

ICREA MEMOIR 2016



Alemán Llansó, Carles
Universitat Politècnica de Catalunya (UPC)
Experimental Sciences & Mathematics
ICREA Academia 2008 & 2015

Carles Alemán graduated in Chemistry from the University of Barcelona (Spain). He received his PhD from the Polytechnic University of Catalonia (UPC) in 1994, where he was promoted to Full Professor of Physical Chemistry. He was postdoctoral researcher at the ETH in Zürich (Switzerland) in the group headed by U.W. Suter and visiting professor at the Università di Napoli Federico II (Italy), University of Twente (Holland) and Universidade Federal do Rio Grande do Sul (Brazil). He is leader of the Innovation in Materials and Molecular Engineering (IMEM) group in Chemical Engineering Department, and co-leading the Nanochemistry group in the Centre of Research on Nano-Engineering. Among others awards, Carles received the Catalan Government Distinction Award for University research (2003), the I3 Research Intensification Distinction (2007) and the ICREA Academia (2008). He is co-author of more than 475 scientific articles, reviews, book chapters and books, and of several patents.

Research interests

The research interests of Carles Alemán are focused on hybrid chemical systems derived from the combination of organic or inorganic biomaterials with conducting polymers for applications in the biomedical and energy storage fields. Within this context, he is particularly interested in the use of nanostructures for the fabrication of: biointerfaces for the detection of neurotransmitters, psychotropic drugs and glucose, multi-functional scaffolds for tissue engineering, protective coatings against environmental degradation, and all-organic batteries and supercapacitors. For such research, Carles Alemán uses both experimental approaches based on the synthesis, processing and characterization of (bio)materials, as well as computer simulation strategies for the understanding of chemical and physical phenomena at the microscopic level.

Keywords

Electroactive conducting polymers, Bioactive platforms, Biointerfaces, Detection, Energy, Biomineralization, Nanotechnology.

ICREA MEMOIR 2016

Anduiza Perea, Eva
Universitat Autònoma de Barcelona (UAB)
Social & Behavioural Sciences
ICREA Academia 2015



I am associate professor at the Department of Political Science of the UAB since 2003. I hold a degree in Political Science and Sociology from the Universidad Complutense de Madrid, a postgraduate diploma in Social Science Data from the University of Essex, and a PhD in Political and Social Sciences from the European University Institute. Before joining the UAB I taught Political Science at the universities of Salamanca and Murcia. I am currently principal investigator of the research group on Democracy, Elections and Citizenship. I am a member of planning committee of the 5th Module of the Comparative Study of Electoral Systems, and of the editorial boards of European Journal of Political Research, Acta Politica, and Political Studies among other outlets. I have been vicepresident of the Spanish Political Studies Association (AECPA) between 2009 and 2013. I was the first female scholar to have been awarded the Stein Rokkan Prize for comparative social science research.

Research interests

I am interested in the analysis of the conditions under which citizens are more likely become politically engaged. For this purpose, I use mainly experimental and observational survey evidence, together with non-reactive data from social media and digital traces. I am particularly interested in how contexts of economic recession and political upheaval can influence political attitudes (such as political knowledge, satisfaction with democracy, perceptions about corruption, or populism). I am also interested in the analysis of the causes and consequences of political participation (both electoral turnout and political protest) and the factors that may enhance political equality by facilitating the political inclusion of disadvantaged citizens.

Keywords

Political participation, attitude change, populism, corruption, social media, experiments, panel data

ICREA MEMOIR 2016



Araus Ortega, Josep Lluís

Universitat de Barcelona (UB)

Life & Medical Sciences

ICREA Academia 2013

Josep Lluís Araus is a Biologist (1978) and PhD in Plant Physiology (1983) from the University of Barcelona (UB) and a Technical Agricultural Engineer (1982) from the Catalanian Polytechnic University. He conducted postdoctoral research in crop physiology at the University of Georgia (US), spent a sabbatical at the International Center for Agricultural Research in the Dry Areas (Syria) and at various times in his career has worked at the Smithsonian Tropical Research Institute (Panama), the International Maize and Wheat Improvement Center (CIMMYT, Mexico) and other institutions. He became Full Professor of Plant Physiology at the UB in 1993. From 2000-2003 he was a National Seconded Expert at the Directorate General for Research of the EU (Brussels) and from 2006-2008 was Principal Scientist at CIMMYT. He is PI of several international projects (EU and elsewhere) and co-author on more than 180 publications in SCI and SSCI Journals, mostly from the first quartile.

