies of theatre historiography, criticism, and theory. As a strategy, CET promotes interdisciplinary knowledge, which allows the team to build artistic and cultural partnership networks in contemporary performing arts, as well as to recover Portuguese theatre heritage and understand it in the context of European

theatre traditions. CET follows an open-door approach to discussion of contemporary theory and practice issues, pursues dynamic teamwork methods, and encourages the critical study of contemporary theatre production and data sharing.

MAJOR AREAS AND LINES OF RESEARCH

Three lines of research: 1) Critical Discourses in Performing Arts; 2) History of Theatre in Portugal; 3) Theatre and Image. 1) CDPA aims to critically address contemporary performing arts, in a national and international context. It starts with an interdisciplinary logic and a principle that aims to bring creative know-how closer to the recent perspectives of critical thinking. 2) HTP aims to study the theatrical systems that over the centuries have organized theatrical activity in Portugal, and the aesthetic assumptions that have marked it; the edition of the full corpus of theatre by Portuguese authors and theatrical poetics; the collection and analysis of documents that allow (re) composing the History of Theatre in Portugal, from the 13th to the 19th centuries, establishing relationships between them and making them available digitally. 3) T&I proposes as object of study the imagery materials associated with the performative activity. Both materials with particular interest in the constitution of a history of theatre by images and their interpretation are considered, as well as the presence of the image in the construction of the theatrical spectacle. It is dedicated to the analysis of the relations between theatre and image.

CFUL CENTRE OF PHILOSOPHY, UNIVERSITY OF LISBON

VERY GOOD

Evaluation (2019)

52

FTE researchers

0,95 M€

Funding FCT

KEYWORDS

Epistemology; Philosophy of Mind; Philosophy of Language; Practical Philosophy; History of Philosophy.

DESCRIPTION

CFUL was founded in 1989 with the following goals: (a) to promote excellence in research by supporting the production of ground breaking, wide spanning philosophical investigation; (b) to provide a dedicated environment for the advanced training of graduate students and early career researchers; (c) to foster interdisciplinary cooperation with other humanities and sciences; (d) to allow the merits of philosophy to reach beyond academic circles, engaging broader audiences in philosophical enquiry. In each group, the research is carried out in order to: i) Promote high-standard research in Portugal; ii) Edit and publish rigorous translations of classical philosophical works, together with original research on these works; iii) Stimulate and support research by CFUL members by the publication of monographic studies, as well as by supporting the submission of papers to peer-reviewed journals, and the presentation of papers in international colloquia, conferences, seminars, courses, workshops or discussion panels; iv) Connect Portuguese philosophy researchers with their international peers, by means of partnerships with acknowledged research groups, and via the publication of 4 philosophy journals (Disputatio, Philosophica, Phainomena, and philosophy@lisbon); and v) Provide young researchers with the opportunity to start investigation in research teams and projects under the supervision of senior researchers, thus supporting their first steps in research and improving their working conditions.

STRATEGIC AIMS

CFUL's strategy for 2018-22, largely following the ongoing strategy, consists of three main plans: dimension, level of internationalization and overall quality of the research produced. In this way, we intend to focus our efforts on three lines of action: (i) provide CFUL members with the most favorable conditions for the development of top research; (ii) attracting talented researchers to the groups and preparing well-designed applications to fund research projects; (iii) to reinforce the attention given to the advanced training of young researchers. Each research group will implement CFUL's general lines of action according to their own objectives. Thus, HPhil will also endeavor to create resources in Portuguese for research in the history of Philosophy. LanCog will maintain the tradition of organizing 'Petrus Hispanus Lectures', given biannually by a leading figure in current philosophical research. The Praxis group, within the scope of the PhD in Ethics, Democracy and Societal Challenges, will develop the project Ethical Challenges of Democracies. Regarding the training of young researchers, they are integrated into the research teams of ongoing projects that deal with topics related to their specific area of training, being strongly encouraged to participate in the regular seminars of CFUL. In addition, CFUL offers several scientific events designed specifically for young researchers, and supports the online magazine philosophy @LISBON, prepared by and for graduate students.

MAJOR AREAS AND LINES OF RESEARCH

Since its foundation, CFUL's activities have been centred on three main lines of research: (i) research on core issues in the fundamental areas of philosophy; (ii) translation and commentary of the classic works of the western philosophical tradition; (iii) reflection on societal challenges. These lines of research are now implemented by three research groups: History of Philosophy (HPhil); Language, Mind and Cognition (LanCog); Practical Philosophy (Praxis). Research at HPhil will focus on classical Greek philosophy in the 19th century. IV BC; receptions of neoplatonism in European philosophy; Kant: from the Enlightenment to idealism; Portuguese political thought in protomodernity; the presence of Arab-Islamic thought in contemporary Portuguese thought; the phenomenological tradition and phenomenological interpretations of ancient thought. LanCog will work in the areas: Logic and Language; Metaphysics and Epistemology; Mind and Action; Theory of Value, Normative Ethics and Philosophy of Law. Praxis will work on values in Modern thought; Political phenomena and Critical Theory; philosophical meaning of Landscape and Environment, meaning of Art and Aesthetic Experience within a philosophical framework; Social World.



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VICARTE GLASS AND CERAMIC FOR THE ARTS



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vicarte.org

EXCELLENT

Evaluation (2019)

20

FTE researchers

0,68 M€

Funding FCT

KEYWORDS

Glass, Ceramics; Art; Science; Cultural Heritage; Design.

DESCRIPTION

VICARTE research unit is a partnership between NOVA School of Science and Technology and the Faculty of Fine Arts of the Universidade de Lisboa. The research at VICARTE connects the present and the past, by developing new materials for glass and ceramics contemporary art, and by studying the traditional and historical production practices and the exploration of different aesthetic concepts in art. VICARTE joins specialists in art, science, design, history, archaeology and conservation of glass and ceramics. It develops its activities through research projects, exhibitions, training programs, collaboration with the public, private institutions and industry, and outreach and dissemination initiatives. VICARTE objectives are structured around two research pillars – Glass and Ceramics in Contemporaneity, and Glass and Ceramics in Cultural Heritage – exploring synergies and maximizing their combined impact. VICARTE is in a unique position to strongly contribute to the education and promotion of art making and design using glass and ceramic as a medium of creative expression. VICARTE is committed to ensure scientific and technical support to MSc and PhD programs related to Glass and Ceramics. Some of VICARTE notable achievements are the development and engineering of other sustainable and low-environmental impact glasses and glass-ceramics in collaboration with Vista Alegre and EPAL; research on craft skills heritage and their potential to greatly benefit local ecosystems in the framework of two different European projects; the project

Detention Gallery, on the relation between art, natural materials, sustainability, high and low tech and architecture; the systematic and comprehensive study of painted glass slides for projection with Magic Lanterns, with CESEM, ANIM and MUHNAC; the study and characterization of the terracotta sculptures from Convento dos Capuchos (Sintra) to provide data to outline the Conservation and Restoration strategy.

STRATEGIC AIMS

The mission of the Research Unit VICARTE is to promote excellence in the study of glass and ceramics at a local and global level. Our primary goal is to develop innovative research exploring the dialogue between Art and Science.

CIUHCT

INTERUNIVERSITY CENTER FOR THE HISTORY OF SCIENCE AND TECHNOLOGY

EXCELLENT

Evaluation (2019)

39

FTE researchers

1,23 M€

Funding FCT

KEYWORDS

History of Science, Technology and Medicine; Circulation, Appropriation and Innovation; Instruments, Practices, and Material Culture; Experts, Institutions and Globalization.

DESCRIPTION

Since its foundation in 2007, the CIUHCT has established itself as a reference unit in the history and material culture of Science, Technology and Medicine (HCTM) in Europe and the best positioned in Portugal to dialogue with researchers on the international scene, including USA. Classified as Exceptional in 2014, and Excellent in 2019, currently hosting two ERC, H2020 projects, two FCT projects and two FCT exploratory projects. By bringing together in the same research unit and under the same conceptual framework a set of diversified topics, the CIUHCT presents itself as a vanguard center in the area of HCTM, offering the best conditions to develop research in the areas of History of Science, Technology and Medicine. CIUHCT is an interuniversity centre hosted by FCUL (building C4, floor 3) and at FCT/NOVA (building VII, floor 2) that provide office spaces, benefitting from the IT facilities and specialized libraries existing at both institutions. CIUHCT at FCUL is administrated by FCIências.ID and at FCT/NOVA by NOVA.ID.FCT.

STRATEGIC AIMS

CIUHCT's scientific strategy encompasses four main scientific goals: 1) to inscribe HSTM in Portuguese and European history, by unveiling the importance of STM in the construction of Europe; 2) to increase the presence of Portuguese HSTM studies in the international map of the discipline; 3) to foster a transdisciplinary STM approach, by bringing together scholars of different areas; 4) to assess contemporary issues through

HSTM lenses, using history, material culture, and public culture (CIUHCT is among the few European research units to encompass these 3 dimensions) as basis for policy making, and as a showcase for European citizenship and identity building.

MAJOR AREAS AND LINES OF RESEARCH

Instruments and Practices, Visual and Material Cultures. It addresses STM actors and practices, objects, and their representations, including but not restricted to instruments, with a view to contribute to a renewed history of knowledge, encompassing scholarly and artisanal forms, bridging traditional conceptual, socio-professional and disciplinary barriers, and contributing to recent historiographical debates. Experts, institutions and globalization. Aims at building an integrated historical narrative by focusing on the co-production of STM knowledge and its various forms of circulation and the political agendas of the various political regimes in Portugal and its colonies since the 18th century. It is particularly suited to enlighten contemporary hot topics such as innovation, knowledge and reflexive societies, through the seldom used, but extremely useful, lenses of history, philosophy and sociology of STM.

**COORDINATOR**

Ana Duarte Rodrigues
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ciuhct.org

CIAUD

RESEARCH CENTRE FOR ARCHITECTURE, URBAN PLANNING AND DESIGN

**VERY GOOD**

Evaluation (2019)

171

FTE researchers

2,75 M€

Funding FCT

KEYWORDS

Architecture; Urban Planning; Design; Ergonomics.

DESCRIPTION

CIAUD is based at the Lisbon School of Architecture of the Universidade de Lisboa (FA-ULisboa), and was established in 2006. The Centre has a cohesive and diverse team of collaborating and integrated Researchers, which includes professors and PhD students at the FA-ULisboa and of PhDs from other Schools. CIAUD is managed by an Executive Committee and supported by a group of Consultants with recognized international merit in CIAUD's areas of focus. CIAUD's mission is to promote the production, development, and innovation of scientific, technological, and artistic knowledge in four units – architecture, urbanism, design, and ergonomics –, which interact with other disciplinary areas, as well as with teaching and with society as a whole, enabling their intersection by means of more than 20 trans- and interdisciplinary Research Groups. Linking research to local society and to the needs of decentralized regions, and promoting dynamism in regions of Portugal where it is still difficult to develop research, CIAUD has extended its activity to four Poles that establish the beginning of a network at a national level, with the intention of contributing to the creation of future research centres. CIAUD is also supported by several technical structures, including a support team, a Library, and Workshops, as well as 3D Scanning, Rapid Prototyping, Colour, Textile and Ergonomics and User Experience Laboratories.

STRATEGIC AIMS

For 2020-2023, CIAUD has set 5 strategic aims: promoting the transversality and critical dimension of research projects and their integration in research groups, as well as establishing partnerships; guiding the publications towards indexation and disseminating the production to the scientific community, civil society, and other stakeholders; promoting scientific research in Lusophony; offering better support structures to the Researchers; making the centre Excellent.

COORDINATOR

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**MEDICAL AND
HEALTH SCIENCES**

CCUL CARDIOVASCULAR CENTRE AT THE UNIVERSITY OF LISBON

CCUL is a member of Associated Laboratory RISE - Health Research Network: From the Lab to the Community.

VERY GOOD

Evaluation (2019)

32

FTE researchers

0,70 M€

Funding FCT

KEYWORDS

Cardiovascular diseases; Cardiovascular research; Cardiovascular disease prevention; Cardiovascular therapeutics; Cardiovascular diagnosis.

DESCRIPTION

The Centro Cardiovascular da Universidade de Lisboa (CCUL) is a biomedical research institute committed to improve the understanding of cardiovascular disease (CVD) processes by following the standards of excellence in research, clinical care and medical education. As a research center of the Lisbon School of Medicine, Universidade de Lisboa (FMUL), CCUL integrates the Academic Medical Center of Lisbon, together with the Santa Maria University Hospital (HSM-CHLN) and the Instituto de Medicina Molecular (iMM). It provides a vibrant environment to share both new ideas and research platforms. In 2019, CCUL was evaluated by the FCT, achieving a Very Good grade. In 2021, CCUL integrated the RISE, a consortium with CINTESIS, UnIC – Cardiovascular Research Unit and the CI-IPOP (IPO Porto Research Center – IPO-Porto). RISE was awarded with the title of Laboratório Associado. CCUL's main goal is to translate cardiovascular research discoveries into the development of new strategies to prevent CVD and improve patient management. Since CVD is the world's leading cause of death, CCUL promotes scientific literacy, educating people to prevent and control CVD and conducting actions in schools.

STRATEGIC AIMS

CCUL, a biomedical research institute, is committed to advance the understanding of cardiovascular disease processes to improve health care. Translational Research, Medicine and Education are at the core of CCUL's strategy. CCUL is having an impact on the cardiovascular field at the European level and

aims to be recognized as a national reference for excellence in the cardiovascular field. To pursue its mission, it will strengthen its basic and clinical research portfolio, aiming at increasing its sustainability and scientific/socio-economic impacts, through translational projects and entrepreneurship initiatives. It plans to achieve these goals by i) improving excellence in its science; ii) strengthening national collaborations, thus being more competitive in attracting national funding; iii) increasing its worldwide scientific network to internationalize science, medicine and education. Its main challenges are i) to recruit new talented senior and young exclusive researchers to drive translational research in the proposed Research Programs; ii) to continue to provide high-quality training; iii) to be more competitive in attracting national and international funding and researchers under effective collaborations; and iv) to increase and strengthen its worldwide scientific network.

MAJOR AREAS AND LINES OF RESEARCH

CCUL includes basic and clinical research in cardiovascular medicine and embraces strong Research Programs dedicated to particular disease states with a huge impact in cardiovascular system such as but not limited to: i) Heart Failure (HF), the new cardiovascular epidemics in developed countries. Reducing morbidity and mortality in HF remains the main objective; ii) Valvular heart disease and pulmonary hypertension represent important clinical subjects; iii) Cardiac rhythm abnormalities that are extremely frequent either in association with structural heart disease or in idiopathic form; iv) Genetic Cardiomyopathies, an important cause of sudden cardiac death in



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ISAMB ENVIRONMENTAL HEALTH INSTITUTE

ISAMB is a member of the Associated Laboratory TERRA – Laboratory for Sustainable Land Use and Ecosystem Services.

VERY GOOD

Evaluation (2019)

50

FTE researchers

0,78 M€

Funding FCT

KEYWORDS

Environmental Health; Health Promotion; Prevention / health-supporting environment; Non-communicable diseases; Eco-genetics.

DESCRIPTION

The Institute of Environmental Health is a research centre established by the Lisbon School of Medicine (FMUL) since July 23rd, 2013, entirely devoted to Environmental Health. Through funding contract with the Fundação para a Ciência e a Tecnologia (FCT), ISAMB is also a FCT Research Unit since 2014, having received the classification of “Very Good” after its first formal evaluation since ISAMB's creation. Since 2021, ISAMB is also part of the TERRA Laboratory, a consortium which entails five R&D units, whose status was granted by FCT. The institute assumes a wide perspective of “environment” (physical, chemical, biological, psychosocial, and digital). This vision is reflected in the scientific research carried out by its five research groups and two laboratories.

STRATEGIC AIMS

ISAMB assumes a multidimensional approach to environmental health that considers a broad set of environmental health determinants (e.g., psychosocial, digital, economic and political determinants of health), from both natural and human-made environments, under a Planetary Health paradigm. The translation of research findings into informed political decisions has been a main endeavour across ISAMB's research groups and labs. Health inequalities have also been a concern of the researchers in ISAMB. ISAMB is also giving encouraging steps in the study of how human behaviours affect environmental sustainability. In the near future, ISAMB is highly committed

to get its research closer to its main goal, to continuously foster synergies with other research units and groups, both national and internationally, as well as to foster scientific maturity and to grow as a research centre.

MAJOR AREAS AND LINES OF RESEARCH

Since its establishment, ISAMB has been expanding its scientific contributions on the understanding of the health impact of natural and artificial environments (including physical, interpersonal, social and digital dimensions). In ISAMB, research is led by five groups: “Supportive environments for public health and health promotion”, “Supportive environments for individuals' lifespan development”, “Environment and non-communicable diseases”, “Environment and infectious diseases” and “Ecogenetics and human health”, which is complemented and integrated by two labs: “Environmental Health Behaviour Lab” and “Environmental Health Microbiology Lab”.



COORDINATOR

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IMM INSTITUTE OF MOLECULAR MEDICINE

IMM has the status of Associated Laboratory.

EXCELLENT

Evaluation (2019)

193

FTE researchers

6,09 M€

Funding FCT

KEYWORDS

Development, Ageing and Systems Physiology; Neurosciences and Behaviour; Infection and Immunity; Chemical Biology and Biophysics; Molecular and Cellular Biology; Oncobiology and Clinical Sciences.

DESCRIPTION

Created in 2002, IMM has established itself as a leading national and internationally competitive biomedical institute. Its strategy has been defined by promotion of excellence, leveraged by high-quality human resources, increasing expenditure in infrastructures and knowledge transfer to the society. IMM is an inclusive, equal opportunity employer offering attractive conditions and benefits. Our mission is to promote basic biomedical, clinical, translational and innovation research in these areas, with the aim of contributing to a better understanding of disease mechanisms, to develop new diagnostic or predictive tests as well as new therapies. In addition, to support postgraduate scientific training of young graduates, doctors and other health professionals and to support scientific dissemination and the provision of services abroad in the areas of specialized diagnosis, quality control and collaboration in National and International Commissions related to Health.

STRATEGIC AIMS

Our overarching mission at Instituto de Medicina Molecular João Lobo Antunes (iMM) is the promotion of scientific excellence, leveraged by top quality human resources that are supported by state-of-the-art infrastructures. Building on our previous experience and success, we have defined an ambitious strategy for iMM for the coming quinquennium, laid upon three major OBJECTIVES: 1. To promote SCIENTIFIC EXCELLENCE; 2. To nurture ADVANCED TRAINING AND CAREER DEVELOPMENT; and 3. To galvanize TRANSLATION FOR HUMAN HEALTH. Finally, we aim to share our discoveries and enthusiasm in a range of public events and activities, thus contributing constructively to public debate about the direction, purpose and implications of biomedical research. Our vision and strategy for the future will be supported and strengthened by our novel management and governance processes. The single most important fingerprint of our institute is the HORIZONTAL ORGANIZATION of independent research laboratories, supported by technical and administrative services, without any departmental boundaries.