Research interests

His main research interest is Crop Physiology in a wide sense, including the study of photosynthetic metabolism, the mechanisms of plant adaptation to abiotic stresses (such as water stress, salinity, nutritional deficiency, heavy metals), developing phenotyping techniques for crop breeding, and paleoreconstruction of the agricultural conditions in antiquity. The main plant species targeted have been cereals, where he has contributed to developing novel uses of stable isotopes in applications ranging from plant breeding to archaeology. His current research interest also includes the deployment of different remote sensing approaches for phenotyping with emphasis in low-cost approaches. International cooperation is also a main interest, which includes projects in North Africa and Sub-Saharan countries, Latin America and China.

Keywords

Photosynthesis, crop breeding, ecophysiology, global change.

ICREA MEMOIR 2016



Arenas, Alex

Universitat Rovira i Virgili (URV)
Experimental Sciences & Mathematics
ICREA Academia 2011 & 2016

Alex Arenas (Barcelona, 1969) is Full Professor at the Departament d'Enginyeria Informàtica i Matemàtiques (DEIM) of the Universitat Rovira i Virgili. He obtained his PhD in Physics in 1996. In 1995, he got a tenure position at DEIM, and in 1997 he became associate professor at the same department. In 2000, he was visiting scholar at the Lawrence Berkeley Lab. (LBL) in the Applied Mathematics group of Prof. Alexandre Chorin (University of California, Berkeley). After this visit, he started a collaboration with Berkeley, and in 2007 he became visiting researcher of LBL. Arenas has written more than 175 interdisciplinary publications in major peer reviewed including Nature, Nature Physics, PNAS, Physics Reports and Physical Review Letters, which have received more than 9000 citations. He is one of the few Europeans serving as Associate Editors of one of the most important publication in physics worldwide, the American Physical Society journal, Physical Review E.

Research interests

His research interests are currently focused on the physics of networked multilevel complex systems. The comprehension of the interplay between the structure of the connectivity and the functionality of networked system is a major challenge for the physics of this era. Concepts that applied to the nowadays classical network theory, must be revisited in the framework of multilevel coupling scenarios, in what is being known as the physics of multilayer networks. The applicability of the understanding of the basic phenomena underlying these systems have direct applications in neuroscience, social sciences, systems biology and computer science.

Keywords

Complex networks, multiplex networks, modular structure, synchronization, game theory, epidemic spreading

ICREA MEMOIR 2016



Arias Vicente, Irene
Universitat Politècnica de Catalunya (UPC)
Engineering Sciences
ICREA Academia 2016

After a BS/MS Civil Engineering studies at UPC, Irene Arias was granted a BSCH/Fulbright fellowship to pursue a doctoral degree with Prof. Achenbach at Northwestern University (USA) focusing on mathematical and computational modelling of nondestructive evaluation techniques. Right after graduation, she expanded her background in computational mechanics and materials modelling as a postdoctoral scholar in the group of Prof. Ortiz at Caltech. After joining the UPC faculty in 2004, she established a research program in modelling and simulation of active materials, funded by a Marie Curie International Reincorporation Grant and the Spanish Government. In 2015, she obtained a Starting Grant from the European Research Council devoted to enabling flexoelectric engineering through modelling and simulation.