MAJOR AREAS AND LINES OF RESEARCH

iMM's thematic lines entail groundbreaking projects in order to increase the competitiveness of research in Portugal towards the European and international benchmarks of scientific excellence, creating scientific and medical impact beyond its borders. It further promotes the transfer of knowledge to society and international collaborations of excellence to improve health research and, ultimately, the health of the citizens. Therefore, our main goal is to foster new and disruptive discoveries, creating room for bold initiatives that cannot be anticipated today within 4 thematic lines – Molecular and Cellular Biology; Development, Ageing and Cancer; Infection and Immunity; Neurosciences and Behavior - with research agendas deeply aligned with the national public policies for R&D in the area of Health.



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CIPER INTERDISCIPLINARY CENTER FOR THE STUDY OF HUMAN PERFORMANCE



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VERY GOOD

Evaluation (2019)

60

FTE researchers

1,36 M€

Funding FCT

KEYWORDS

Sports Practice; Physical Activity, Sedentary Behaviour and Health; Bio-behavioral interventions; Exercise Physiology; Neuromuscular Biomechanics; Exercise and Sport Psychology.

DESCRIPTION

The Interdisciplinary Centre for the Study of Human Performance (CIPER) was classified as “Very Good” and is located at the Faculty of Human Kinetics (FMH), University of Lisbon. It includes above 60 doctorate-level investigators and more than 40 PhD students. CIPER has promoted interdisciplinary research synergies by applying multidimensional and bio-psychological models for the understanding of human behavior and performance determinants and their optimization in different contexts, taking into account the lifespan and human diversity, including disability. Human development, motor behavior, self-regulatory processes, and aging mechanisms have been studied in order to promote health and well-being, as well as performance improvement within the contexts of family, community, education, health, work and sport. CIPER's four research groups research on: BIOLAD – Experimental and analytic models of performance analysis, training monitoring, and tracing and explaining expertise; Neuromechanics – experimental and modeling methodologies for the evaluation of mechanical load and musculoskeletal adaptation; Self-Regulation - processes regulating the adoption of healthy lifestyles and development of motivational behavioral interventions; Healthy Weight - Diagnostic methods, identification of mechanisms, and design of intervention models and strategies for the prevention and treatment of non-communicable chronic diseases through improved physical activity, and reduced sedentary behavior.

STRATEGIC AIMS

CIPER aims are to generate new knowledge about physical activity, sport training, and sedentary behaviour by developing measurement tools, investigating mechanisms and sensitive periods, and by translating research outcomes into health policies, and healthy sport practices tailored for the individual and community approaches. Innovative methodologies emerge from using existing knowledge and technology from biomechanics, systems biology, ecological psychology and behavioural change theories and methods and applying them into an integrated approach. Linking societal problem solving with cutting edge scientific knowledge in collaboration with well-established networks in government and non-government organizations at multiple levels (community, state, national, and international), as well as with peak bodies and industry networks, CIPER facilitates expedited and effective transfer of knowledge, having a global impact.

MAJOR AREAS AND LINES OF RESEARCH

The Healthy Weight group research topics include: a) To identify mechanisms and dose-response outcomes for priority chronic diseases; b) To identify critical and sensitive periods of risk factor exposure during the life course; c) To develop evidence-based intervention to test the feasibility and effectiveness of augmenting the number of breaks on sedentary behavior; d) To develop an innovative age-appropriate, interactive

web-based platform with online resources and tools for assessing, monitoring and providing feedback to children and older adults on sedentary behavior, physical activity and health-related fitness. The (BIOLAD) have three foci of investigation, namely “Exercise effects on body morphology, biological maturation, and fatigue”, “Neuromuscular control and motor adaptation to exercise”, and “Expertise in physical activity and sport”. The Self-Regulation in Physical Activity, Nutrition and Obesity key objectives are: i) to identify and evaluate self-regulation and motivational processes underlying volitional physical activity and eating behaviors and ii) to develop and test interventions aimed at lifestyle change, chronic disease prevention, health and well-being, across the lifespan. The Neuromechanics in Human Movement has developed the following research lines: i) In-vivo and in-silico methodologies for the study of the neuromusculoskeletal system; ii) Biomechanical factors of sports performance, injury prevention and return to practice; iii) Prognostic biomechanical factors for changes in mobility; and iv) Assessment methodologies and intervention studies.

IMED.ULISBOA

RESEARCH INSTITUTE FOR MEDICINES

VERY GOOD

Evaluation (2019)

115

FTE researchers

2,15 M€

Funding FCT

KEYWORDS

Precision therapies and technologies; Biomarkers and diagnosis; Genetics, immunology and neurosciences; Medicinal chemistry and protein engineering; Pharmaceutical technology; Pharmacology, pharmacy and regulatory science.

DESCRIPTION

The Research Institute for Medicines (iMed.ULisboa) (<http://www.imed.ulisboa.pt>) is a multidisciplinary R&I Unit in Life and Health Sciences, supported by FCT and hosted at Faculty of Pharmacy. Its mission is to develop innovative medicines and benefit human health through top-class multidisciplinary research, technology and innovation. Capabilities are built around a network of 30 research groups, spanning the drug discovery and development spectrum, with an emphasis on innovative, multidisciplinary, and collaborative research. iMed.ULisboa hosts 232 researchers, 97 PhD students, and 8 technicians and administrative collaborators. In the last 5 years, 829 papers were published in SCI journals, 34 patents were produced, 92 PhD theses were concluded, and 91 projects were active. iMed.ULisboa leads one FCT PhD Programme (<http://www.ff.ul.pt/phd3duul/>) in collaboration with industrial partners, and participates in 5 other FCT PhD programmes. Partnering in several international networks and consortia, iMed.ULisboa promotes national productivity and competitiveness in drug discovery and development, and facilitates interactions with universities, research institutes, biotechs, pharma and general public.

STRATEGIC AIMS

iMed.ULisboa supports translational science, brings pharmaceutical and biomedical creativity studies and application of science for public health benefit. The methodology covers the fields of science and offers a cross-cutting, integrative view of biology,

chemistry, and pharmaceutical sciences. Several groundbreaking innovations and strong technologies are now driving mechanistic breakthroughs in biology and medicinal chemistry that could theoretically make molecular searches more effective and improve drug discovery and development progress. Such methods however also raise considerable conceptual, technical and organizational challenges. iMed.ULisboa seeks to recognize robustly applied methods and innovations and to objectively examine opportunities and obstacles for their widespread use. Specifically, we focus on supporting scientific platforms that promote research indoors and outdoors, provide opportunities for sharing our findings, facilitate collaboration with academic and industry partners, and attract new talent and young students. iMed.ULisboa will continue to promote an ecosystem that nurtures and rewards creative translational science and technology research initiatives committed to enhancing human health. We aim to consolidate iMed.ULisboa as a new centre that establishes strong alliances with industrial partners and the health care sector to translate knowledge to the society.

MAJOR AREAS AND LINES OF RESEARCH

ReScientific Hub: We alleviate the societal burden of complex human diseases by engaging in continuous innovation that integrates chemistry, biology and pharmaceutical sciences. Multidisciplinary teams collaborate daily to develop pioneering tools and techniques to prevent, detect and treat cancer, neurodegenerative, metabolic and infectious diseases. Technological Hub: A

**COORDINATOR**

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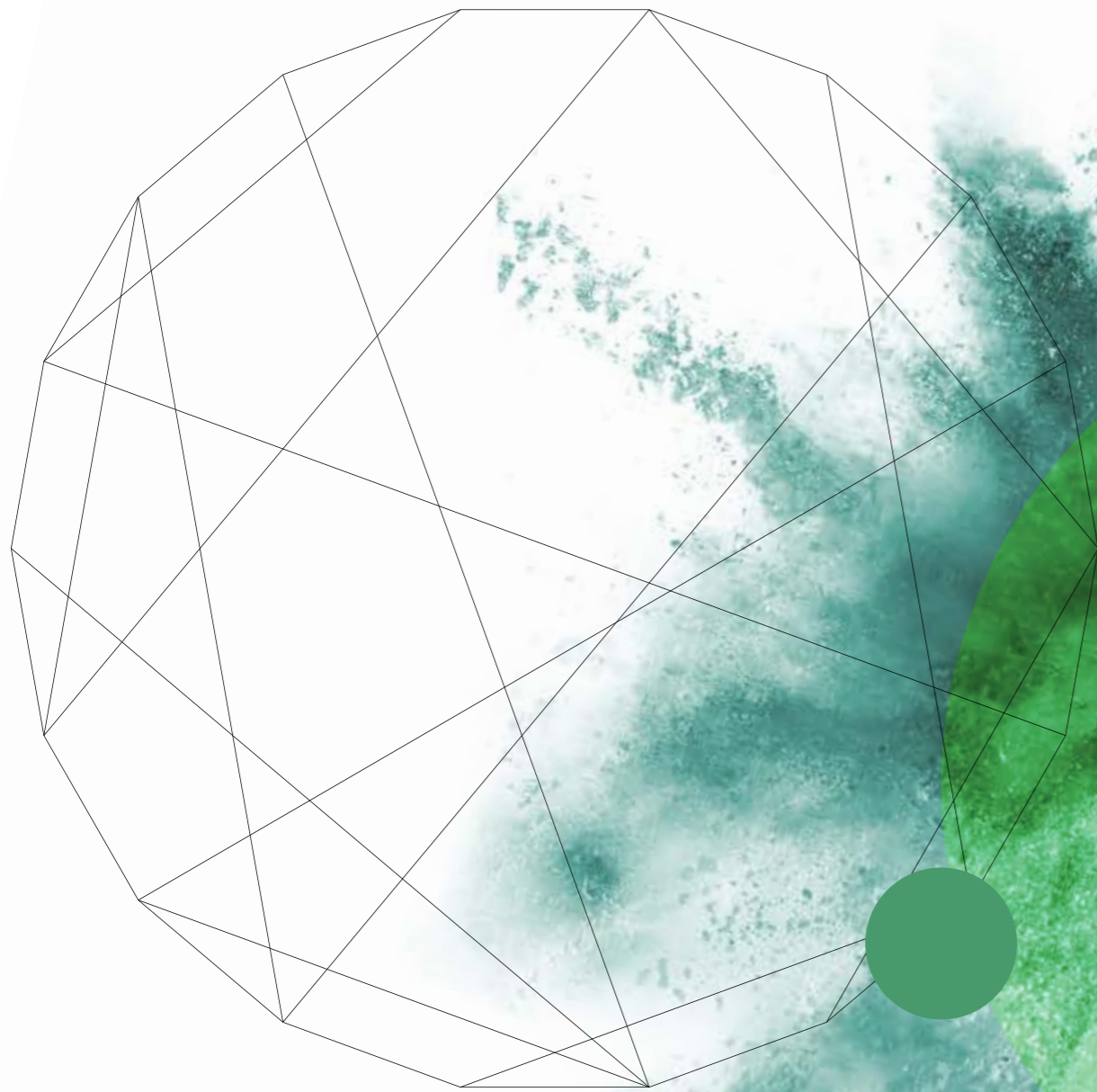
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network based on strong partnerships between our scientific community, biopharmaceutical companies and the Healthcare sector transforms innovative research and technologies into useful everyday products and life-saving medicines. Translational Hub: We are deeply committed to advance pharmacotherapy innovation and access to it by people living with illness by developing disruptive translational research to benefit human health, by converging our fundamental science discoveries into applied research. This is driven by the joint efforts of our institute with multiple players within the Healthcare sector.





**NATURAL
SCIENCES**

UICOB

BIOMEDICAL AND ORAL SCIENCES RESEARCH UNIT

FMD is a member of LIBPhys – Laboratory for Instrumentation, Biomedical Engineering and Radiation Physics.

VERY GOOD

Evaluation (2019)

46

FTE researchers

0,94 M€

Funding FCT

KEYWORDS

(LIBPhys): Radiation Physics; Biomedical Engineering; Fundamental Parameters; Analytical Methods; Instrumentation.

DESCRIPTION

UICOB is the FMDUL research unit and supports its master and PhD programs. It is directed by a coordinator, seconded by a council formed by the principal investigators of the 6 groups: BIOMAT (Dental Biomaterials), GIBBO (Oral Biology, Biochemistry and Microbiology); GIMPLANT (Bone Physiology and implants); FORENSEMED (Forensic Sciences); GIORTO (Orthodontics): Oral Public Health and Epidemiology. UICOB's vision is Improving human quality of life through excellence in oral and biomedical research, its objective: the creation, transmission and dissemination of knowledge in the domains of Dentistry, Health Sciences and Technologies in accordance with three priority axes: Increasing knowledge, innovation and applicability of the research carried out; Promotion of undergraduate and graduate education; The creation of national and international research and development networks.

STRATEGIC AIMS

In the past five years a considerable research effort development at FMDUL has been undertaken. This resulted in an increased high-quality research output expressed in impact publications. In the next 3-5 years considerable strategic efforts should be undertaken to create an integrated research environment within UICOB research unit which is clear and attractive to researchers in order to accommodate every research activity. Foster and strengthen team-based research. Establish strong network links at both

national and international levels. Develop translational research with strong community impact Increase knowledge dissemination and research visibility within researchers, population and stakeholders' communities. Enhance research funding.

MAJOR AREAS AND LINES OF RESEARCH

Physically, the UICOB is located in the building of the FMDUL and the laboratories are divided in 4 sections: a) Dental biomaterial's characterization and evaluation b) Oral Biology and Biochemistry, c) Oral Microbiology; and d) Oral Histomorphology. There are also 3 dental clinics where clinical research can be performed. Research activity spans from fundamental through purely clinical with some translational bridging projects. Main areas of research are Dental Biomaterials, Oral Biology, Biochemistry and Microbiology; Bone Physiology and implants; Forensic Sciences; Orthodontics and Oral Public Health and Epidemiology.



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BIOISI

BIOSYSTEMS AND INTEGRATIVE SCIENCES INSTITUTE



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GOOD

Evaluation (2019)

131

FTE researchers

2,00 M€

Funding FCT

KEYWORDS

Molecular Systems Biology; Integrative Sciences; Quantitative Biology; Bioinformatics & Computacional Modelling.

DESCRIPTION

The vision of BioISI, a new institute created in 2015 (<http://www.bioisi.pt>) is to pursue cutting-edge research on biosystems and integrative sciences to become the leading centre at the forefront of research in this area in Portugal and internationally. BioISI's goal is to understand and address biological questions using integrative -Systems- approaches at the vanguard of life sciences research. Its researchers benefit from a unique multidisciplinary environment that fosters creative thinking to solve problems through integrative approaches. To achieve its vision BioISI pursues 5 major missions: 1) Research in BioSystems & Integrative Sciences; 2) Technology & Instrumentation; 3) Facilities & Services; 4) Teaching & Training; and 5) Knowledge/Technology Transfer.

STRATEGIC AIMS

BioISI's Strategic objectives: 1) Taking a lead role in Biosystems/Integrative Sciences research nationally and internationally; 2) Driving research and progress through technology development and innovation; 3) Training next generation of scientific leaders on Biosystems/Integrative Sciences; 4) Providing research facilities and services to BioISI researchers and externally; and 5) Become a major player in industry partnerships and technology transfer for life sciences. To achieve its strategic goals BioISI proposes: 1) Strengthen BioISI research, technology & innovation by hiring new researchers; 2) Reinforce training of junior and PhD students and young postdoc researchers; 3) Invest in core-facilities to serve

internal, external researchers or companies; 4) Stimulate scientific dissemination by organizing conferences, seminars, workshops, courses; 5) Foster scientific/technological culture on society by promoting multiple outreach events; and 6) Encourage translation of research results to society, establishing BioISI-Industry Partnership.

MAJOR AREAS AND LINES OF RESEARCH

BioISI's strategic objectives will be implemented along BioISI's 5 main Thematic Lines: Biomedicine; Biotechnology; Biological Chemistry; Bioinformatics; Biological Physics with the goal of contributing to 3 main projects: 1) Crop/product improvement & contributions to bioeconomy: grapevine & wine; 2) Systems approaches to rare diseases: Cystic Fibrosis and neurodegeneration; and 3) Enabling technologies: to boost innovative research in biological systems.

CENTRA

CENTER FOR ASTROPHYSICS AND GRAVITATION



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centra.tecnico.ulisboa.pt

EXCELLENT

Evaluation (2019)

33

FTE researchers

0,92 M€

Funding FCT

KEYWORDS

Astrophysics; Gravitation.

DESCRIPTION

CENTRA, the Center for Astrophysics and Gravitation, is a research unit based at Instituto Superior Técnico with a pole at the Faculty of Science, University of Lisbon. CENTRA hosts 9 permanent faculty, 17 researchers either postdoctoral researchers or FCT investigators, and CENTRA is currently supervising 18 PhD students. CENTRA has three main scientific areas: Gravitation (GRIT), Cosmos and Stars (COSTAR) and Scientific and Space Instrumentation and Modeling (SIM). CENTRA's main themes of research are black holes, gravitational waves, the big bang and the accelerating universe, inflationary cosmology, supernovae, solar physics, and stars. Researchers at CENTRA represent over 12 nationalities and 3 continents. CENTRA hosts over 50 visitors each year. CENTRA has grown to be an international leading research centre in Astrophysics and Gravitation. It hosts the only ERC grantee in theoretical physics in the country (Cardoso), 3 (out of 8) Portuguese Outstanding APS Referees (Lemos, Potting, Cardoso), 2 (out of 5) University Outstanding Researchers in Physics (Lemos, Cardoso). The CENTRA scientific research is regularly covered in the press and, only in the last year, its members were invited to more than 30 plenary talks and colloquia worldwide. CENTRA has been hosting projects totaling over 2 M€, including an ERC CoG, and Marie Curie IRSES and RISE grants for the exchange of researchers. CENTRA participates in the ESA LISA mission for gravitational wave detection. CENTRA has developed expertise on black holes and fundamental physics and has one of the few groups worldwide skilled in numerical relativity and applications to astrophysics and high energy physics. CENTRA is partner in instrumentation for ESO telescopes, including GRAVITY and the METIS ELT instrument. CENTRA members

develop novel visualization techniques and data classification algorithms for the ESA Gaia satellite. CENTRA participates in OPTICON EU program. CENTRA leads projects for studying the impact of dark matter in stars and to constrain dark matter properties. An ESO project led by CENTRA uses polarimetry and field spectroscopy to study supernovae and their host galaxies. CENTRA has strong formal ties to various groups worldwide and is actively engaged in international research exchange programs. CENTRA's infrastructure includes a Gigabit network and computer cluster, the Baltasar Sête-Sois. The cluster is used regularly by over 20 groups worldwide, including Cambridge, Paris, and Kyoto. CENTRA's infrastructure also includes a computer cluster for Gaia, optics, cryogenics, and mechanical workshops.

STRATEGIC AIMS

The strategy CENTRA follows is scientific and is related to the following projects. 1. Fundamental physics with gravitational waves. CENTRA is a recognized leader in tests of general relativity and of fundamental physics with gravitational waves. Among these issues, stand the connection with dark matter physics and tests of the nature of compact objects. 2. The Gaia mission: ground segment and gravitational waves. CENTRA is involved in the Gaia mission of ESA. Gaia is surveying one billion stars in our Galaxy and local galactic neighbourhood, in order to build a precise 3D map of the Milky Way. 3. Numerical relativity. CENTRA has a strong tradition in numerical relativity. The numerical construction of spacetimes allows to study gravitation in the strong field regime. 4. Fundamental physics and black holes. CENTRA is a world authority in the field of black holes and fundamental physics. An important issue is the understanding of

black hole entropy and its connection to the Hawking radiation. 5. Stars, dark matter, and fundamental physics. CENTRA continues to test the fundamental laws of nature using stars and the current astrophysical observations together with experimental physics data. 6. Measuring the acceleration of the Universe. CENTRA is participating on the determination of the cosmological parameters and the equation of state of the universe. 7. Next generation flagship missions. CENTRA has been actively engaged in the development of the future flagship missions METIS and LISA. CENTRA is a consortium partner of METIS, i.e., Mid-Infrared E-ELT Imager and Spectrograph, which is the only first light instrument for the new Extreme Large Telescope of ESO, with a Portuguese participation. We are performing the design, manufacture and testing of the METIS warm support structure. We also participate in the METIS data analysis pipeline, science case and through guaranteed time in the observations of supermassive black holes and galactic astrophysics. CENTRA is involved in LISA, i.e., Laser Interferometer Space Antenna, an ESA mission. 8. The galactic centre and GRAVITY. CENTRA is a member of the GRAVITY consortium of ESO. GRAVITY is observing the galactic centre, also called Sagittarius A*, in particular the orbit of stars around the central supermassive black hole.

MAJOR AREAS AND LINES OF RESEARCH

The main research scientific areas at CENTRA are: 1. Physics and Astrophysics of black holes 2. Gravitational waves. 3. The Big bang, the inflationary universe, cosmology and cosmogony. 4. Supernovae. 5. Stellar physics and astrophysics. 6. Dark matter. 7. The Milky Way. 8. Instrumentation and astronomy.

CEMAT

CENTER FOR COMPUTACIONAL AND STOCHASTIC MATHEMATICS



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ceamat.tecnico.ulisboa.pt

VERY GOOD

Evaluation (2019)

35

FTE researchers

0,87 M€

Funding FCT

KEYWORDS

Algebra and Computing; Applied and Numerical Analysis; Mathematical Modelling in Biomedicine; Statistics and Stochastic Processes.

DESCRIPTION

The main purpose of CEMAT is to engage in high quality interdisciplinary research and advanced graduate education in fundamental, computational and stochastic mathematics with a particular focus on cultivating emerging applications in the sciences and engineering, cooperating actively with the Industry. While promoting the scientific enrichment of its researchers in collaboration with scientists of different areas, including computer scientists, engineers, economists, biologists and medical doctors, CEMAT has a strong educational activity in the scientific training of young postdoctoral fellows, graduate and undergraduate students. CEMAT's research areas comprise Algebra and Computing, Applied and Numerical Analysis, Mathematical Modeling in Biomedicine, Statistics and Stochastic Processes. A major specificity of CEMAT is the emphasis on biomedical applications through the mathematical modeling and simulations of complex physiological processes.

STRATEGIC AIMS

We have been collaborating with other national and foreign specialists, and it is our objective to strengthen this collaboration; within the scope of our budget we have planned a post-doc scholarship program; increasing the number of young people who work with the group is part of our plan too and this is happening, in particular we try to allocate some masters scholarships within our budget; we participated in calls for project financing, and are part of some approved projects, and this aim should be reinforced.

MAJOR AREAS AND LINES OF RESEARCH

a) Algebra and Computing: groups, semigroups, finite automata, and graphs, relating algebra with theoretical computer science; b) Applied and Numerical Analysis: analytic, numerical and computational aspects, and often its integration, to achieve efficient numerical algorithms; c) Mathematical Modeling in Biomedicine: development of appropriate mathematical and numerical models for large-scale computational simulations of the human cardiovascular system; and d) Statistics and Stochastic Processes: research focused on several areas of applied statistics and stochastic processes.

CEAFEL

CENTER FOR FUNCTIONAL ANALYSIS, LINEAR STRUCTURES AND APPLICATIONS



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ceafel.tecnico.ulisboa.pt/

GOOD

Evaluation (2019)

29

FTE researchers

0,32 M€

Funding FCT

KEYWORDS

Algebras and Operator Theory; Algebras and Representations; Harmonic Analysis and Function Spaces; Matrices and Linear Systems.

DESCRIPTION

The Center for Functional Analysis, Linear Structures and Applications, CEAFEL, is a research center devoted to fundamental research in Mathematics. The CEAFEL main objective is developing research in Functional Analysis, Representation Theory and Matrix Theory, as well as exploring relations with other areas of Mathematics and applications to Physics and Engineering. CEAFEL aims to contribute to research mainly in the areas of Operator Theory, Operator Algebras, Harmonic Analysis, Matrix Theory, Multilinear Algebra and Representation Theory. It has a high commitment in the development, in those areas, of a significant research community. CEAFEL is a research unit integrated at Instituto Superior Técnico, IST, with a branch at Faculty of Sciences, FC, and has members from IST, FC, and also from other Portuguese universities. It is organized into two groups: The Group for Functional Analysis-IST and the Group for Linear, Algebraic and Combinatorial Structures-FC. Researchers of CEAFEL maintain an active interaction with international groups and researchers working in the areas of the Center. These relationships have been developed on a regular basis with researchers in Austria, China, France, Georgia, Germany, Iran, Italy, Mexico, Spain, Russia and USA.

STRATEGIC AIMS

CEAFEL is organized into two areas: Functional Analysis and Linear Algebraic and Combinatorial Structures. Over the last few years the Group for Functional Analysis has had the strategy of conducting research

primarily in six lines: (i) Operator Algebras and Index Theory; (ii) Harmonic Analysis and Function Spaces; (iii) Riemann-Hilbert problems and Analytic Function Spaces; (iv) Convolution type Operators and Singular integral operators with shifts; (v) Application of Operator Theory to Mathematical Physics; and (vi) Applications to Numerical Analysis and Computational Algorithms. The research strategy of the Group for Linear Algebraic and Combinatorial Structures has been directed for developing research mainly in the areas of Algebras and Representation Theory; Matrix Theory; Control Theory and Linear Systems, and Multilinear Algebra. Other topics are: Calabi-Yau triangulated categories; graphs and hypergraphs; Riordan matrices; combinatorial study of polynomials; game theory and combinatorics. Each group has specific strategies although it is an objective of CEAFEL to further promote collaborations between the Groups. The strategy for the future is the consolidating of the CEAFEL as a Center at the University of Lisbon with two central components, one in Operator Theory and Operator Algebras and another in Matrix Theory and Representation of Groups. The main challenge is to achieve the CEAFEL goal of becoming an international reference Center in Functional Analysis, Representation Theory and Matrix Theory.

MAJOR AREAS AND LINES OF RESEARCH

The most recognized lines of investigation in CEAFEL's activity are: i) Variable exponent Holder, Morrey-Campanato spaces, grand spaces and operators of Harmonic Analysis; ii) Non local algebras of singular integral

operators, Fredholm theory of operators in these algebras; iii) Riemann-Hilbert problems, Operator Methods in Mathematical Physics particularly in diffraction theory; iv) Supercharacter Theories; and v) Matrix pencil completion problems related with Control Theory. In the future is CEAFEL's strategy to strengthen and broaden its current areas of research. Research will be carried out centrally in: a) Operator Algebras and Index Theory, and Harmonic Analysis and Function spaces; b) Supercharacters and superclasses of finite linear groups in a new approach that allows the study of geometric and asymptotic properties; and c) Linearizations of matrix polynomials, and study of matrices over abstract rings.

CAMGSD

CENTER FOR MATHEMATICAL ANALYSIS, GEOMETRY AND DYNAMICAL SYSTEMS



COORDINATOR

Miguel Tribolet de Abreu

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EXCELLENT

Evaluation (2019)

65

FTE researchers

1,85 M€

Funding FCT

KEYWORDS

Differential Equations and Dynamical Systems; Geometry and Topology.

DESCRIPTION

The Centre for Mathematical Analysis, Geometry, and Dynamical Systems is a research and scientific training unit developing its activity in mathematics with special emphasis on the aspects of nonlinear analysis, dynamical systems, geometry, and topology occurring in connection with areas relevant for several fields in science, engineering and applications. It is a goal of the Centre to invest in the development of research and post-graduate training in these areas through postdoctoral and visiting faculty appointments, as well as fellowships and assistantships for graduate students, and the conditions for research activities of its members at high international level.

STRATEGIC AIMS

It is a goal of the Centre to invest in the development of research and post-graduate training in its areas through postdoctoral and visiting faculty appointments, as well as fellowships and assistantships for graduate students, and the conditions for research activities of its members at high international level. The Centre's activities include a postdoctoral training program; a visitors program; weekly seminars; workshops; tutorials and summer schools targeted at advanced PhD students and post-doctoral fellows.

MAJOR AREAS AND LINES OF RESEARCH

Dynamical Systems and Differential Equations. Topics: qualitative theory of dynamical systems; geometric mechanics and Hamiltonian systems; methods of nonlinear analysis; ergodic theory; stochastic analysis and related topics. Geometry and Topology. Topics: symplectic and Poisson geometry; algebraic geometry; algebraic topology; differential geometry; discrete geometry. The research also addresses applications to problems motivated from mathematical physics such as general relativity, quantum field theory, string theory and quantum topology.

CMAF_{CI}O

CENTER FOR MATHEMATICS, FUNDAMENTAL APPLICATIONS AND OPERATIONS RESEARCH

VERY GOOD

Evaluation (2019)

59

FTE researchers

1,25 M€

Funding FCT

KEYWORDS

Nonlinear Analysis and Differential Equations; Operations Research; Logic, Geometry and Dynamical Systems; Applied and Industrial Mathematics.

DESCRIPTION

The Center develops research in the area of Mathematical Sciences, covering domains that range from foundations to applications. Its main objectives are to pursue deep studies in areas of mathematics, to train young researchers at several stages of their career, and to foster and develop applications to relevant problems in the Sciences and from Industry. Along with dissemination of scientific results, the unit promotes the communication of mathematics in schools and for the wider public.

STRATEGIC AIMS

For the next 3 years we intend to increase the number of young researchers and consolidate the current participation of our researchers, who participate in international networks. To reach these goals we intend to organize international events in Lisbon which consolidate the participation of our researchers in the international framework and promote the participation in international events of high quality. CMAF_{CI}O can also leapfrog the current seminars schemes in the area of Mathematical Analysis, Logic, Geometry and Operations Research into another level: have CMAF_{CI}O as a strong pillar in Portugal for these areas with the regular organization of schools and scientific discussions with more than one day with an international scope. Following the current strategy, we intend to open calls for graduates and for Master's, each year and the recruitment of one scientific researcher with a PhD degree. Research grants for students at entering level, such as research grant for students at graduate level and research grant

for students at Master level. The objective of these grants is to attract and maintain the best students acquainted with research topics and to allow them to develop and increase their skills. These grants allow students to enrol in the Master's and PhD programs in ULisboa as well as participating in research projects.

MAJOR AREAS AND LINES OF RESEARCH

The team deals with mathematical problems that currently attracting attention in several important areas such as Nonlinear Analysis, Differential Equations, Logic, Geometry and Operations Research. Moreover, some members of the unit will continue to tackle applications to real world problems. This feature and the areas involved both in theoretical and applied research provide a characteristic of CMAF_{CI}O which is singular among similar units. Members working in NONLINEAR ANALYSIS AND DIFFERENTIAL EQUATIONS will do research in ordinary and partial differential equations, with interest in nonlinear operator theory or the Calculus of Variations, and in several applications in Mathematical Physics and in Biomathematics. Among topics of research are specific equations, such as Navier-Stokes, Schrödinger and Kac-Boltzman, together with Kepler-type problems, functional-differential equations, kinetic theory of gases, phase field models, elastoplasticity, free boundary problems, shape optimisation, renormalisation and signal processing. The research in the areas of LOGIC (proof theory, model theory, o-minimality), GEOMETRY (D-modules, Wilmore surfaces, Hodge structures), DYNAMICAL SYSTEMS (Lyapunov exponents of linear cocycles) will be pursued

CMAF_{CI}O**COORDINATOR**

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CFTC

CENTER FOR THEORETICAL AND COMPUTACIONAL PHYSICS

CFTC**VERY GOOD**

Evaluation (2019)

13

FTE researchers

0,34 M€

Funding FCT

KEYWORDS

Soft Condensed Matter Physics; Non-Linear Dynamics and Waves; Particle Physics.



cftc.fc.ul.pt

DESCRIPTION

The Center for Theoretical and Computational Physics (CFTC) is a research unit focused on theoretical and computational physics, that leads nationally and is recognized internationally in the areas of Soft Condensed Matter and Non-linear Dynamics, with a complementary expertise on symmetry classification of dynamical and static field theories. Its research is held at a very high level, both in quantity and quality, contributing significantly to the visibility of Portugal in fundamental science and paving the way for new technologies in materials science and non-linear optics. CFTC is based at ULisboa having an excellent logistic support and a first-rate library. CFTC runs its own supercomputer with more than 1700 cores, recently upgraded with an infiniband network to run highly-efficient parallel jobs.

STRATEGIC AIMS

For the next five years, CFTC aims at maintaining a very high level of research, consolidating its international recognition and national leadership in Soft Condensed Matter and Non-linear Dynamics, as well as its position in Particle Physics. The attraction of new (iFCT) staff members and the steady increase in the number of students is an important part of our vision how to address new research questions of potential high-impact and extend the present network of national and international collaborators. Scientifically, we will pursue three main research streams: Collective properties, in particular dynamics of non-equilibrium and out-of-equilibrium soft matter systems;

Nonlinear waves in non-Hermitian optics, quantum gases, and microcavities; and Extensions of the Standard Model. Overall, we have a research plan with very-high potential impact combined with goals of moderate risk, to balance the scientific output. With a broad in-house expertise in theoretical and computational physics, our more-ambitious goals require synergies between different team members. The unit is organized without formal groups, to promote these synergies. CFTC will also look for complementary expertise, hiring new young researchers and postdocs and through a structured high-level visitors program. For the period of 2018-2022, we have designed an ambitious strategy to achieve four main objectives: to increase the attraction of the best PhD students and postdocs; to consolidate the team of staff members; to reinforce ongoing collaborations, especially those with experimental groups; and to explore more competitive funding opportunities, in particular those beyond FCT.

MAJOR AREAS AND LINES OF RESEARCH

Soft Condensed Matter Physics, Non-linear dynamics, and Particle Physics.

COORDINATOR

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CFTP

CENTER FOR THEORETICAL PARTICLE PHYSICS



VERY GOOD

Evaluation (2019)

18

FTE researchers

0,45 M€

Funding FCT

KEYWORDS

Theoretical Particle Physics; Theoretical Nuclear Physics; Fundamental Interactions; Standard Model of Particle Physics; Physics Beyond the Standard Model.

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cftp.ist.utl.pt/index.html

DESCRIPTION

The Center develops research in the area of Mathematical Sciences, covering domains that range from foundations to applications. Its main objectives are to pursue deep studies in areas of mathematics, to train young researchers at several stages of their career, and to foster and develop applications to relevant problems in the Sciences and from Industry. Along with dissemination of scientific results, the unit promotes the communication of mathematics in schools and for the wider public.

STRATEGIC AIMS

For the next 3 years we intend to increase the number of young researchers and consolidate the current participation of our researchers, who participate in international networks. To reach these goals we intend to organize international events in Lisbon which consolidate the participation of our researchers in the international framework and promote the participation in international events of high quality. CMAFcIO can also leapfrog the current seminars schemes in the area of Mathematical Analysis, Logic, Geometry and Operations Research into another level: have CMAFcIO as a strong pillar in Portugal for these areas with the regular organization of schools and scientific discussions with more than one day with an international scope. Following the current strategy, we intend to open calls for graduates and for Master's, each year and the recruitment of one scientific researcher with a PhD degree. Research grants for students at entering level, such as research grant for students at graduate level and research grant

for students at Master level. The objective of these grants is to attract and maintain the best students acquainted with research topics and to allow them to develop and increase their skills. These grants allow students to enrol in the Master's and PhD programs in ULisboa as well as participating in research projects.

MAJOR AREAS AND LINES OF RESEARCH

The team deals with mathematical problems that currently attracting attention in several important areas such as Nonlinear Analysis, Differential Equations, Logic, Geometry and Operations Research. Moreover, some members of the unit will continue to tackle applications to real world problems. This feature and the areas involved both in theoretical and applied research provide a characteristic of CMAFcIO which is singular among similar units. Members working in NONLINEAR ANALYSIS AND DIFFERENTIAL EQUATIONS will do research in ordinary and partial differential equations, with interest in nonlinear operator theory or the Calculus of Variations, and in several applications in Mathematical Physics and in Biomathematics. Among topics of research are specific equations, such as Navier-Stokes, Schrödinger and Kac-Boltzman, together with Kepler-type problems, functional-differential equations, kinetic theory of gases, phase field models, elastoplasticity, free boundary problems, shape optimisation, renormalisation and signal processing. The research in the areas of LOGIC (proof theory, model theory, o-minimality), GEOMETRY (D-modules, Wilmore surfaces, Hodge structures), DYNAMICAL SYSTEMS (Lyapunov exponents of linear cocycles) will be pursued

in smaller but very active subgroups. The research in OPERATIONS RESEARCH AND OPTIMISATION will concern topics like integer linear programming formulations based on convex-hull reformulations of subproblems for node/arc routing and network design; efficient dual decomposition techniques based upon the relaxation of the non-anticipativity constraints to solve models for network design; an exact algorithm for bi-objective integer linear problems based on the Tchebycheff metric. By their scope and reach, these contributions substantiate the profile of the Center in what concerns competences in mathematical sciences. A part of the research has a clearly applied or interdisciplinary character. It is the case of some members' involvement in mathematical studies of Epidemiology, the interest on theoretically anchored contributions to materials science, or on Optimization in Services and Industry (e. g. health, decision support system for rescue operations, fishery surveys, forest management, disjunctive programming in Chemical Engineering).

CEFEMA

CENTER OF PHYSICS AND ENGINEERING OF ADVANCED MATERIALS



CeFEMA is a member of the Associated Laboratory LaPMET - Laboratory of Physics for Materials and Emergent Technologies.