Research interests

Her goal is to develop mathematical models and advanced simulation techniques to enable the conception and design of new materials and devices for electromechanical transduction. Recently, she became intrigued by a fairly unknown mechanism of electromechanical transduction at the nanoscale, namely flexoelectricity. This mechanism, quite different from piezoelectricity and far less understood, is responsible for the generation of electric fields in any dielectric upon bending. Contrary to piezoelectricity, it is not restricted to a particular class of materials. Thus it broadens the class of materials used for electro-mechanical transduction, which could enable affordable, biocompatible and self-powered small-scale electromechanical transducers. However, there are fundamental open questions in the field of flexoelectricity, some of which she is trying to address through modelling and simulation.

Keywords

Flexoelectricity, computational mechanics, mechanics of materials, multifunctional metamaterials, electromechanical modeling of solids, multiscale material modeling, ferroelectric materials, materials design, fracture mechanics

ICREA MEMOIR 2016



Aromí, Guillem
Universitat de Barcelona (UB)
Experimental Sciences & Mathematics
ICREA Academia 2008 & 2013

Born in Barcelona in 1969, Dr. Guillem Aromí graduated in Chemistry and Chemical Engineering at the University of Barcelona (UB) and EHICS (Strasbourg, France), respectively. He earned his PhD in Chemistry at Indiana University (USA) and completed postdoctoral stays at Leiden University (Holland) with a Marie Curie Fellowship and at Manchester University (UK). He became in 2003 a "Ramon y Cajal" Fellow at the UB where he is Associate Professor of Chemistry since 2007. He has spent visiting periods as researcher or invited scholar in Leiden University (Holland), Monash University (Australia), Bordeaux University (France) and University of California Berkeley (USA). Dr. Aromí was awarded the UB/Generalitat de Catalunya distinction for "enhanced research profile" and an ICREA Academia twice, in 2008 and 2013. He is also recipient of an ERC Starting Grant. In 2012 he chaired the Vth International Conference on Molecular Materials, and has organized two symposia at EMRS meetings.

Research interests

I focus on the design, synthesis and study of molecular functional materials, as a way to face the challenges of Nanotechnology, with three main lines. A) Design and preparation of molecules for Quantum Computing (QC) through the coherent manipulation of spins. This is pursued by preparing molecules that incorporate the spin carriers leading to the appropriate energy spectrum and quantum dynamic properties. B) Preparation and study of switchable materials based on spin crossover (SCO). We develop new SCO materials with the aim of exploiting their potential in nanotechnology, by studying and enhancing their dynamic properties in relation to intermolecular interactions. C) Preparation of magnetic photoswitchable molecules. We design photomagnetic molecules by the synthesis of ligands with photoactive moieties and their magnetic complexes.

Keywords

Coordination Chemistry, Molecular Magnetism, Single Molecule Magnets, Quantum Computing, Functional Molecules

ICREA MEMOIR 2016



Arroyo, Marino

Universitat Politècnica de Catalunya (UPC)

Engineering Sciences

ICREA Academia 2008 & 2015

Marino Arroyo graduated in civil engineering at the UPC, and then obtained a PhD from Northwestern University in 2003. After a postdoctoral stay at Caltech, he joined the UPC in 2005, where he is full professor since June 2017. He was also a visitor at the Institute for the Mathematics and its applications in Minnesota in 2005. Since 2017, he is an Associated Researcher at the Institute of Bioengineering of Catalunya (IBEC). He has published 60 original research articles in diverse fields including computational mechanics, solid mechanics, soft matter, biophysics or molecular simulation. He has received the ASME/BOEING Structures and Materials Award, the Zienkiewicz Young Scientist Award by ECCOMAS, was the Timoshenko Visiting Scholar at Stanford, and was a visiting professor at UPMC in Paris. He obtained an ERC Starting grant in 2009 and a Consolidator grant in 2016. He has advised 7 PhD theses and 5 postdoctoral researchers.

Research interests

His research goal is to develop theories and computational methods to understand the small-scale mechanics of materials and biological systems, with a recent emphasis on cell and tissue mechanobiology and bio-inspired materials. Together with an interdisciplinary group, he combines methods from mathematical and physical modeling, theoretical and applied mechanics, scientific computing, and computational mechanics to predict and quantify out-of-equilibrium chemo-mechanical phenomena associated with biological function, which control the mechanical functions of cells and tissues, including the way they organize in space and time, their motility, or the way they resist mechanical insults. He is also interested in distilling the engineering principles underlying biological system to conceive and build bio-inspired devices and materials. Past research includes meshfree methods for PDE and the mechanics of nanotubes and graphene.

Keywords

Computational mechanics, theoretical and applied mechanics, 2D materials, mechanobiology, biomembranes, meshfree methods, multiscale modeling

ICREA MEMOIR 2016



Badia, Santiago

Universitat Politècnica de Catalunya (UPC)

Engineering Sciences

ICREA Academia 2014

Santiago Badia (Palma, 1978) is Full Professor of Computational Science and Engineering at UPC and leader of the “Large Scale Scientific Computing” Department at CIMNE. Since 2006, he has published 56 articles, 5 book chapters, and a monograph. He has been semi-plenary lecturer at the WCCM, and plenary lecturer at Coupled'15, HPCSE 2015, and YIC17. Prof. Badia has received the 2006 SEMNI and ECCOMAS awards for the best national and European thesis in computational mechanics, Outstanding PhD award at UPC 2005-2006, 2010 Juan Carlos Simo young researcher award in computational mechanics, 2012 Young Investigator Award in Applied Mathematics from the Spanish Society of Applied Mathematics, the 2016 Young Investigator award from the Royal Academy of Engineering of Spain, and Ramon y Cajal, Marie Curie, and UT Austin JT Oden fellowships. He obtained one Starting Grant and two Proof of Concept Grants from the European Research Council.

Research interests

His research focuses on the development, mathematical analysis, and application of numerical methods in engineering and sciences, and high performance scientific computing. He actively works on advanced discretization techniques, mainly finite elements, for the numerical approximation of complex multiphysics phenomena governed by partial differential equations, e.g., additive manufacturing and fusion reactor simulations. His research is also focused on massively parallel and optimal linear solvers for the (non)linear systems resulting from discretization. He is a main developer of FEMPAR, his team's in-house code, a massively parallel finite element software distributed as free software that has been positioned as world's most scalable domain decomposition solver, and has efficiently run at the whole JUQUEEN supercomputer (the largest supercomputer in Europe) on 458,672 processors. FEMPAR is now on the High-Q club of the most scalable European scientific computing codes.

Keywords

Finite element methods, numerical analysis, large scale computing, domain decomposition, multi-physics simulations

ICREA MEMOIR 2016



Barceló, Juan A.
Universitat Autònoma de Barcelona (UAB)
Humanities
ICREA Academia 2014

Juan A. Barceló obtained a PhD in History and Archaeology in 1989 at the Universitat Autònoma de Barcelona. After a 2 years Post-doctoral stage at the CNRS-Paris, collaborating with Jean Claude Gardin, he came back to the Department of Prehistory, Universitat Autònoma de Barcelona, where he has been teaching and doing research on statistical issues in archeology. He is the founder and director of the Laboratory for Quantitative Archaeology and Computer Applications, and co-founder of the Laboratory for the Computer Simulation of Social and Historical Dynamics. He has been named President of the Spanish Association of Computer Applications in Archaeology, and represents Spain at the International Association on Computer Applications and Quantitative Methods in Archaeology International Society, and Commission IV Data Management and Mathematics of the Union International for Prehistoric and Protohistoric sciences.

Research interests

Juan A. Barceló is interested in all questions related with the theoretical and methodological development of Archaeology and the Historical sciences, notably on the domain of so-called Digital Humanities. He has investigated the suitability of modern statistical tools for the Spatial Analysis of archaeological data, and explored alternative methods for data mining, seriation and classification (neural networks, probabilistic graphical models, etc.). Currently, he is engaged in new artificial intelligence approaches to the analysis of social dynamics of past societies (computer simulation) and also in many projects related with Computer Assisted Visualization and Virtual Reality applied to Digital Heritage. As an archaeologist, he has participated in excavations in Spain, Portugal, Italy, Syria, Nicaragua and Argentina.