VERY GOOD

Evaluation (2019)

46

FTE researchers

1,12 M€

Funding FCT

KEYWORDS

Physics of Strong Interactions and Correlations; Condensed Matter; Nanostructured Materials and Nanotechnology; Engineering of Advanced Materials and Processes.



cefema.tecnico.ulisboa.pt

COORDINATOR

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DESCRIPTION

CeFEMA research will be focus on Topological Phases of Matter, Nanostructured Fluids and Soft Matter, Non-equilibrium Matter and Processes, Energy Conversion and Storage, Advanced Materials Micro and Nanofabrication, Artificial Organs, and Physics of Information and Quantum Technologies. Major advances in sustainable development require deep understanding of the underlying physical mechanisms associated to complex systems that frequently involve strong correlations between their constituent elements and the design and optimization of new advanced functional materials: the optimization of physical/chemical properties of nanostructured systems and their interaction with fluids is required to increase efficiency of membranes and potential use; the increase of renewable energy harvesting efficiency and the improvement of energy conversion and storage methods is strongly dependent on the development of new materials with enhanced performance; in information and communication technologies the ever-increasing need for bandwidth, storage capacity and new functionalities requires critical materials advances; the biological environment is extremely complex demanding biomaterials with advanced functional properties. Nanotechnologies, on the other hand, have now become enabling technologies for all the above domains. CeFEMA distinguish itself from other national research centres because it congregates researchers with the broad spectrum of expertise required to approach this challenge.

STRATEGIC AIMS

CeFEMA (Centre of Physics and Engineering of Advanced Materials) aims at achieving a high-level of transdisciplinarity leading to major advances in Condensed Matter Physics, Materials Science and Engineering. Also, a deep understanding of the underlying physical mechanisms and processes associated with the development of new materials demands for the establishment of models and the integration of theoretical knowledge, ab-initio calculations, and an increasing computation power.

CEABN

CENTRE FOR APPLIED ECOLOGY

"PROF. BAETA NEVES"

CEABN is a member of INBIO - Research Network in Biodiversity and Evolutionary Biology, an associate laboratory.

EXCELLENT

Evaluation (2019)

180

FTE researchers

4,98 M€

Funding FCT

KEYWORDS

Biodiversity; Evolutionary Biology; Conservation Biology; Landscape Ecology and Planning; Genomics; Global Change.

DESCRIPTION

The Centre for Applied Ecology "Prof. Baeta Neves" (CEABN) generates ecological knowledge to provide stakeholders (e.g. forest producer associations, hunting associations, public administration, industry, NGOs) with the scientific bases for responding to challenges related with the sustainable use of agro-forestry resources, and the conservation of biodiversity and ecosystem services. CEABN disseminates the scientific results through knowledge transfer as environmental education and other mechanisms (e.g. book publishing, organization of thematic courses and seminars, meetings of stakeholders). The research centre holds the name of Professor Baeta Neves (1916-1992), a pioneer in the field of Nature Conservation in Portugal, and a Professor at the School of Agriculture (ISA) of the Technical University of Lisbon, between the 1940's and 1980's.

STRATEGIC AIMS

The Centre for Applied Ecology "Prof. Baeta Neves" (CEABN) promotes scientific research in ecology applied to forestry and agricultural ecosystems, aiming to contribute to a sustainable management and use of the land, and the conservation of biodiversity and ecosystem services associated with agricultural and forestry uses.

MAJOR AREAS AND LINES OF RESEARCH

Biodiversity in Agricultural and Forest Ecosystems; Ecological Design and Landscape Architecture; Fire Ecology and Management; Wildlife Management; Agro-environmental Education and Dissemination of Research Results.



COORDINATOR

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CE3C

CENTRE FOR ECOLOGY, EVOLUTION AND ENVIRONMENTAL CHANGES

CE3C is a member of the Associated Laboratory CHANGE – Global Change & Sustainability Institute.

EXCELLENT

Evaluation (2019)

123

FTE researchers

3,01 M€

Funding FCT

KEYWORDS

Integrative Biodiversity Assessments; Evolution Under Environmental Changes; Climate and Global Changes; Mediterranean, Tropical and Island Ecology; Species and Ecosystem Management for Conservation; Science-Society Interfaces.

DESCRIPTION

cE3c is committed to a sustainable future. Our mission is to produce fundamental and applied science in Ecology, Evolution and Environmental Changes that integrates life and climate sciences. Our research examines and integrates all levels of biological organization, from organisms up to ecosystems, both natural and anthropogenic. We will carry on our pursuit of tools to assess and monitor impacts of global change on biodiversity, health and well-being. Our combined expertise and unique databases constitute fundamental repositories of knowledge for Portugal, the Macaronesian Islands, other Portuguese-speaking countries in Africa and South America, and the European Union. cE3c's mission recognizes that while producing knowledge is a crucial step to sustainable development, using this knowledge to effectively promote change is just as important. Our R&D will contribute to UN's Sustainable Development Goals. Thus, we will endure our praxis to combine research with education, outreach and knowledge transfer to the public and private stakeholders.

STRATEGIC AIMS

To contribute knowledge and action aimed at future sustainability, cE3c will intensify internationally recognized applied and fundamental science organized around six core thematic lines (see section 3): TL1 - Integrative ecological assessment of environmental change impacts on biodiversity; TL2 - Evolutionary processes that shape biodiversity and adaptation to

environmental changes; TL3 - Sustainable management strategies for high-nature-value farmlands; TL4 - Green and blue infrastructures for urban sustainability; TL5 - Human health: linking evolutionary history, environment and physiology; and TL6 - Climate services. Knowledge and expertise have been, and will continue to be during the next five years, leveraged by successfully integrating expertise between cE3c's 13 research groups, which published 106 inter-group collaborative papers between 2015 and 2018. Broadening international scientific collaborations is also a priority, expanding from our 41 recent and/or ongoing European projects and networks. cE3c's contribution to future sustainability also involves transforming knowledge into action by offering advanced training, engaging in outreach, promoting knowledge co-production and transfer to stakeholders, innovation, and policy advice. cE3c will continue to: support the generation of independent and motivated scientists; address crucial points raised by International and European Agendas and Institutions (such as the UN's Convention on Biological Diversity, UN's 17 Sustainable Development Goals, and the International Union for Conservation of Nature); support and inform governmental agencies at regional and international levels; and contribute to industry and ecosystem services optimization (e.g. microbial driven processes for agriculture and greenhouse gas reduction). We will continue to communicate science to non-specialist audiences, contributing to citizen-science programmes, exhibitions, and other broad-audience outreach activities.

MAJOR AREAS AND LINES OF RESEARCH

Six thematic lines: TL1 - Integrated ecological assessment of environmental change on biodiversity; TL2 - Evolutionary processes that shape biodiversity and adaptation to environmental changes; TL3 - Sustainable management strategies for high-nature-value farmlands; TL4 - Green and blue infrastructures for urban sustainability; TL5 - Human health: linking evolutionary history, environment and physiology; and TL6 - Climate services.



COORDINATOR

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ce3c.ciencias.ulisboa.pt

CESAM

CENTRE FOR ENVIRONMENTAL AND MARINE STUDIES

CESAM has the status of Associated Laboratory.

EXCELLENT

Evaluation (2019)

214

FTE researchers

5,61 M€

Funding FCT

KEYWORDS

Climate change awareness, management & adaptation; Environmental risk management & strategic planning; Biodiversity & ecosystem based management; Environmental biology & health; Marine ecosystems & resources; Sustainability, blue growth e circular economy.

DESCRIPTION

The CESAM-Ciencias is a pole of CESAM, which is currently based at the University of Aveiro. The mission of Centre for Environmental and Marine Studies (CESAM) is to develop innovative international research on environmental sciences and related risks, with emphasis on complex socio-ecological coastal systems and marine areas. The main objective of CESAM is to promote a more efficient use of terrestrial and aquatic (from catchment to the deep sea) environmental resources and a more competitive, resilient and sustainable economy, designed to endorse job creation and assure territorial and social cohesion. Furthermore, CESAM aims to develop transdisciplinary research to foster the scientific, societal and educational (graduate & postgraduate) impact of its research and innovation. CESAM focuses on the key priorities of the European 2020 strategy addressing climate action, environmental integrity, resilience and sustainability (SC5), and optimal and renewable use of biological resources (SC2). CESAM teamholds expertise in: a) Modelling and forecasting of atmospheric and hydrodynamic processes; b) Terrestrial and aquatic (including deep sea) biodiversity, mineral and energy resources, ecosystems structure, functions and services, and risk assessment from sub-cellular to ecosystem levels; c) Development and validation of environmental friendly technologies, analytical chemistry, marine geophysics, and ecotoxicological methods considering multiple stressors; and d) 'Omics' technologies and bioinformatics.

STRATEGIC AIMS

Strategically, CESAM seeks to maintain and promote the balance of its wide range of competences, and therefore the research is structured and organized along 5 transversal strategic thematic lines (TLs), which are made operational through 12 interconnected research groups (RGs). The complementarity of RGs allows CESAM to develop multi and interdisciplinary approaches to face environmental challenges contributing to the understanding, mitigation, adaptation and resolution of changes regional, national and global context.

MAJOR AREAS AND LINES OF RESEARCH

CESAM's excellence in research is focused on three pillars: I) Promote our investment in scientific employment and advanced training, to better empower younger researchers for employment opportunities; ii) leverage specific context research stimulated by social needs, and research and innovation driven by curiosity; predict economic growth and innovation and creating jobs supported by a society based on knowledge; iii) reinforce 'networking' and internationalization, taking advantage of the networks already in place and the investments made in infrastructure and equipment. The research carried out under the 5 thematic lines focuses on: i) the role of the environment as a determinant of human health; ii) products, services, models and innovative processes that can benefit the environment and human well-being, iii) the role biodiversity, structure and processes of ecosystems and the services they provide; and



COORDINATOR

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C2TN

CENTRE FOR NUCLEAR SCIENCES AND TECHNOLOGIES



CE3C is a member of the Associated Laboratory CHANGE – Global Change & Sustainability Institute.

VERY GOOD

Evaluation (2019)

75

FTE researchers

1,65 M€

Funding FCT

KEYWORDS

Nuclear Sciences and Technologies; Ionizing Radiation; Radiopharmaceutical Sciences; Radiation Protection; Earth Sciences, Environment and Cultural Heritage; Advanced Materials.



c2tn.tecnico.ulisboa.pt

COORDINATOR

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DESCRIPTION

C2TN is a research centre in the areas of Radiopharmaceutical Sciences, Radiation Protection, Earth Systems, Radioactivity, Cultural Heritage and Advanced Materials. It gathers researchers, teachers, students and other collaborators, with knowledge and competences in leading and cutting edge, multidisciplinary and innovative topics in the aforementioned areas. The C2TN teams operate equipment, laboratories and infrastructures, some of them unique in Portugal.

STRATEGIC AIMS

C2TN's research strategy addresses the following challenges: Better management of cancer and neurodegenerative diseases with more effective and personalized diagnosis and treatments; assessment of detrimental effects due to the exposure to ionizing radiation of patients and medical staff, aiming at the Quality and Safety of health care; radiological and nuclear emergency response and preparedness; prevention of infectious diseases and outbreaks; improving the air quality and reducing the carbon footprint; environmental protection, management of natural resources and global changes; sustainable agro-industry and food safety; cultural heritage leverage and safeguard; and advanced materials for applications in physics and engineering, electronic sensors and devices, energy conversion, cybersecurity and medical applications.

MAJOR AREAS AND LINES OF RESEARCH

C2TN is organized in 5 interdisciplinary Groups: i) Solid State: New materials with unconventional electrical and magnetic properties and characterization using low temperature and high magnetic field techniques; ii) NETG - Nuclear engineering and techniques, nuclear physics, geo-environments and cultural heritage using neutrons, radioactive nuclei and ion beams; iii) RPSG - Radiation protection and safety: dosimetry, radiobiology, environmental radioactivity, radioecology, radioactive waste and metrology; iv) Radiopharmaceutical Sciences: Nuclear Tools for Molecular Imaging and theranostics; and v) Environmental processes, archaeological material culture & macromolecular materials using nuclear analytical techniques and ionizing radiation. RD&I activities are synergistically interwoven into 3 Thematic Strands: i) Advanced Materials; ii) Radiopharmaceutical Sciences and Health Physics; and iii) Earth Systems, Radioactivity & Cultural Heritage.

CEAUL

CENTRE OF STATISTICS AND ITS APPLICATIONS



COORDINATOR

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VERY GOOD

Evaluation (2019)

43

FTE researchers

0,85 M€

Funding FCT

KEYWORDS

Bayesian Analysis; Biostatistics; Parametric and Semiparametric Inference; Statistical Modelling and Data Analysis; Space Time Models; Extreme Value Theory.

DESCRIPTION

The Centre of Statistics and its Applications (CEAUL) was created in 1975 and represents, since then, the largest and strongest research group in Probability and Statistics operating in Portugal. CEAUL's members' activities span interdisciplinary research across diverse areas of basic and applied sciences, including Health, Life Sciences, Forest Fires, Ecology, Quality Control, Insurance and Financial Risk, Environment and Machine Learning. CEAUL's mission is to contribute to the resolution of concrete problems in which Statistics is necessary. In today's world, it has a prominent place with the aim of helping to respond to societal challenges through the development, dissemination and application of statistical methodologies in the most varied areas of application.

STRATEGIC AIMS

CEAUL aims to keep pace with the recent advances in the scientific domain of Statistics to continue fundamental research on diverse aspects of Statistics. One of the sources of inspiration for the development of new statistical methodologies comes from our contribution to the wider Society by providing support to Industry, Commerce, Services and Business in the form of consultancy. In this sense, developing new methodologies with the goal of extending the frontiers of statistical knowledge providing statistical tools for several areas of research is one of the targets of CEAUL members. Collaborating with researchers from other domains and scientific areas, by participating in national and international projects of interdisciplinary nature, is always an enrichment strategy that

CEAUL aims to adopt. For instance, one of the goals of CEAUL is to promote a link with Industry via institutional partnerships. The development of advanced training activities, through the involvement in Ph.D. programs of Higher Education Institutions and the organization of advanced and specialized courses in emerging areas of Statistics, will also enable CEAUL members to update their knowledge in more specialized and complex statistical methodologies. Accordingly, CEAUL intends to support the expenses inherent to the participation of members in courses and congresses hosted by CEAUL or by other Institutions. CEAUL also considers of the utmost importance to invite international researchers to teach courses and give seminars, as well as, although with financial constraints, to support financially international and national meetings.

MAJOR AREAS AND LINES OF RESEARCH

Statistical Extremes is the most international recognized CEAUL's line of research with contributions of impact in fundamental and applied research. Also new relevant developments have been achieved on Statistical Quality Control. These themes are contemplated in the future of the research unit. In Environmental and Ecological Statistics, areas of election are on wild fires, with the construction of spatial-temporal models addressing relevant questions, animal density estimation and approaches to study detrimental impact on local biodiversity given the discharge of ballast water. There is continuous scope of future work in these priority areas given the close links between CEAUL and researchers on those areas of application. Advances in Data Science is

in CEAUL's research plan. A field already explored regards Machine Learning techniques with improvement of the flexibility and interpretability of Generalized Additive Neural Networks. These subjects and the development of new methodologies more suited to deal with Big Data are priority to CEAUL. Statistical modelling of infectious diseases is also in the scope of recent and future CEAUL's research work.



GFMUL

GROUP OF MATHEMATICAL PHYSICS OF THE UNIVERSITY OF LISBON



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gfm.cii.fc.ul.pt

EXCELLENT

Evaluation (2019)

18

FTE researchers

0,61 M€

Funding FCT

KEYWORDS

Stochastic Analysis; Geometric spectral theory and shape optimization; Quantum Geometry and Pseudo differential operators; Topological gauge theories and quantum gravity; Analytic ODEs, dynamical systems and Integrability; Schroedinger problem and optimal transport.

DESCRIPTION

The Group of Mathematical Physics's basic aim is to develop rigorous mathematical methods motivated by problems in modern Theoretical Physics. This is not only about making rigorous what physicists already know, but about providing them with new tools and ideas inspired by the most recent developments in the Mathematical Sciences. The topics currently developed by its members belong to the following domains: Classical and quantum integrable systems, Fractional differential equations, Numerical methods for shape optimization, Random matrix theory and physical applications, Stochastic deformation, Stochastic Geometric mechanics, Spectral geometry of differential operators, Spectral theory, Quantum geometry and Quantum gravity.

STRATEGIC AIMS

Since its beginning (in 1995), GFMUL adopted the strategy to create and maintain a stimulating research atmosphere in the interdisciplinary domain of Mathematical Physics. In contrast with other mathematical fields this one is, indeed, much less specialized. To look for interesting problems inspired by Theoretical Physics or other scientific fields one has to be able to use, and therefore to know, multiple tools belonging to different mathematical sub-fields (Algebra, Analysis, Geometry, Probability,...), which are traditionally divided. Such profiles are not usual in Portugal. This is why we always have had scientific projects (national and international) involving a number of docs and post-docs. In spite of its relatively small size, GFMUL has been able to prove, along

the years, that Mathematical Physics is a serious part of Mathematics, for instance in taking to the Aula Magna the largest international Congress in the field (ICMP 2003). And by periodically organising many other international conferences. The next 3 to 5 years will require a reconfiguration of GFMUL; its coordinator is going to retire and the only two present catedráticos of the center are professors at IST (after failing to be promoted at the DMFCUL...). If FCUL is able to provide stable positions for a couple of our (excellent) researchers, GFMUL will remain a mathematical center of FCUL. This reconfiguration will be our only real challenge because we are confident not only that our scientific activity will go on but also that many more young portuguese talents will join us.

MAJOR AREAS AND LINES OF RESEARCH

GFMUL's domains of best international projection are presently: a) (ST) Spectral theory of operators and interplay between analytic, geometric and numerical methods; b) (SA) Stochastic Analysis and mathematical study of random phenomena; c) (IS) Classical and quantum integrable systems; d) (RM) Random matrix theory and physical applications; and e) (SP) Schrödinger's problem and Mass Transportation. GFMUL tries continuously to adapt to the demand of the international community. In particular: (SA) will evolve towards the geometrical side, notably in the recent field of Stochastic Geometric Mechanics (new entry in the last MathSciNet classification), with applications, in particular, to Hydrodynamics; (IS) gained visibility by a successful project of

D. Masoero and should remain a hot topic; and (SP) results from the rediscovery by the Optimal Transport community of the starting point of the oldest research program of GFMUL, recently related to the (new) geometric science of information. Completely new orientations would follow, as always in the past, from the hiring of excellent researchers bringing their expertise and enthusiasm to our center.

IDL INSTITUTE DOM LUIZ

IDL has the status of Associated Laboratory.

EXCELLENT

Evaluation (2019)

112

FTE researchers

2,95 M€

Funding FCT

KEYWORDS

Climate changes; Natural Hazards & Resources; Ocean.

DESCRIPTION

Established in 1853 as the first Portuguese Meteorological and Geophysical Observatory, IDL has evolved since 2004 into an integrated Earth System Science Institute, incorporating more than 100 researchers in Atmosphere, Ocean, Solid Earth, and Environmental sciences. Based at the Faculty of Sciences at the University of Lisbon (FCUL), IDL includes researchers from 6 different Universities, two state laboratories (IPMA, the Portuguese Institute for the Sea and the Atmosphere, and IH, the Hydrographic Institute) and ARDITI (a non-profit research institution based at Madeira Island, hosting the Madeira Oceanic Observatory). IDL is an active participant in 4 infrastructures of the FCT 2020 National Research Roadmap: C4G/EPOS, EMSO, WINDSCANNER and BBRI. C4G is the Portuguese contribution to EPOS-ERIC, currently led by an IDL researcher and aiming to jointly manage a nationally distributed field and laboratory infrastructure for a wide range of solid Earth research and applications. EMSO (European Multidisciplinary Seafloor and water column Observatory, <http://emso.eu/>) is led in Portugal by IPMA, with the participation of several IDL researchers including IPMA's president (Miguel Miranda), aiming to develop next generation Ocean Bottom Observatories, which will make use of IDL's long-term expertise in the design, construction and operation of Ocean Bottom Seismometers, to create a more representative view of the deep ocean, required for hazards and resources management for the advance of Earth System science. WINDSCANNER is a shared facility for three-dimensional wind

observations, motivated by both renewable energy applications and fundamental research, where IDL participates together with IPMA and other partners.

STRATEGIC AIMS

Instituto Dom Luiz (IDL) focuses on the use of quantitative science to unravel our Planet's Dynamics and to respond to major societal challenges posed by Climate Change, a sustainable use of Earth and Energy Resources, and exposure to Natural Hazards. IDL is seeking to pursue a competitive research agenda with an increasing societal relevance, namely through key contributions to five topics of the national agenda, as translated in the following strategic objectives for the next five years: (1) contribute to the improvement of climate change forecast, mitigation and adaptation; (2) innovate in Earth Observation and its efficient use by different activities; (3) support a more responsible use of marine resources, from the coast to the deep ocean; (4) develop solutions to a rapid transition to a sustainable energy system; and (5) help optimizing the discovery, exploration and circular management of finite Earth resources.

MAJOR AREAS AND LINES OF RESEARCH

To implement the objectives mentioned above, IDL will develop efforts around three main thematic lines: (A) Climate Change: understanding and forecasting; (B) Geodynamics and hazards in the Atlantic region; and (C) Earth resources for a sustainable development. Beyond strengthening IDL's research in these topics, IDL seeks to reinforce human resources,

including its governance, boosting its capacity to attract major European funding, have a stronger participation in International Networks, and increasingly attract high-quality international students and researchers.



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IPFN INSTITUTE FOR PLASMAS AND NUCLEAR FUSION



IPFN has the status of Associated Laboratory.

EXCELLENT

Evaluation (2019)

93

FTE researchers

3,14 M€

Funding FCT

KEYWORDS

Plasma Science and Engineering; Nuclear Fusion; Intense Lasers; Photonics; High performance computing.



ipfn.tecnico.ulisboa.pt

DESCRIPTION

“Instituto de Plasmas e Fusão Nuclear” (IPFN) is a Research Unit of “Instituto Superior Técnico” (IST) with expertise on Plasma Physics, Engineering and Technologies, Controlled Nuclear Fusion, Lasers and Photonics and Advanced Computing. These unique competences and scope allow IPFN to contribute to the public policies on Energetic transition and decarbonization, territorial cohesion, scientific employment, innovation society and advanced training, through the direct engagement and R&D activities of IPFN researchers and the institutional commitment of IPFN with the different stakeholders relevant at the national and the European levels. IPFN is the sole Portuguese R&D institution in the field of Plasma Science and Engineering, one of the top Physics laboratories in the country and accumulates experience of 30 years in R&D. IPFN has an ambitious research programme which balance activities motivated by contemporary scientific problems (curiosity-driven) and a varied portfolio of technological applications (application-driven). IPFN institutional strategy has 4 main vectors: internationalization through peer recognition of competencies in several fields and participation in high-profile projects; national reach with a research node at University of Madeira and integration of researchers from several Portuguese universities; strong commitment to high-level education and advanced training; and creation of reference research infrastructures. IPFN has built recognition, focused on building outstanding teams with critical mass to foster scientific and technological excellence in an international context.

STRATEGIC AIMS

Plasmas are a multidisciplinary field of knowledge, embracing many complementary scientific and technological subfields (e.g. Plasma Diagnostics and Control, Energy and Environment, Materials Processing, Low-temperature Plasmas Science and Technology, Lasers and Photonics, High-Performance Computing...). IPFN provides a unique setting for world-class research, technological transfer and advanced training, with the required multidisciplinary to be competitive in the participation to ambitious large-scale physics projects. This wide and recognized expertise grants IPFN an important participation in landmark large-scale EU research projects and programmes (e.g. EUROfusion, JET, ITER, IFMIF-DONES, ELI, ESA and FET Open), through collaborations in the scientific and technical activities of these projects, and active presence on their governing boards. IPFN was (until 2013) the Research Unit of the Contract of Association between Euratom and IST, in force since 1990. From 2014 onwards it continued as the Portuguese representative in the Euratom co-fund action for fusion, awarded to the consortium EUROfusion of EU Fusion Laboratories, aiming at developing a joint programme to implement the roadmap towards the goal of electricity production by 2050.

MAJOR AREAS AND LINES OF RESEARCH

It is the core of IPFN mission to: a) Coordinate the Portuguese participation in the Euratom Fusion Programme and in the European Joint Undertaking for ITER and the Development of Fusion Energy

COORDINATOR

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(F4E); b) Participate in projects with the European Space Agency (ESA), related to studies of fundamental physics of space and astrophysical plasmas; c) Ensure the Portuguese participation in the European projects on new plasma accelerators; d) Develop the national technology in ultrashort, ultra-intense lasers for multidisciplinary applications; e) Ensure the Portuguese participation in European projects and networks on low-temperature plasma physics and engineering and to develop national competences in plasma-based key-enabling technologies; f) Promote the development and research on ion solid interactions and ion beam technologies in multidisciplinary fields; and g) Collaborate in the graduate and post-graduate teaching in Plasma Physics and Engineering, Intense Lasers and Controlled Nuclear Fusion.

IA INSTITUTE OF ASTROPHYSICS AND SPACE SCIENCES

EXCELLENT

Evaluation (2019)

61

FTE researchers

1,98 M€

Funding FCT

KEYWORDS

Astronomy and Astrophysics; Stars and Planets; Galaxies and Cosmology; Astronomical Instrumentation and Space Systems; Science Communication.

DESCRIPTION

The Instituto de Astrofísica e Ciências do Espaço (IA) is a research infrastructure with a national dimension, embodying a bold vision for the development of Astronomy, Astrophysics and Space Sciences in Portugal. IA is the largest research unit in this area in Portugal, being responsible for the majority of the national productivity in Space Sciences, one of the areas with the highest relative impact factor in Portugal. IA has a demonstrated ability to drive major astronomical projects, at all development levels: scientific and technical definition, instrument concept and design, construction and commissioning, and scientific exploitation. IA's mission is to foster research with the highest international impact, to support teaching and training of young researchers and students in close collaboration with the Universities of Lisbon and Porto, and to promote wide-ranging science communication activities that enhance public understanding of the Universe. IA's vision is to achieve and consolidate international leadership in key areas of astrophysics and space sciences, taking full advantage and realising the potential created by the national membership of the European Space Agency (ESA), the European Southern Observatory (ESO) and the Square Kilometre Array Observatory (SKAO). This is done through state-of-the-art research, enabled by our leading participation in strategic international ground- and space-based projects and missions.

STRATEGIC AIMS

Astrophysics and Space Sciences are at the forefront of scientific research. They promote technological innovation, driving the development of new instruments and technologies, data processing methods and computational structures, with the consequent social and economic impact. This is one of the national scientific areas with the strongest international impact, one of the niches where Portugal has assumed international leadership roles. IA is the reference institution for this area in Portugal, presenting a high level of scientific production and bringing together a remarkable portfolio of key participations in astronomical instruments and missions. IA R&D addresses most of the topics at the forefront of Astronomy and Astrophysics (A&A) research, from the Solar System to exoplanets, from stars to galaxies, and to the properties of the Universe. It is complemented by work on instrumentation and systems of relevance to A&A projects, and strengthened by innovative science communication initiatives. This approach has also allowed for the development of partnerships with industry, which is crucial for stimulating technological development and innovation. High quality advanced training is also strategic for IA, supporting teaching at the Universities of Lisbon and Porto. For example, IA manages the Doctoral Network PhD::SPACE, and a program intended for undergraduate students seeking first contact with research in this area. Equally strategic is Science Communication, that promotes a wide, innovative and effective range of activities, making IA the source of information of choice in Astronomy, Astrophysics and Space Sciences for the media in Portugal.

MAJOR AREAS AND LINES OF RESEARCH

IA's activity is organized in 6 teams that provide internationally recognized contributions to some of the major scientific drivers for the next generation of projects and space missions planned by the major international agencies (e.g. ESO, ESA, NASA): 1) Towards the detection and characterisation of other Earths: The study of exoplanetary systems and the atmospheres of Solar System planets; 2) Towards a comprehensive study of stars: The atmospheric properties and interiors of stars and the interaction between young stellar objects and associated protoplanetary disks; 3) The assembly history of galaxies resolved in space and time: The first powerful supermassive black holes in the Universe and the evolutionary processes in galaxies; 4) Unveiling the dynamics of the Universe: The physical cause for the present-day acceleration of the expansion, and the formation and evolution of large-scale structures in the Universe; 5) Instrumentation and Systems: R&D&I in instrumentation for space and ground-based projects: conception, assembly, integration and testing of systems (incl. multiple aperture telescopes; high precision metrology; micro optical-electro-mechanical systems; advanced data reduction pipelines; data acquisition systems); and 6) Science Communication: enhancing public understanding of the Universe and awareness of the importance of our research through far-reaching and innovative activities.

**COORDINATOR**

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IBEB INSTITUTE OF BIOPHYSICS AND BIOMEDICAL ENGINEERING

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VERY GOOD

Evaluation (2019)

15

FTE researchers

0,43 M€

Funding FCT

KEYWORDS

Medical Imaging; Biophysics; Neurosciences; Digital Health; Personalised Diagnostics; Biomedical Data Analysis and Processing.

DESCRIPTION

The Institute of Biophysics and Biomedical Engineering (IBEB) is a research unit of the Faculty of Sciences of the University of Lisbon. IBBE was founded in 1992, and its activities are focused on research and postgraduate teaching. Research carried out at IBBE covers Biophysics and Biomedical Engineering approaches to understand some human health disorders. IBBE's scientific activity is organized into 4 transversal research lines, distributed by its Ph.D. members. IBBE contributes for the MSc and PhD programs in Biomedical Engineering and Biophysics of the Faculty of Ciências of Universidade de Lisboa and participates on other post-graduate courses within Ciências or in collaboration with other schools of ULisboa.

STRATEGIC AIMS

IBEB's research strategy consists in the exploration of topics with relevance for the therapy and diagnosis of diseases in the interface between Engineering, Physics and Medicine, with a strong inclination towards establishing collaborations in the medical sectors and with partners in the industry. Research is conducted along four main lines, whilst attempting to encourage fruitful interactions between them. Supporting teaching at the graduate and undergraduate levels is also a priority.

MAJOR AREAS AND LINES OF RESEARCH

Connectivity and brain dynamics, brain stimulation and neuro-rehabilitation, cancer therapy and drug delivery, medical imaging and diagnosis.

LIP LABORATORY OF INSTRUMENTATION AND EXPERIMENTAL PARTICLE PHYSICS

LIP has the status of Associated Laboratory.

EXCELLENT

Evaluation (2019)

85

FTE researchers

3,09 M€

Funding FCT

KEYWORDS

Experimental Particle Physics; Astroparticle Physics; Scientific Computing; Particle and radiation detector systems; Development of new instruments and methods; Applications to Health and Space Exploration.

DESCRIPTION

LIP is the reference institution for particle physics and associated technologies and the reference partner of CERN in Portugal. The laboratory is nation-wide, with nodes in Lisboa, Coimbra and Braga, working in close collaboration with the local universities. The associates of LIP are FCT, the Universities of Lisboa, Coimbra and Minho, IST, FCUL and the Electrical and Electronics Business Association. LIP is an increasingly multidisciplinary Associate Laboratory that brings together about 200 members, including close to 100 PhD researchers, 40 technical and administrative staff, and over 70 graduate students. LIP was rated as 'Excellent' in the FCT 2017/18 evaluation of all research units. Under the supervision of FCT, LIP defines the national research agenda for experimental particle physics and the Portuguese participation at CERN, and in other international scientific infrastructures. LIP is the Portuguese reference partner of CERN and also a partner of ESA, GSI in Germany, SNOLAB in Canada, the Pierre Auger Observatory in Argentina, and Fermilab and the Sanford Underground Research Facility in the USA. R&D activities have the support of LIP's Research Infrastructures (mechanical workshop, detector laboratories, electronics laboratories and computing facilities), which also provide services to external entities, and of LIP's Competence Centres, overarching structures creating a pool of knowledge that eases R&D and fosters knowledge transfer into the non-academic sector.

STRATEGIC AIMS

The three strategic pillars of LIP are: Discovery through science, with a world-class fundamental research program in particle and astroparticle physics; Innovation through technology, as a key player in the application of particle physics technologies to healthcare, space exploration, and information technologies; Knowledge sharing, working to inspire the younger generations and to address societal challenges through science. In the next few years LIP will strengthen its role as the reference laboratory in particle physics and associated technologies. The upgrade of CERN's Large Hadron Collider will be a central project for over a decade. It gathers a critical mass that includes theoretical particle physicists, an area where LIP is growing. Fixed target and astroparticle physics experiments are also part of Europe's and LIP's roadmaps. LIP has direct links to scientific infrastructures in the National Roadmap, in areas that are strategic for societal contributions. LIP co-leads the National Distributed Computing Infrastructure (INCD), providing services and resources to the entire Portuguese scientific community; is a founding member of ProtoTera, the future Portuguese infrastructure for cancer treatment with proton beams; is the main technological partner in positron emission tomography projects with RPC particle detectors in the Brain Imaging Network BIN; collaborates with the Portuguese Space Agency PTSpace in boosting research in this field in Portugal. LIP is part of the main scientific computing projects and infrastructures in Europe and has wide competences in data science and big data analytics.

MAJOR AREAS AND LINES OF RESEARCH

LIP is committed to R&D in three main areas: Particle and astroparticle physics; Instrumentation and technology development, namely for the areas of healthcare and space exploration; Scientific computing and information technologies. Among the great challenges of particle physics for the next decades are: to explore the properties of the Higgs boson, neutrinos, hadrons and nuclei, to address fundamental questions such as the origin of the matter-antimatter asymmetry and to search for new phenomena, including dark matter. LIP will be part of this quest. The development of instrumentation for particle physics is one of the strengths of LIP. Specific R&D lines are dedicated to health and space applications. LIP participates in some of the largest European R&D projects and infrastructures in information technologies, particularly in Grid, Cloud and HPC, and operates the largest scientific computing facility in Portugal. The laboratory has also remarkable competences in data science and big data analytics and works towards applications in a variety of domains. Technological applications boost the societal impact of LIP and will continue to be reinforced, in close connection with the academic and business communities.



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MARE MARINE AND ENVIRONMENTAL SCIENCES CENTRE



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EXCELLENT

Evaluation (2019)

198

FTE researchers

4,59 M€

Funding FCT

KEYWORDS

Ocean and Coastal Areas; River Basins; Environment; Biodiversity; Anthropogenic Impacts; Marine Resources and Biotechnology.



mare-centre.pt/en

DESCRIPTION

MARE is a multipolar RD&I Centre that combines expertise allowing approaching scientifically and technologically all types of aquatic systems, from river basins and associated landscapes, to estuaries, coastal, and large marine ecosystems. Conceptually, MARE integrates four domains of action: 1. LIFE, understanding the patterns and processes influencing the distribution, functioning and evolution of biological diversity on the planet; 2. ENVIRONMENT AND RESOURCES, centred on understanding environmental processes influencing the way anthropogenic pressures and impacts and natural cycles interact and the consequences for the way we explore, manage and model natural resources, ecosystems and the environment; 3. TECHNOLOGY AND INNOVATION, addressing interdisciplinary research applied to find technological and innovative angles to understand Earth and its processes, ecosystem services, and link technology transfer to industry and society; 4. INFORMATION AND SOCIETY, linking science to policy and outreach initiatives, promoting scientific and Ocean literacy and raising awareness on the most pressing issues impacting sustainable development of societies. Structurally, MARE integrates two ecosystem-oriented Research Groups (1. River Basins; 2. Coastal Systems and Ocean), and seven research Thematic Lines. The main goals of MARE Strategic Program are: 1. Advance the knowledge on the functioning of marine ecosystems, and interrelated estuarine and freshwater systems; 2. Develop scientific and technological tools towards the

sustainable use of freshwater, estuaries and marine ecosystems under the framework of regional, national and international priorities; 3. Develop scientific knowledge and sound technology to help providing food and other biotic and non-biotic resources to society; 4. Promoting good ecological and healthy status of oceans and seas, estuaries and river basins; 5. Drive international cooperation to advanced education and training resulting in a new generation of scientists and professionals prepared for the Blue Economy; and, 6 - Promote Ocean literacy and contribute to a participative Blue Society.

STRATEGIC AIMS

The creation of MARE in 2015 materialised a vision on understanding and managing aquatic ecosystems based on a multipolar centre formed by several distinct R&D groups from Universities that, in the previous decades, made significant scientific contributions to the understanding and awareness of the Ocean and Environment.

CQE STRUCTURAL CHEMISTRY CENTER

CQE is a member of the Associated Laboratory IMS - Institute of Molecular Sciences.

EXCELLENT

Evaluation (2019)

179

FTE researchers

4,20 M€

Funding FCT

KEYWORDS

Chemistry; Synthesis, Catalysis and Reactivity; Materials, Soft Matter and NanoChemistry; Sustainable Chemistry, Environment, Energy; Medicinal and Biological Chemistry for Health.

DESCRIPTION

Structural Chemistry Center (CQE) is a R&D Unit of the University of Lisbon (ULisboa) with sites at Instituto Superior Técnico (IST) and Faculdade de Ciências (FCUL). It is the largest Research Unit in Chemistry of ULisboa, with more than 300 affiliated members. Research at CQE is aligned with four Thematic Lines (TLs): SYNCat (Synthesis, Catalysis and Reactivity), MATSoft (Materials, Soft Matter and NanoChemistry), SUSChem (Sustainable Chemistry for the Environment, Energy, and Manufacturing) and MEDLife (Medicinal and Biological Chemistry for Health). The four TLs are multidisciplinary and interdisciplinary areas that explore problems along a rational framework, initiated with the design, synthesis and characterization of new molecules and materials that can subsequently contribute to a better environment, a more sustainable energy production, or a healthier life. CQE also comprises eleven research groups that reflect the scientific interests of their members, their capacity to share resources and their wish to be managed by a common structure. The organization of CQE around eleven research groups and four TLs is an integrated and flexible concept: i) groups are encouraged to produce scientific work and contribute within the context of different TLs; ii) thematic lines are not compartmentalized: instead, they overlap in multiple research areas; iii) inter-group collaboration is expected to solve specific challenges posed by a given TL from different perspectives. CQE contributed to: International recognition in arctic research activities related to climate change; Nucleoside-based compounds

for agricultural chemistry and health; Sustainable energy solutions: "Fit for Purpose" electrochemical and photovoltaic devices; Eco-friendly processes: from one-pot homogeneous catalysis to new heterogeneous catalysts; Organic and metal-based drugs for cancer, tuberculosis, diabetes and Alzheimer therapies.