Keywords

Archaeology, Computer Simulation, Computational Intelligence, Prehistory, Data Mining

ICREA MEMOIR 2016



Barrantes-Vidal, Neus
Universitat Autònoma de Barcelona (UAB)
Social & Behavioural Sciences
ICREA Academia 2012

Neus Barrantes-Vidal (Barcelona, 1971) obtained her BSc in Psychology at the Universitat Autònoma de Barcelona (UAB), where she also obtained her PhD (Outstanding Doctoral Dissertation Award) in 2000. She conducted a MSc at the Hospital Clínic de Barcelona and became a Licensed Specialist in Clinical Psychology in 2008 (Ministry of Science). She was a visiting predoctoral researcher in the University of Oxford. She became an Associate Professor at the Department of Clinical Psychology of UAB, where she is the principal investigator of the “Person-Environment Interaction in Psychopathology” Research Group (SGR). She held an Adjunct Associate Professorship at the University of North Carolina at Greensboro (USA). She was a member of the Psychology Advisory Board for the Assessment of Scientific Research at the Ministry of Economy and Competitiveness (2012-16). In addition, she serves as Research Consultant for clinical centers at the Sant Pere Claver Health Foundation.

Research interests

We study the interaction of genotype, person and psychosocial environment in configuring several etiological pathways to psychosis. We identify individuals with heightened risk for psychosis in nonclinical (ie, schizotypy) and clinical populations (ie, individuals with at risk mental states) and conduct longitudinal studies to delineate trajectories of risk and resilience for schizophrenia spectrum disorders. Our approach focuses on the dynamics of sub/clinical symptoms and person-environment interactions in real life, and makes use of mobile technologies to map such dynamic mental processes and obtain ecologically valid measures. This work has clinical applications, as understanding real-life symptom variation and its internal and situational determinants is critical for improving diagnoses and tailoring individualized treatments. Finally, I am also interested in healthy expressions of risk for psychopathology (eg, creativity), and in epistemological issues.

Keywords

Clinical Psychology, Ecological assessment, Dimensional models, Psychosis, Schizotypy

ICREA MEMOIR 2016

Bertalmío, Marcelo
Universitat Pompeu Fabra (UPF)
Engineering Sciences
ICREA Academia 2012



Marcelo Bertalmío (Montevideo, 1972) received the B.Sc. and M.Sc. degrees from Universidad de la República, Uruguay, and the Ph.D. degree in electrical and computer engineering from the University of Minnesota in 2001. Since 2006 he is an Associate Professor at UPF in the ICT Department. His publications total more than 9,000 citations. He was awarded the 2012 SIAG/IS Prize by SIAM for co-authoring the most relevant image processing work published in the period 2008-2012. Has received the Femlab Prize, the Siemens Best Paper Award, the Ramón y Cajal Fellowship, among other honors. He is an Associate Editor for SIAM-SIIMS and for Frontiers in ICT, and elected secretary of SIAM's activity group on imaging for 2014-15. Has an ERC Starting Grant and an ERC Proof of Concept Grant. He's co-IP of the H2020 project HDR4EU. Has written a book published by CRC Press in 2014, and is preparing two other books, for Springer and Elsevier, to appear in 2018.

Research interests

His current research interests are in developing image processing algorithms for cinema that mimick neural and perceptual processes in the human visual system.

Keywords

Image Processing, Computer Vision

ICREA MEMOIR 2016



Boguñá Espinal, Marián
Universitat de Barcelona (UB)
Experimental Sciences & Mathematics
ICREA Academia 2010 & 2015

Marián Boguñá (Barcelona, 1967) is an associate professor at the Universitat de Barcelona. He graduated in Physics in 1994 and obtained his PhD in Physics in 1998. In 1999, he moved to the USA to do a postdoctoral stay with Prof. George H. Weiss at the National Institutes of Health, USA. After this period, he moved back to Barcelona where, in 2003, he was awarded a Ramón y Cajal fellowship. He got the tenure position at the end of 2008. He has also spent several months in the USA as invited guest scientist at Indiana University. M. Boguñá has written over 70 publications in major peer reviewed international scientific journals, book chapters, and conference proceedings. Among those, Nature, Nature Physics, Nature Communications, PNAS, Physical Review Letters, and Physical Review X. In January 2008, he obtained the Outstanding Referee award of the American Physical Society. Since January 2013 he serves as an editorial board member for Scientific Reports.