STRATEGIC AIMS

Structural Chemistry Center is defined by its threefold mission: i) the integrated development and use of chemistry-based knowledge to investigate challenging societal problems; ii) the promotion of advanced training in chemistry-related areas; and iii) the transfer of scientific and technological knowledge in terms of its social, economic and cultural impact.



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**SOCIAL
SCIENCES**

ADVANCE, RESEARCH CENTER IN MANAGEMENT

ADVANCE is a member of the consortium CSG – Research in Social Sciences and Management

VERY GOOD

Evaluation (2019)

120

FTE researchers

2,19 M€

Funding FCT

KEYWORDS

Economic Sociology; Organizations and Business; Economic History; Development Studies; Sustainability Sciences; Socioeconomics.

DESCRIPTION

ADVANCE is a research centre in management based at ISEG – Lisbon School of Economics and Management from Universidade de Lisboa – that conducts top research activities, combining a deep theoretical background with extensive empirical research. ADVANCE researchers produce work that is presented at top international conferences, alongside with highly cited papers published in top quality scientific journals and several books and reports. The researchers are mainly professors from ISEG's department of management and are among the best academics in the world, having received various international awards for research achievements and knowledge dissemination. They serve in numerous editorial boards of top peer reviewed journals, several international conferences scientific committees, national and international scientific accreditation boards, etc. They have led national and international funded projects, supported by the very competent and dedicated ADVANCE staff. ADVANCE regularly promotes international conferences, summer schools and research seminars, allowing the interaction of its members with top researchers in the several fields of management. ADVANCE hosts ISEG's PhD program in Management – the single doctoral program in management from the Universidade de Lisboa. ISEG is a member of AACSB. Universidade de Lisboa, the major university in Portugal and a leading institution of higher education in Europe.

STRATEGIC AIMS

Advance's strategy is to reach and maintain national and international accreditations for ISEG's management department programs by obtaining funding for research projects, with the scientific freedom of all researchers.

MAJOR AREAS AND LINES OF RESEARCH

Finance and Accounting; Strategy and Marketing; Information Systems and Production and Operations Management; Human Resource Management and Organizational Behavior.



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CAPP CENTER FOR ADMINISTRATION AND PUBLIC POLICIES



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EXCELLENT

Evaluation (2019)

67

FTE researchers

1,45 M€

Funding FCT

KEYWORDS

Public Policies; Public Administration; Governance; Organizational Behaviour; Sustainable Communities; Lusophony / Lusosphere.

DESCRIPTION

The Centre for Public Administration and Public Policies (CAPP) is the leading research centre on public policies of the University of Lisbon, the largest university in Portugal. CAPP was founded in 2001 to advance knowledge and support decision making regarding the design, implementation, analysis and evaluation of public policies. Its applied research has a focus on improving the quality in governance, with the following strategic aims: i) The production of scientific knowledge in the areas of Public Administration, Government and Social Sciences, marked by Science for Public Policies; ii) To contribute to the training of researchers on processes and tools for the design, implementation and evaluation of public policies; and iii) To foster collaboration in national and international networks for the production and sharing of knowledge in the fields of administration and public policies.

STRATEGIC AIMS

Multidisciplinary research has always been the cornerstone of a research unit, the general strategy is to be achieved through greater integration with the host institution and it rests on four main objectives: 1) Increase scientific outputs; 2) Increase the social impact of research; 3) Strengthen the internationalization effort; 4) Improve the scientific training of researchers; and 5) Increase Scientific Outputs. Examples of actions that contribute to the achievement of these objectives are: increase support for funding applications, restructure CAPP's research lines, improve external communication, organize and promote

events, establish robust connections between researchers and master and doctoral students, invest in the training of researchers, support the dissemination of results in the scientific field.

MAJOR AREAS AND LINES OF RESEARCH

CAPP constituted its Research Lines to strengthen the organisation of groups of researchers in terms of the great societal issues of today. They are evidence of the social relevance and interdisciplinarity of the research carried out in this Research Centre, crossing researchers from different scientific areas. CAPP has thus the following major areas of action: a) Environment; b) Communication, Power and Public Policies; c) Administration and Public Finance; d) Health Sector; e) Population and Mobility Studies; f) Entrepreneurship; and g) Labour Relations, Organisational Behaviour and Human Resource Management.

CEG CENTRE OF GEOGRAPHICAL STUDIES

CEG is a member of the Associated Laboratory TERRA – Laboratory for Sustainable Land Use and Ecosystem Services.

VERY GOOD

Evaluation (2019)

75

FTE researchers

1,29 M€

Funding FCT

KEYWORDS

Geography; Spatial Planning; Environmental Changes; Socio-spatial Dynamics.

DESCRIPTION

The Centre of Geographical Studies (CEG) is a research and development unit of the Institute of Geography and Spatial Planning (IGOT) at the University of Lisbon (ULisboa), endowed with statutory, administrative and scientific autonomy.

CEG is the main reference in research and dissemination of geographical knowledge in Portugal and a high prestige research unit at the international level. The mission of the CEG is the development of geographical research, the promotion and dissemination of geographical knowledge, and contributing to societal and regional development, spatial planning, sustainable use of environmental resources and spatial justice. CEG has taken on the following responsibilities: 1) Conduct research of fundamental and applied nature, and promote the dissemination of results; 2) Promote and publish scientific and didactic studies; 3) Organise courses and scientific meetings; 4) Promote exchanges with national and foreign partner institutions; 5) Compile and make available bibliographic, cartographic and multimedia information, relevant to Geography and Spatial Planning, within the scope of the IGOT and ULisboa; and 6) Support the training of new researchers.

STRATEGIC AIMS

The CEG 7 objectives for 2018-22: 1) Developing high quality research to understand environmental, social and territorial dynamics; 2) Nurturing and developing international partnerships and advanced training networks; 3) Strengthening postgraduate training through the increase of

the number of PhD grants in the certified PhD programmes offered by IGOT; 4) Seeking and securing the funding base and diversify funding sources to respond to the severe crisis and Troika intervention; 5) Investing in facilities, research infrastructure and staff training to offer good working conditions and services to support high-quality research; 6) Increasing research societal impact and inform public policies for an inclusive and sustainable development of cities and regions; 7) Delivering a sound ‘open science’ policy aiming at solving problems in a collaborative and transparent way; and 7) Streamline the dissemination and communication of science in society, contributing to the greater visibility of CEG and the social recognition of geographic knowledge.

MAJOR AREAS AND LINES OF RESEARCH

Centre for Geographical Studies’s (CEG) strategic objectives for 2018-2022 are structured around 4 main thematic agendas: i) Environmental Changes, Resources and Natural Risks; ii) Urban Challenges, Socioeconomic Changes and Spatial Justice; iii) Territories, Governance, Policies and Planning; and iv) Environment, Culture, Society and Place. In order to fulfill these objectives, the CEG is structured in 6 research groups: 1) The MIGRARE group (Migrations, Spaces and Societies), which divides its activity into several thematic areas, such as: immigration and demographic dynamics in Europe, as well as processes of urban transformation. Maria Lucinda Fonseca coordinates the group; 2) the MOPT Group (Modeling, Planning and Territorial Planning), which consists of carrying out fundamental and applied research in



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ceg.ulisboa.pt

CEsA CENTRE FOR AFRICAN AND DEVELOPMENT STUDIES

CEsA is a member of the consortium CSG – Research in Social Sciences and Management.

VERY GOOD

Evaluation (2019)

120

FTE researchers

2,19 M€

Funding FCT

KEYWORDS

(CSG): Economic Sociology; Organizations and Business; Economic History; Development Studies; Sustainability Sciences; Socioeconomics.

DESCRIPTION

CEsA - Center for Africa and Development Studies (formerly Center for African, Asian and Latin American Studies) is a research center accredited by FCT that has been dedicated to the study of the economic, social and cultural development of developing countries in Africa, Asia and Latin America, with special emphasis on the study of Portuguese-speaking countries, China and Asia-Pacific. In addition, it promotes research on other topics, international economics and development, including implications for sustainability, trying to promote a multidisciplinary approach and a permanent link between theoretical and applied research.

STRATEGIC AIMS

CEsA has sought to consolidate the Center’s activity, strengthen the quality and performance of its members, guarantee scientific production of international reference and integrate and project itself in the activities developed by ISEG, both internally and in terms of its relations with society, which also implies a strong commitment to rejuvenation. In this perspective, the reference lines for the Centre’s activities in the next 3 years will be the following ones: 1) Continue the policy of recruiting new members, which fall within the scope and research objectives of CEsA, with relevant curriculum, in particular with a strong link to teaching and research developed at ISEG; 2) Develop a policy for the articulation of research developed at the Center, with ISEG’s doctoral and master’s programs, seeking to integrate young people and potential researchers in the Center’s activities; 3) Continue to support the



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preparation of applications for new projects, particularly in the framework of funding from the European Union and other international institutions; 4) In terms of the international projection, we will organize in Lisbon the International Conference of EADI - European Association of Development Research and Training Institutes, scheduled for 2023; 5) Support the participation of its members in leading scientific, national and international meetings; 6) Continue to support and encourage the publication of its members in journals indexed at SCOPUS and WEB OF SCIENCE, as well as books and other publications, which fall within the themes studied by the Center; and 7) Continue to develop a policy for the dissemination of the activities carried out by the Center, either at the School or in Portuguese society, or with the reference scientific channels, national and international.

MAJOR AREAS AND LINES OF RESEARCH

The scientific work focuses on three main research lines and a transversal program devoted to the collection of documents and the creation of databases, of a quantitative and qualitative nature, relevant to development studies: 1) African Studies: History, Diasporas and post-colonial Portuguese-African identities. The research is located in the domain of African studies within a framework of disciplinary openness, as a present question about the historical and contemporary dimensions of Africanity. The study of the Portuguese-speaking world in the multiplicity and heterogeneity of its social, economic and cultural history is a privileged area for observation; 2) Contemporary migrations. This line of research includes two dimensions:

the first privileges contemporary migrations and diasporas originating in the PALOP and East Timor and the second, migrations originating in Portugal destined for African countries, understood as phenomena that evolve exploring the theoretical concept of transnationalism; and 3) Development, Sustainability, Globalization and Institutional Changes. It is an area that integrates all the research developed in the fields of global development and international cooperation, environmental, energy, climate sustainability, including the implications in terms of social equity, gender equality and others, global and regional integration and ongoing institutional changes. The integration of these lines in a broader range of international economics and development also allows for a more intense articulation with teaching at ISEG, particularly through the Masters in International Economics and European Studies and in International Development and Cooperation and the PhD in Development Studies.

CEG-IST

CENTRE FOR MANAGEMENT STUDIES OF INSTITUTO SUPERIOR TÉCNICO

VERY GOOD

Evaluation (2019)

35

FTE researchers

0,66 M€

Funding FCT

KEYWORDS

Operations and Supply Chain Management; Decision and Risk Analysis; Environmental and Sustainability Assessment; Entrepreneurship and Innovation.

DESCRIPTION

CEG-IST is the Center for Management Studies of Instituto Superior Técnico hosted by IST-ID and awarded by FCT with Very Good for the scientific area of Economics and Management in the last evaluation process. CEGIST aims to explore and reinforce the links between management science and engineering approaches to stimulate creativity in problem-solving. This systemic view is the distinctive character of CEGIST. CEGIST's overall objective is to promote research opportunities associated with the development of knowledge, processes, tools, and methods required to make decisions and to shape public policies, to configure organizational structures and normative systems, to design engineering systems in sustainable patterns, and to solve problems associated with the information-intensive technology-based economy. CEGIST core research activity focus on appropriate problem formulations and solutions, on the design and modelling of systems, support to decision processes, public policies and planning, enabling technology transfer and the transition to more sustainable patterns of development.

STRATEGIC AIMS

CEGIST's organizational structure and research strategy is built with the purpose of promoting multi-and inter-disciplinary research, acknowledging the existence of five research areas: 1) DECISION science and management engineerING (DECISING), 2) systems modelling and Methods of Operations reSearch And analytICs (MOSAIC), 3) Strategy, Entrepreneurship and Innovation (SEI), 4) Operations, Logistics and Supply

Chain Management (OpLog), and 5) Strategic approaches to ENvironment and SUstainability (SENSU). CEGIST's strategy is thus to encourage the cross-fertilization of the five areas to promote transversal research themes that can engage researchers with distinct backgrounds and interests, and encourage integrated research developments and findings.

MAJOR AREAS AND LINES OF RESEARCH

1) Decision Support Methods (e.g., award of the 2017 Gold Medal of the International Society on Multiple Criteria Decision-Making to one of CEGIST researcher; the MACBETH socio-technical approach for developing multi-criteria evaluation models is widely applied in a variety of contexts); 2) Operations, logistics and supply chain management (e.g., strong engagement in the development of strategic and operational solutions in emerging areas, including sustainable supply chains, and advanced smart production and logistics systems); 3) Strategy, entrepreneurship and innovation (e.g., leading role in international advanced education and research programs like the Carnegie Mellon-Portugal program); and 4) Strategic approaches to environment and sustainability (e.g., CEGIST researchers have a leading role in methodological, participatory and applied research; award of the 2015 Lifetime Achievement Award of the International Association for Impact Assessment (IAIA) to one of CEGIST researcher).

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CIDEEFF

CENTRE FOR RESEARCH IN EUROPEAN, ECONOMIC, FINANCIAL AND TAX LAW

**COORDINATOR**

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cideeff.pt**GOOD**

Evaluation (2019)

17

FTE researchers

0,11 M€

Funding FCT

KEYWORDS

Public policies; Budgetary policies; Financial crisis; European monetary union.

DESCRIPTION

CIDEEFF promotes research into the economic and legal challenges raised by the democratic deficit in global governance and growing asymmetries, the need to ensure the functioning of public services and market failures, as well as the European governance model as an example of governance in the whole world. The Center is governed by a) free, independent and objective research, carried out individually or collectively; b) researchers are responsible for the methods and outcomes of the investigation; c) research is carried out taking into account a common scientific objective and as an instrument for the improvement of society; and d) knowledge is shared, in dialogue with different scientific disciplines and cultures. CIDEEFF's strategic objectives are to contribute to improving practices and finding appropriate legal solutions that can influence policy makers; create networks and promote research with universities and academics from different countries; promote the publication of original articles by integrated members and associates of CIDEEFF and doctoral students, with peer-review; promote and support projects, junior and senior research; facilitate the transfer of knowledge in the academic community, public institutions and civil society. The Center develops its work around a single line of research, subdivided into four research groups: Group 1 - Fiscal governance; Group 2 - Globalization, economic integration, and development; Group 3 - Market and Social Values in a Globalized Economy; Group 4 - Crises, Public Policies, Fiscal Policy, and the Euro.

STRATEGIC AIMS

The Center's investigation is subdivided into 4 thematic lines, which address the following issues: transparency of jurisdictions, the fight against tax havens, aggressive tax planning, exchange of information, movement of persons, services and capital, competition among states in order to attract investment, patriotism and taxes and tax exile dealt under Group I - Tax Governance. Growing interdependency among states, international law of natural resources, the role, and effects of global trade on the sustainability of natural resources, resource price volatility dealt under Group II - Globalization, Economic Integration and Development. Public policies and legal solutions to address market failures in a globalized economy, namely through market-based instruments such as competition policy or by adequate regulation and supervision of specific sectors, such as the financial sector and network industries dealt under Group III - Market and Social Values in a Globalized Economy. Diagnosis of the EU financial crisis, responses and whether the new legal framework is adequate to avoid asymmetrical shocks in the future dealt under Group IV - Crises, Public Policies, Fiscal Policy, and the Euro. Results of the research conducted under this thematic line will contribute to the overall objectives of the Centre, by providing a legal and economic perspective of integrating development and other international values in a coherent global governance structure.

MAJOR AREAS AND LINES OF RESEARCH

The PR of Group I is Prof. Dr. Ana Paula Dourado. It aims to investigate the current challenges imposed on the global, regional, and national economies of the OECD, EU, BRICS and developing countries. The PR of Group II is Prof. Dr. Pedro Infante Mota. This group investigates, defines policies and legal solutions for access to natural resources, the effects of international trade and the sustainability and environmental impact of trade, considering the challenges faced by Member States, BRICs, Developing Countries and the USA. Group III has Prof. Dr. Miguel Moura e Silva as PR. Wealth and income inequality, the global challenges posed by the climate crisis, Big Tech regulation and the post-pandemic recovery create challenges to the global economic order. This Group will investigate and define political and legal solutions adopting an interdisciplinary logic of legal, economic, political and social analysis in the context of competitive markets. The PR of this Group Prof. Dr. Nazaré Costa Cabral. Future prospects for monetary and fiscal policies in EMU will be investigated, in particular the prospects for European Economic Governance, including the review of European fiscal rules and their legal framework.

UIDEF

EDUCATION AND TRAINING RESEARCH AND DEVELOPMENT UNIT

VERY GOOD

Evaluation (2019)

68

FTE researchers

1,26 M€

Funding FCT

KEYWORDS

Education and Training Policies; Teacher Education; Curriculum; Didactics.

DESCRIPTION

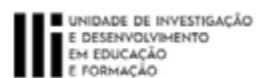
The mission of the Institute of Education of the University of Lisbon (IE-ULisboa) embraces the domains of research, teaching, community intervention, and support to public policies and programs in the area of education and training. Regarding research, IE-ULisboa develops a comprehensive study of education (with special emphasis on Portuguese society and on the societies and cultures with which there are historical relations, in the European space and in other geographical spaces) and to produce relevant inputs for a knowledge-based transformation of educational systems and practices. For this mission, IE-ULisboa has a unique research unit - Research & Development Center on Education and Training (UIDEF). In the scope of teaching, IE-ULisboa has a diversified graduated and post-graduated offer (including a PhD in Education with several areas of specialization, and other courses in partnership with schools from the ULisboa and other universities), aiming to qualify educators, teachers, trainers, higher education technicians and other professionals involved in educational activities or in organizations with an educational or training dimension. IE ULisboa develops community intervention activities, in the fields of formal and non-formal education, aiming to promote the quality of public education and social development. Finally, it provides scientific and technical support to the design, implementation and evaluation of public policies in the area of education and training.