Research interests

His research interests are focused on the study of complex systems. In particular, those systems made up of a large number of units that interact through complex topologies and, therefore, are suitable to be studied using statistical physics tools. Such systems are ubiquitous and can be found in very diverse fields: societies at the large scale, cellular networks, or communication networks like the Internet, to name just a few. One of the major challenges in this field is the understanding of the coupling between the complex topologies shown by these type of systems and the functions they perform.

Keywords

Complex Systems, Complex Networks, Statistical Physics.

ICREA MEMOIR 2016

Bosch Fusté, Elena
Universitat Pompeu Fabra (UPF)
Life & Medical Sciences
ICREA Academia 2015



Elena Bosch (Barcelona, 1972) graduated in Biology at the Universitat de Barcelona in 1995 and, after pursuing her doctoral research on population genomics of the North African populations, obtained her PhD at the Universitat Pompeu Fabra. In February 2000, she moved to the UK, where she was appointed Research Assistant at the University of Leicester to work on the human Y chromosome diversity and dynamics, in the laboratory of Dr. Mark Jobling. In 2004, thanks to a “Ramón y Cajal” contract, she established her own research group on Evolutionary Population Genetics at the Universitat Pompeu Fabra. In December 2008, she was awarded tenure with an Associate Professor (“professor agregat”) position that changed to Assistant Professor (“professor titular”) in February 2012. In 2013, she was awarded with the Prize for Outstanding Teaching by the Social Council of the UPF.

Research interests

My research group focuses on investigating different aspects of human genetic diversity. In particular, I am interested in: (i) human adaptation, that is, in identifying traits that have undergone positive selection during human evolution in order to understand the adaptive events that have shaped our genomes; and (ii) the architecture of the genetic predisposition to complex disease. The search for genetic signatures of selection is pursued at different levels using comparative data and exploring intraspecific diversity patterns mainly within human populations but also in chimpanzees. In those cases where the imprint of selection is confirmed, we aim to determine the molecular bases of the functional adaptation. As for complex disease, we believe that the application of population genetic models can help in unraveling the genetic contribution to them as well as in understanding the differences in penetrance, age of onset, and risk allele frequencies between genetic disorders.

Keywords

Population genetics, evolution, genetic epidemiology, human adaptation.

ICREA MEMOIR 2016



Bosch i Tubert, Fàtima
Universitat Autònoma de Barcelona (UAB)
Life & Medical Sciences
ICREA Academia 2012

Fatima Bosch is a Pharmacist (1980) and PhD in Biochemistry (1985) by the University of Barcelona. She conducted post-doctoral studies at Vanderbilt University (1985), Case Western Reserve University (1988-1990), and NCI-Frederick Cancer Research and Development Center (1991). She is currently Full Professor of Biochemistry and Molecular Biology (1999) and Director of the Center of Animal Biotechnology and Gene Therapy (2003) at the Universitat Autònoma Barcelona. She has been granted the Rey Juan Carlos I (1985), Francisco Grande Covián (1998), Narcís Monturiol (2002), Sant Jordi Cross (2005) and Alberto Sols (2006) awards. She has been Founding member of the European Society of Gene and Cell Therapy (1992), President of the Spanish Society of Gene and Cell Therapy (2007-2009), Vice-President of the European Association for the Study of Diabetes (2009-2012) and member of the Gene Doping Expert Group of the World Anti-Doping Agency (2013-present).

Research interests

Her research focuses on studying the pathophysiological causes of diabetes mellitus using transgenic animal models and developing gene therapy approaches to this disease by in vivo genetic manipulation of tissues using viral vectors. In recent years, she has applied her know-how on gene transfer technologies to the development of gene therapies for inherited metabolic disorders such as Muccopolysaccharidoses.

Keywords

Diabetes, Gene Therapy, Transgenic Animals, Mucopolysaccharidosis

ICREA MEMOIR 2016



Brugada i Terradellas, Ramon

Universitat de Girona (UdG)

Life & Medical Sciences

ICREA Academia 2015

Ramon Brugada (1966, Banyoles) obtained his MD in 1990 at the Universitat Autònoma de Barcelona. He specialized in Internal Medicine at Emory University, Atlanta, and in Cardiology at Baylor College of Medicine, Houston. After 16 years, he returned home in 2008 to launch the new Medical School at the University of Girona. He presently works at the three main pillars of the academic project in Girona: i) TEACHING: He was the first Dean of Medicine. He led an innovative problem-based-learning teaching proposal. The first class, 2014, ranked number 1, among 37 medical schools in Spain, in the MIR exam. Since 2015 then he remains Professor of Medicine. ii) CLINICAL CARE: Chief of Cardiology at the Hospitals Dr Trueta and Santa Caterina. Director of the Cardiovascular Genetics Unit, specialized center for cardiac inherited diseases. iii) RESEARCH: Director of GenCardio at the Institut d'Investigació Biomèdica de Girona (IDIBGI).

Research interests

GenCardio investigates the mechanisms associated with sudden cardiac death in the young from different aspects of biomedicine: genetics, epigenetics, molecular biology, basic electrophysiology, bioinformatics and clinical cardiology. The group has published extensively in the field and has made seminal contributions, like the publication of the first genes for Brugada syndrome and short QT syndrome. Among the ongoing research projects stand the Moscat project (Sudden Cardiac Death in Catalonia) as well as the Girona Vital project, the largest public access defibrillation program in Europe. GenCardio actively participates in translational research and development of diagnostic tools. Thus, in the last years it has developed genetic panels for sudden cardiac death, sudden unexpected death in epilepsy and congenital cardiac diseases. In 2011 GenCardio launched the Diagnostic laboratory, a referral laboratory for genetic diagnosis of inherited cardiac diseases.

Keywords

Sudden death, genetics.

ICREA MEMOIR 2016



Cabellos Aparicio, Albert
Universitat Politècnica de Catalunya (UPC)
Engineering Sciences
ICREA Academia 2016

Albert Cabellos (PhD 2008) became an associate professor in 2015 at the Computer Architecture Department (Universitat Politècnica de Catalunya). He is the co-founder and scientific director of the NaNoNetworking Center in Catalunya. He has also founded the Open Overlay Router (<http://openoverlayrouter.org>) along with Cisco. He has been a visiting researcher at Cisco Systems and Agilent Technologies and a visiting professor at the Royal Institute of Technology (KTH), the Massachusetts Institute of Technology (MIT) and UC Berkeley. He is also editor of two Elsevier Journals and co-founder of the ACM NANOCOM conference. He has participated in several national (Cicyt), EU (FP7 and H2020), USA (NSF) and industrial projects. He has given more than 15 invited talks, participated in several IETF RFCs, co-authored more than 40 journal and over 100 conference papers. His main research interests are nano-scale communications and software-based and knowledge-based computer networks.

Research interests

Albert's main research interests are in the field of Computer Networks. Currently networks are evolving from a hardware-centric industry, where networks are fast but static and inefficient, to a software-centric field where networks will become flexible and programmable. Taking advantage of this ongoing evolution, Albert's main research goal is to bring Artificial Intelligence (AI) techniques to computer networks. By means of AI algorithms networks will be able to be deployed, operated and maintained truly autonomously. Such 'intelligent' networks will allow an unprecedented level of security and efficiency. This new paradigm is referred as 'Knowledge-Defined Networking'.