STRATEGIC AIMS

IE-ULisboa's research strategy is based on the development of its only research center – UIDEF. UIDEF development strategy is oriented by two aims: to make the center a significant reference in the field of educational research, at national and international level, and as such perceived within the context of major evaluation processes; to consolidate the construction of knowledge centered on two strong research themes - Education XXI, and Forces of Change in Education, linked to obtaining specific knowledge advances -, in order to gather 'critical mass' and to give focus and distinctiveness to the research carried out. The development strategy takes place in 3 main dimensions, each involving several improvement challenges: (1) research - improving scientific productivity, increasing the number of European projects coordinated by UIDEF members, strengthening the capacity to disseminate and transfer knowledge; (2) research ecology - strengthening the link between UIDEF research and the professional and political worlds of education, and strengthening UIDEF's visibility in Europe; (3) governance and management - improvement of information systems and periodic accountability practices, and specialization of services provided by IE Advisory Services regrading science management, pre-award and post-award, and communication. Taken together, these strategies contribute to obtaining the classification 'Excellent' in the next evaluation cycle (currently 'Very Good').

MAJOR AREAS AND LINES OF RESEARCH

IE-ULisboa has 3 Research and Teaching Areas - Curriculum, Teacher Training and Technology/Didactics/Education and Training Policies -, which correspond to UIDEF Research Groups. Research is carried out on two major themes: Education XXI, pursuing knowledge advances on inclusion and equity practices in formal and non-formal contexts, literacy skills, and teaching practices, through technology-assisted learning and its impact on students; Forces of Change in Education, pursuing knowledge advances on processes, effects, best practices and governance standards of public education policies and national programs, on the role of large-scale international assessments in governing education, and on new models of teacher training, combining training based on practice, collaborative and enriched with technologies.

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ICS

INSTITUTE OF SOCIAL SCIENCES, UNIVERSITY OF LISBON



ICS has the status of Associated Laboratory.

EXCELLENT

Evaluation (2019)

112

FTE researchers

3,04 M€

Funding FCT

KEYWORDS

Contemporary Societies: Legacies and Challenges; Inclusion, Citizenship, Sustainability; Plural SSH Approaches and Methods; Research-led Advanced Training; Knowledge SSH Infrastructures; Open and Citizen Science.

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ics.ulisboa.pt

DESCRIPTION

ICS is a Scholl of the University of Lisbon and a Research Unit of the Portuguese National Scientific and Technological System and an FCT Associated Laboratory. ICS is devoted to scientific research, post-graduate teaching and outreach activities, with a particular emphasis on public engagement with society and informing public policies. Working in the fields of anthropology, political science, economics, geography, history, social psychology and sociology, ICS: 1) carries out top interdisciplinary research on contemporary societies; 2) places internationalization at the heart of its strategy, supporting and rewarding internationalization, taking part in international funding programmes, and basing its recruitment and evaluation strategy on open and competitive processes; 3) supports rigorous research by organizing key infrastructures for gathering, handling, preserving and disseminating data: PASSDA (National Infrastructure Roadmap), ICS-Iscte Polling Laboratory, XLab Experimental Laboratory, ICS Observatories, Social History Archive, publishing infrastructure; 4) focuses on doctoral and post-graduate teaching and life-long training for non-academic publics; and 5) promotes diverse outreach strategies: engaging with media and social networks, dissemination through publications and events for wider publics, collaboration in public and civil society initiatives, open science platform.

STRATEGIC AIMS

ICS has developed its research mission under the guidelines contained in its strategic programme Changing Societies: Legacies and Challenges. The 4 Thematic Lines (TL) of ICS address social challenges related to Sustainability, Citizenship, Inclusion and Vulnerabilities, and Memory and Legacies. Building on a consolidated research and public engagement agenda, each TL also addresses new research topics, related to emerging social problems and current public policy agendas. New risks and problems, such as those arising from the COVID-19 pandemic, are important cross-cutting issues incorporated in the TLs' activity. The TL will contribute to the achievement of the goals of three main scientific and public policy agendas over the next years: FCT scientific agendas; UN Agenda 2030, which defines the Sustainable Development Goals; and Horizon Europe. Research activity is developed within seven Research Groups (RG): Identities, Cultures, Vulnerabilities; Empires, Colonialism and Post-Colonial Societies; Life Paths, Inequality and Solidarity; practices and policies; Memory, History and Society; Political Regimes and Institutions; Environment, Territory and Society; and Sociopolitical Attitudes and Behaviours. Combining different disciplinary perspectives and diverse methodologies, the RGs intertwine the interests of researchers and project teams with the challenges of the Thematic Lines and the institutional research, training and outreach programme.

MAJOR AREAS AND LINES OF RESEARCH

Sustainability: promoting the transition to more sustainable societies. Topics: climate action, energy transition and risks; sustainable production and consumption; urbanization and cities; engagement with science. Citizenship: reducing political inequalities and advancing effective, accountable, and inclusive institutions of governance. Topics: rights and political equality, democratic representation and participation, quality of governance. Inclusion and Vulnerabilities: examining barriers to social inclusion and effects of demographic, social and economic transformations. Topics: children, youth and families; vulnerability and inequality in life transitions; gender and sexuality; human and non-human animal relations. Memory and Legacies: historical and anthropological reflexivity for designing fairer public policies. Topics: heritage and archives; socio-economic roots and structures, policies and discourses; social and racialized representations.

CIEG INTERDISCIPLINARY CENTRE FOR GENDER STUDIES

EXCELLENT

Evaluation (2019)

17

FTE researchers

0,85 M€

Funding FCT

KEYWORDS

Gender, Feminist and Women's Studies; Masculinities and Femininities; Gender Violence and Human Rights; Intersectionality and Global Inequalities; Gender and Interdisciplinarity; Equality Policies.

DESCRIPTION

CIEG is an R&D institution integrated in ISCSP-ULisboa, and is a pioneering research centre, the only one in Portugal entirely dedicated to Gender Studies. It was created in 2012 and classified as Excellent in 2015 and in 2019 by panels of international evaluators. This recognition is linked to its intense activity and its ability to involve, in a short time, 48 researchers from 18 areas of knowledge and 16 universities. The three biggest attributes of CIEG concern: 1) the fact that it involves senior researchers in the field of Gender Studies in Portugal, with a recognized and long international career in areas such as Sociology, Law, Education, Psychology, History and Social Policy, as well as junior researchers and doctoral students; 2) the multi and interdisciplinary stance that characterizes the research produced by the Center; and 3) the connection established between the Portuguese-speaking world, with more than 200 million speakers, Europe, North America and South America. CIEG filled an important gap by creating a network of researchers who contribute to the consolidation of Gender Studies in Portugal and the internationalization of its activities.

STRATEGIC AIMS

i) continuity and reinforcement of participation in research proj., mainly international, and in international research networks. Integration of PhD and Master's students in these projects. ii) a significant increase in the publication of articles in scientific journals, indexed on international bases; iii) transfer and dissemination of knowledge (e.g. organization of events,

postgraduate courses, specialized training in IG). Existing courses are expected to continue and new ST courses will be opened; iv) increase of the research team (integrated and collaborators, scholarship holders). The challenge is the promotion of greater involvement between researchers, as well as publishing collaborations with scholars outside CIEG. It will be essential to reduce the teaching load in order to obtain conditions for scientific publication; and v) strengthening of the Centre's internationalization.

MAJOR AREAS AND LINES OF RESEARCH

Areas of greatest recognition: a) Gender Equality over the Lifecourse; b) GE and social inequalities; c) GE, work and organizations (companies, municipalities, unions; sexual harassment and bullying); d) GE in Higher Education Institutions; e) Gender-based violence (violence against women, dating violence, and against LGBTQI+ people); f) Work and Family life; g) Evaluation of Equality Plans; h) Gender and Disability Studies; i) Gender and Migrations; j) Gender, Space and Architecture; and k) History of Feminisms in Portugal. Intensification of the following scientific areas: a) Masculinities; b) Gender, health and medicine; c) Gender, education and citizenship; d) Gender, racism and intersectionality; and e) Colonial and Post-Colonial Studies.

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CIDP LISBON CENTRE FOR RESEARCH IN PUBLIC LAW

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icjp.pt/cidp**EXCELLENT**

Evaluation (2019)

39

FTE researchers

1,49 M€

Funding FCT

KEYWORDS

Technological revolution and public law; Political democracy and social citizenship; Better regulation & portuguese-speaking public law; Governance, sustainability, and accountability; Collective security and International Law; Multilevel protection of fundamental rights.

DESCRIPTION

Lisbon Public Law (CIDP) is an R&D unit hosted by Instituto de Ciências Jurídico-Políticas within the University of Lisbon School of Law. In 2020, CIDP was acknowledged as the top legal research unit in Portugal by its «Excellent» classification awarded in the international evaluation conducted by the Portuguese Research Council (FCT). Its activities are focused on four main areas, oriented towards a new Public Law research agenda powered by a sound scholarly tradition in: (1) Constitutional Law & Political Science, (2) Administrative Law, (3) Public International Law & European Union Law, as well as (4) Legal Theory & Philosophy of Law. CIDP runs an innovative and interdisciplinary research programme anchored in high-quality teaching, a commitment to enhancing the social impact of knowledge, and an active intergenerational research policy. CIDP is led by ICJP (Instituto de Ciências Jurídico-Políticas) within the University of Lisbon School of Law.

STRATEGIC AIMS

The research agenda of the Public Law Research Center (CIDP) responds to the challenges of the technological revolution, democracy and citizenship, seeking to improve public governance and contribute to sustainable public policies at the social, economic and environmental level. The scientific work of CIDP covers, for example, the new regulatory challenges posed by technological innovation; the emergence of e-democracy and cyber society and its dangers; cybersecurity and regulation of cyberspace or the transformation of the

public sector in the light of the technological revolution. Organized into four research groups, from constitutional law and political science to international and European law to the theory and philosophy of law, the CIDP agenda encompasses new and old challenges for democracy, such as populism, nationalism and “authoritarian constitutionalism”; national citizenship, European citizenship and citizenship in the Community of Portuguese Speaking Countries (CPLP); judicial dialogue and the protection of fundamental rights. In the area of administrative, national and international law, CIDP researchers contribute to efficiency and accountability in public governance; the formulation of public policies for sustainability; multilevel regulation of investment in the blue and green economies, as well as in public goods; and the strengthening of Portuguese administration in the EU context.

MAJOR AREAS AND LINES OF RESEARCH

The Research Center Lisbon public Law is organized into the following Research Groups: a) Constitutional Law and Political Science; b) Administrative Law; c) International and European Public Law; and d) Legal Theory and Philosophy of Law.

CEMAPRE

MATHEMATICS APPLIED TO FORECASTING AND ECONOMIC DECISION

CEMAPRE is a member of the research consortium REM – Research in Economics and Mathematics:

VERY GOOD

Evaluation (2019)

70

FTE researchers

1,34 M€

Funding FCT

KEYWORDS

(REM): Macroeconomics; Econometrics; Microeconomics; Applied Mathematics: Statistics and Actuarial Modeling.

STRATEGIC AIMS

CEMAPRE aims to continue developing research in the scientific areas of the mathematics department of ISEG which are Analysis and Mathematical Finance, Econometrics, Operational Research and Computation, Statistics and Actuarial Science. The researchers have autonomy to choose the subjects of their research within the mentioned areas and are encouraged to publish on the best journals. Through the distribution of funding, researchers are motivated to participate in conferences abroad and to invite researchers from foreign universities in order to promote the internationalization of CEMAPRE's activities. For the next years we intend to continue to improve the integration of our research activities within the consortium REM.

MAJOR AREAS AND LINES OF RESEARCH

CEMAPRE research interests include the following 4 major areas/groups: 1) The Econometrics group is heterogeneous and conducts research in distinct areas of Econometrics. While some members exclusively conduct empirical research, others focus on theory. The majority, however, combine these two strands of research; 2) The Economics and Mathematics of Complex Systems group is a multidisciplinary group that consists of mathematicians and economists who contribute to tackling human problems using their modelling expertise. Many of these contributions rely on the feedback of social phenomena, which, in addition to material constraints, are also a result of human decision processes; 3) The

Mathematical Analysis and Computation Finance group consists of researchers whose expertise relies on a strong quantitative background that allows tackling open questions in a set of diversified pure and applied domains that nowadays require an exigent mathematical framework; and 4) The Statistics and Actuarial Science group is composed of researchers who explore a variety of themes, such as uncertainty quantification and model selection/hypotheses testing using a Bayesian approach.



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IO

ORIENT INSTITUTE



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GOOD

Evaluation (2019)

11

FTE researchers

0,18 M€

Funding FCT

KEYWORDS

Asian Studies; International Relations; Strategy; Anthropology; Foreign Policy; Asian-lusophone Relations.

DESCRIPTION

Established in 1989 and integrated in the Institute of Social and Political Sciences (ISCSP) of the Universidade de Lisboa (ULisboa), the Orient Institute (OI) is an experienced research unit in Portugal dedicated to Asian Studies. Constituted by a multidisciplinary team of experts in Social Sciences (as Political Science, International Relations and Political Anthropology), aiming to gather knowledge on Asian societies and its historical and political relations with Portugal. Its mission is to contribute to scientific progress through the comprehension and analysis of the main issues of the Asian contemporary history and current affairs and research of excellence.

STRATEGIC AIMS

Strategical goals of the unit are: i) Contribute for the scientific progress on the diverse aspects of contemporary Asia and in a Post-Western World. With a tradition of conducting research with experience, excellence and skills to develop concepts, IO has the capacity to understand these new phenomena; ii) Keep its benchmark for all who are interested in Asian Studies and the dynamics in the Post-Western World; iii) Promote links and memoir between Lusophone countries and Asian countries, extracting the confluences and mutual interests; and iv) Keep the advisory and consultancy services to governmental, public and private institutions, and expand those services to Lusophone institutions interested to approach Asia and vice-versa.

MAJOR AREAS AND LINES OF RESEARCH

The current research fields of OI are: East Asia, Southeast Asia and South Asia, and Middle East and Central Asia.

CICPSI

RESEARCH CENTER FOR PSYCHOLOGICAL SCIENCE

EXCELLENT

Evaluation (2019)

52

FTE researchers

1,41 M€

Funding FCT

KEYWORDS

Lifelong Learning and Adaptation; Evidence-based Interventions; Cognitive and Neural Mechanisms in Context; Individual, Family and Organizational Resilience; Cognitive and Memory Illusions; Healthy Families, Schools and Organizations.

STRATEGIC AIMS

The Research Center for Psychological Science (CICPSI) of FPUL, classified as Excellent by FCT, is an internationally recognized research centre with state-of-the-art research facilities and an outstanding workforce. Founded in 2013, CICPSI is devoted to fundamental and translational research in Psychological Science with a special focus on psychological and neural mechanisms of adaptation to context in lifelong learning and development. Two groups conduct research in a concerted way. The Adaptation Processes in context group (ProAdapt) and the COgnition in COntext group (CO2). The CO2 group fundamental research aims to probe the cognitive and neural bases of memory and learning, literacy acquisition, voice and speech perception, judgment and social cognition. The ProAdapt group applied research provides pioneering contributions in temporary employment and leadership; self-regulation in socio-educative contexts; cyberbullying; individual and familial psychological assessment and interventions. Our findings promote healthy contexts that enhance individual, team, and family adaptation and contribute to theoretically driven solutions to major economic and societal challenges (e.g. literacy acquisition; decent work; quality of life in patients and their families).

STRATEGIC AIMS

CICPSI strategy is grounded on 3 pillars: Excellence in Research, Highquality Advanced Training and Strong Impact in Society and Active Dissemination of Knowledge. CICPSI is devoted to fundamental and translational research in Psychological Science with a special focus on psychological and neural mechanisms of adaptation to context in lifelong learning and development. CICPSI is organized in two

groups conduct research in a concerted way: the Adaptation Processes in context group (ProAdapt) and the COgnition in COntext group (CO2). The CO2 group fundamental research aims to probe the cognitive and neural bases of memory and learning, literacy acquisition, voice and speech perception, judgment and social cognition. The ProAdapt group applied research provides pioneering contributions in temporary employment and leadership; self-regulation in socio-educative contexts; cyberbullying; individual and familial psychological assessment and interventions. Our findings promote healthy contexts that enhance individual, team, and family adaptation and contribute to theoretically driven solutions to major economic and societal challenges (e.g. literacy acquisition; decent work; quality of life in patients and their families).

MAJOR AREAS AND LINES OF RESEARCH

In CO2 an interdisciplinary approach is used to study neurocognitive adaptation and plasticity in learning and changing contexts with multiple methods: behavioral paradigms, neuroimaging techniques (fMRI, EEG) and neuropsychological studies (dyslexia, autism, dementia, schizophrenia). We collaborate with leading research centers (e.g. HarvardU, HeidelbergU, MPI-Nijmegen, UCL,UK) and networks (e.g. ESCON, Cognitive Science of Culture network). Through APPE, we contribute towards excellence in the national cognitive psychology arena. We offer consultancy to renowned agencies (e.g. European Commission, Fulbright, Israel Science Foundation) and editorial service in leading journals. CO2 is actively involved in advanced training: the Heidelberg-Lisbon-Exchange Project; the TquanT/Erasmus+; the Brain-Mind College, including the Cognitive Science MSc/PhD Program, unique in Portugal; and 3 FCT-funded

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CIDPCC

RESEARCH CENTRE FOR CRIMINAL LAW AND CRIMINAL SCIENCES

GOOD

Evaluation (2019)

23

FTE researchers

0,18 M€

Funding FCT

KEYWORDS

Criminal law; International criminal law; Criminal procedure law; Philosophy of mind and crime; Theory of society and crime; Economical financial criminal law (compliance).

**COORDINATOR**Maria Fernanda dos Santos
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www.cidpcc.pt**DESCRIPTION**

CIDPCC carries forward a research project involving dialogue and relations between legal science in the field of criminal law and other areas of knowledge and science, working critically on the knowledge in those areas that is relevant for an understanding of current problems in criminal law. Thus, knowledge which raises new issues regarding criminal liability and criminal policy is considered, such as neuroscience, psychology, mathematics, the theory of society, the theory of language and the theory of action. Its activity is guided by independence, autonomy and objectivity of the scientific research in relation to political, economic and other social powers, and responsibility of the researchers regarding their work methods and the consequences of their research.

STRATEGIC AIMS

The definition of the CIDPCC's strategic objectives is governed by two leading ideas: criminal law interferes greatly with fundamental rights, and criminal rules and decisions relate to the projection of deeper content on personality and human behaviour. Accordingly, the Centre's objectives are: a) to conduct innovative practices in scientific research on criminal law and criminal policy which contribute to a critical analysis of the criminal system; b) to develop true scientific interdisciplinarity which enables the fundamental criteria of criminal law to be reconstructed; c) to promote international integration of the research carried out at the CIDPCC; d) to promote and support the projects and careers of both senior and junior researchers and of Masters and PhD students;

e) to foster the transfer of knowledge to the academic community, to the legal community and to society.

MAJOR AREAS AND LINES OF RESEARCH

Research groups corresponding to 3 major trends in the study of Criminal Law and Criminal Procedure, which cut across each topic area (Models of criminal imputation and behavioural sciences – Knowledge of the person in Philosophy and in the Sciences and criminal liability, Theory of Society and Criminal Liability, and Internationalisation of Criminal Law and Criminal Procedure and International Criminal Law). Each group brings together researchers who, despite dealing with the same topic area, have different perspectives, which enables critical reflection and constructive discussion of the results obtained. The research is linked with that carried out on the PhD, Masters and other postgraduate courses. The research results are disseminated via conferences, theses and other scientific publications, including the CIDPCC journal.

SOCIUS

RESEARCH CENTRE IN ECONOMIC AND ORGANIZATIONAL SOCIOLOGY

SOCIUS is a member of the consortium CSG – Research in Social Sciences and Management:

VERY GOOD

Evaluation (2019)

120

FTE researchers

2,19 M€

Funding FCT

KEYWORDS

(CSG): Economic Sociology; Organizations and Business; Economic History; Development Studies; Sustainability Sciences; Socioeconomics.

STRATEGIC AIMS

SOCIUS, Research Centre in Economic and Organizational Sociology, is a research unit from ISEG - School of Economics & Management, Universidade de Lisboa, created in May 1991 by teachers and researchers. SOCIUS is accredited by FCT - Fundação para a Ciência e Tecnologia, and has been classified as “Excellent” concerning the Evaluation of R&D Institutions, since 1999. The SOCIUS research team consists mainly of ISEG faculty members, plus full time research fellows and post-doc research fellows, as well as faculty from other universities. SOCIUS main area of scientific activity, that of economic and organisational sociology, is considered in its broadest sense, encompassing numerous points of contact between contemporary sociology and economics, in addition to other scientific approaches which study economic and organizational reality. Over the years, participation in scientific networks has been a major priority. An active and prominent role has been taken in the development of networks with national and international partner institutions to promote knowledge sharing, collaborative research projects and debate on common fields of research. SOCIUS is currently integrated within CSG - Research in Social Sciences and Management -, the R&D consortium, created in 2013 at ISEG by four of its research centres – SOCIUS, ADVANCE, CEaA and GHES. CSG set up a common framework for research and aims at bringing together researchers who share similar conceptions of the study of socioeconomic and organizational reality, to enhance complementarities and reach a critical mass in this field of study.

STRATEGIC AIMS

The activities developed by SOCIUS since its formation are the following: a) Scientific research projects; b) Participation in different research programmes and national and international networks; c) Organization of Seminars, national and international Conferences, Colloquiums and Workshops; d) Regular reception of master’s, doctoral and post-doctoral research scholars; e) Inclusion of graduate, post-graduate, master’s and PhD students in scientific research projects; f) Supervision of post-graduate works and master’s and doctoral theses; g) Support to ISEG/UTL Master’s and PhD Programmes in Economic and Organizational Sociology; h) Consulting; i) Training for civil society’s organizations and institutions, including the training of teachers at various academic levels; and j) Publication and promotion of different studies (working papers, research works, support texts for training exercises, seminars, etc.).

MAJOR AREAS AND LINES OF RESEARCH

The principal areas of research and work lie in the field of Economic and Organizational Sociology, and essentially focus on the following lines of research, are: a) Work, Employment, Gender and Organizations; b) Science, Technology, Health and Professions; c) Sustainable; Development, the Tertiary Sector and Social Networks; and d) Globalisation, Economics, Space and Culture.



COORDINATOR

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GHES

RESEARCH CENTRE OF ECONOMIC AND SOCIAL HISTORY

GHES is a member of the consortium CSG – Research in Social Sciences and Management:

VERY GOOD

Evaluation (2019)

120

FTE researchers

2,19 M€

Funding FCT

KEYWORDS

(CSG): Economic Sociology; Organizations and Business; Economic History; Development Studies; Sustainability Sciences; Socioeconomics.

DESCRIPTION

The Research Centre of Economic and Social History (GHES) has existed since 1972 and its founding members were all from the team that taught Economic and Social History at degree level at ISEG. The institutionalisation of GHES as a research centre took place in 1975 and the number of researchers involved has been increasing over the years, contributing to adding resources for these fields of study. At the same time, the faculty recognized the doctoral degree in Economic and Social History and, furthermore, several disciplines of economic history have been incorporated into the Masters and Postgraduate courses offered by ISEG. Cooperation was also developed in the area of Economic and Social History with other Masters than those taught at Universidade Técnica de Lisboa. The regular publication of the GHES Working Papers started in 1996.

STRATEGIC AIMS

The Research Centre of Economic and Social History (GHES) consolidated the pursuit of three key objectives which have shaped its development, namely: promote research in Economic and Social History at ISEG; contribute to improving the teaching of Economic and Social History, and; disseminate the results of current research in this field of science, both through the regular publication of the Working Paper Series, and also through the organization and participation in workshops, seminars and conferences.

MAJOR AREAS AND LINES OF RESEARCH

In recent years, GHES has developed research and provided services in different areas, of which the following stand out: history of urban supply and consumption, modern economic growth, history of public finances, business history, maritime history, monetary and credit history, history of economic thought and financial history.



COORDINATOR

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UECE

RESEARCH UNIT ON COMPLEXITY AND ECONOMICS

UECE is a member of the research consortium REM – Research in Economics and Mathematics:

VERY GOOD

Evaluation (2019)

70

FTE researchers

1,34 M€

Funding FCT

KEYWORDS

(REM): Macroeconomics; Econometrics; Microeconomics; Applied Mathematics; Statistics and Actuarial Modeling

STRATEGIC AIMS

UECE - Research Unit on Complexity and Economics is a research centre of ISEG, Lisbon School of Economics and Management, whose mission is to contribute to the advancement of scientific knowledge mainly in the area of Economics, but also in the Sciences of Complexity and in interdisciplinary areas. UECE currently has 41 members, 7 research associates, and 21 PhD students. The main UECE goals are: Promoting research on Economic Sciences, with emphasis on theoretical and applied economic analysis, in the areas of Macroeconomics and Monetary Economics, Microeconomics, Markets and Finance, and Complex Economic Systems; Developing new statistical methods applied to economics; Organising seminars, conferences and other events to disseminate scientific results; Participating in international research networks and promoting the participation of researchers in international congresses and conferences; Promoting and publishing articles, working papers and other documents to stimulate research in the abovementioned areas. Other outputs and activities of interest include: Hosting scientific events (conferences, workshops, and seminars) that aim at disseminating scientific results and attracting leading international scholars to interact with the members of UECE and postgraduate students. Examples of such events are the following recurrent conferences: UECE Lisbon Meetings: Game Theory and Applications; UECE conference on Economic and Financial Adjustments in Europe; Lisbon Research Workshop on Economics and Econometrics of Education.

STRATEGIC AIMS

UECE's research output is a useful instrument for the formulation and the critical analysis of public policy, also in connection with industry stakeholders; also, UECE bears strong cooperation ties with governmental institutions, Central Banks, international organisations (IMF, OECD, and ECB), and regulators to drive an updated agenda of research into economic and societal challenges. Although UECE ranks high in publication records according to international standards, but in the next years we intend to strengthen our active policy for promoting publication in excellent scientific journals and books published by international publishers. The PhD program is geared towards people working in industry (Bank of Portugal, Insurance sector). Some modules starts at 6 p.m. and are designed to educate people who work in the Portuguese public sector. This is an important mission which creates a positive impact on the Portuguese society and economy. At the same time, this keeps the program from being purely academically oriented. The unit hosts an ambitious plan for seminars, conferences, and workshop events aimed at building a culture of sharing practices to facilitate cross-disciplinary orientation of research and student mentoring.

MAJOR AREAS AND LINES OF RESEARCH

The Macroeconomics Group has 16 members, some of them also with links with Banco de Portugal. Several topics of research include fiscal policy, monetary policy alongside macro econometric modelling and DSGE modelling. Other lines of research deal with macroeconomic dynamics,



COORDINATOR

António Afonso

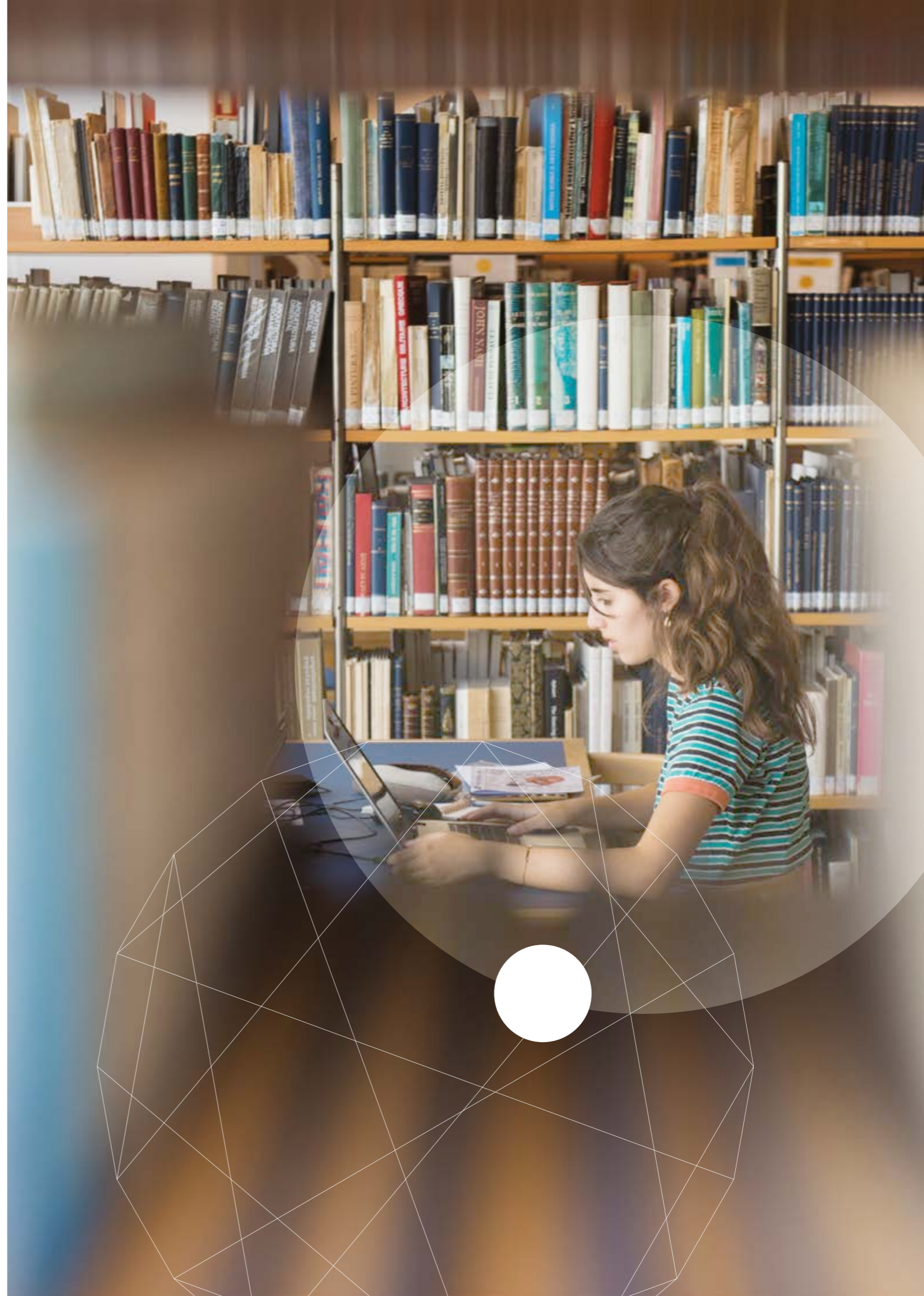
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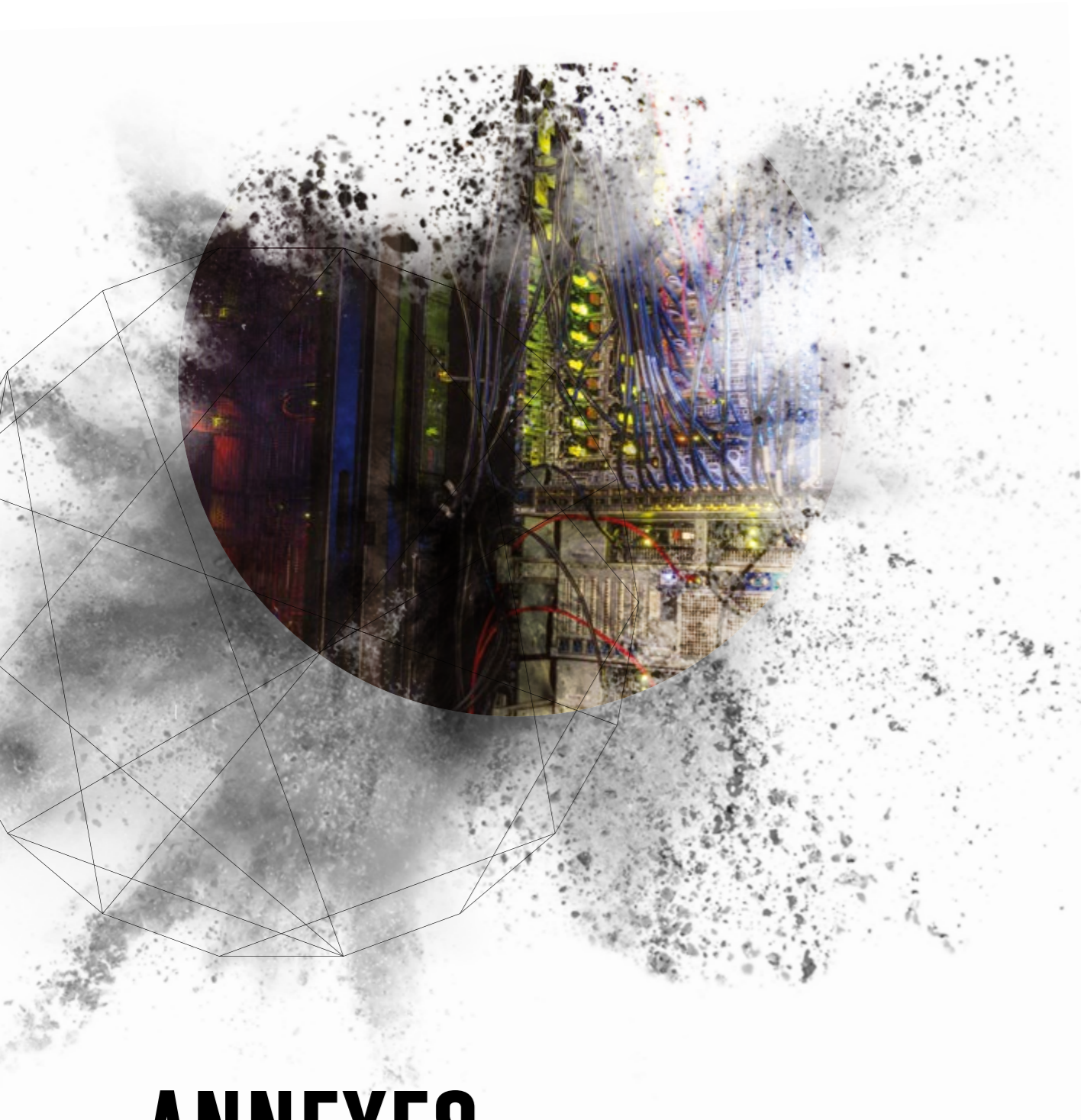
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macro prudential policies and household indebtedness, government efficiency analysis, and international economic and financial integration, euro area long-term sovereign bond yields, macroeconomics of imperfect competition, firm dynamics and macroeconomic dynamics or on the mathematics of macroeconomic dynamics, measuring the output gap, and the relevance of public investment for economic activity. The Economics and Mathematics of Complex Systems group is a multidisciplinary group that consists of 7 mathematicians and 7 economists who contribute to tackling human problems using their modelling expertise. Many of these contributions rely on the feedback of social phenomena, which, in addition to material constraints, are also a result of human decision processes. The Microeconomics group consists of 16 researchers, and most of them are also full-time lecturers at public universities. The group conducts both theoretical and applied research using lab and field experimental methods and non-experimental survey data. Three research areas have been particularly productive.





ANNEXES

ASSOCIATED LABORATORIES WITH THE PARTICIPATION OF ULISBOA AND ITS R&D UNITS

NAME	ACRONYM	R&D UNITS OF ULISBOA (OR WITH THE PARTICIPATION OF ULISBOA)
Associated Laboratory for Animal and Veterinary Science	AL4Animals	Centre For Interdisciplinary Research in Animal Health (CIISA)
Associated Laboratory for Green Chemistry	LAQV/REQUIMTE	Glass And Ceramic for the Arts (VICARTE)
Associated Laboratory of Energy, Transports and Aeronautics	LAETA	Mechanical Engineering Institute (IDMEC)
Centre for Environmental and Marine Studies	CESAM	Centre For Environmental and Marine Studies
Global Change & Sustainability Institute	CHANGE	Centre for Ecology, Evolution and Environmental Changes (CE3C)
Health Research Network: from the Lab to the Community	RISE	Cardiovascular Centre at the University of Lisbon (CCUL)
Institute Dom Luiz	IDL	Institute Dom Luiz (IDL)
Institute for Health and Bioeconomy	I4HB	Institute for Bioengineering and Biosciences (IBB) and INESC Microsystems And Nanotechnologies (INESC-MN)
Institute for Plasmas and Nuclear Fusion	IPFN	Institute for Plasmas and Nuclear Fusion (IPFN)
Institute for Systems and Computer Engineering, Research and Development	INESC-ID	Institute for Systems and Computer Engineering, Research and Development (INESC-ID)
Institute for Telecommunications	IT	Institute for Telecommunications (IT)
Institute of Molecular Medicine	IMM	Institute of Molecular Medicine (IMM)
Institute of Molecular Sciences	IMS	Structural Chemistry Center (CQE)
Institute Of Social Sciences, University Of Lisbon	ICS-ULISBOA	Institute of Social Sciences, University of Lisbon (ICS-ULISBOA)
Laboratory For Sustainable Land Use and Ecosystem Services	TERRA	Forest Research Centre (CEF); Centre of Geographical Studies (CEG); Environmental Health Institute (ISAMB) and Linking Landscape, Environment, Agriculture and Food (LEAF)
Laboratory of Instrumentation and Experimental Particle Physics	LIP	Laboratory of Instrumentation and Experimental Particle Physics (LIP)
Laboratory of Physics for Materials and Emergent Technologies	LaPMET	Center of Physics and Engineering of Advanced Materials (CEFEMA)
Laboratory of Robotics and Engineering Systems	LARSyS	Center For Innovation, Technology and Policy Research (IN+); Institute for Systems and Robotics (ISR); Interactive Technologies Institute (ITI) and Marine, Environment and Technology Centre (MARETEC)
Research Network in Biodiversity and Evolutionary Biology	INBIO	Centre for Applied Ecology "Prof. Baeta Neves" (CEABN)

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