Keywords

Computer Networks, Software-Defined Networking, Knowledge-Defined Networking, Artificial Intelligence, Machine Learning

ICREA MEMOIR 2016



Cabeza, Luisa F.
Universitat de Lleida (UdL)
Engineering Sciences
ICREA Academia 2012

Luisa F. Cabeza (Barcelona, 1967) is Full Professor of the program Serra Húnter at the University of Lleida. She graduated at Institut Químic de Sarrià (Universitat Ramon Llull, Barcelona) on Chemical Engineering in 1992 and on Industrial Engineering in 1993, obtained the Master on Industrial Management in 1995, and her PhD on Industrial Engineering in 1996. She was a post-doctoral researcher at the USDA, ERRC in Philadelphia from 1996 to 1998, and in 1999 she joined the University of Lleida where she created the research group GREA. She has authored more than 290 peer reviewed publications and several book chapters. She is very active in different international forums such as the International Energy Agency (IEA), the Intergovernmental Panel on Climate Change (IPCC), the RHC Renewable Heating & Cooling - European Technology Platform, and the PPP SPIRE.

Research interests

Her research interests are focused in energy efficiency and renewable systems. Currently, she is focused mainly in thermal energy storage, from materials to systems and applications, with big interest in the environmental point of view, including embodied energy and CO₂ mitigation considerations. Recently, she has developed a deep interest in removing barriers for energy systems deployment, especially for thermal energy storage, energy efficiency in buildings and solar energy. Such barriers include human barriers, regulatory barriers, scientific barriers and technological barriers.

Keywords

Energy, heat transfer, solar energy, thermodynamics, thermal energy storage, energy efficiency

ICREA MEMOIR 2016

Cacho Lascorz, Isabel
Universitat de Barcelona (UB)
Experimental Sciences & Mathematics
ICREA Academia 2012



Isabel Cacho (Barbastro, 1969) is Associated Professor (Professora Agregada) at the University of Barcelona since 2008. She graduated in Geology in 1992 in the UB and earned her PhD in 2000 developed between the CID-CSIC and the UB. She was affiliated to the University of Cambridge as a post-doctoral researcher from 2000 to 2003 in the laboratory of Professor Sir Nick Shackleton. She was a fellow of the US-COMER Foundation during 2003-2004, associated to Columbia University. She obtained a Ramón y Cajal research position at the UB in 2004. She has been member of several national and international research committees of projects such as CLIVAR (Climate Variability), SOLAS (Surface Ocean Lower Atmosphere Study) and INQUA (International Union for Quaternary Research) and she was also member of the Sustainability council (CADS) of the Catalan Government. Dr. Cacho has written over 75 publications in major peer reviewed journals with more than 4000 citations (H-index=32).

Research interests

Her research is focussed on the study of past climate variability based on the analysis of deep marine sediments and also terrestrial archives like speleothems from caves. She is a specialist in the application of different geochemical tools for reconstructing past environment conditions. She has a strong background in the Mediterranean region, where she has evaluated the impact of past events of polar ice sheet instability. She is also intensively working in the Eastern Equatorial Pacific, reconstructing ocean-atmosphere coupled changes with a particular attention to the carbon cycle. Her current interest is very much focussed on evaluating the sensitivity of Iberian rainfall regimes to past climate oscillations and identifying potential ocean tele-connections. In 2015 Dr. Cacho has win one of the prestigious ERC-Consolidator grants.

Keywords

Paleoclimatology, Paleoceanography, Deep sea sediments, speleothems, global change

ICREA MEMOIR 2016



Campo Güerri, Elías
Universitat de Barcelona (UB)
Life & Medical Sciences
ICREA Academia 2012

Elias Campo received his MD/PhD from the Medical School of the UB. After his residency in Pathology at the Hospital Universitari de Bellvitge, he conducted a postdoctoral fellowship in molecular pathology at the National Cancer Institute, Bethesda, MD. He joined the Hospital Clínic and University of Barcelona UB, where he became Professor of Anatomic Pathology and Chief of the Hematopathology Unit. He is currently the Director of the IDIBAPS and Research Director of the Hospital Clínic. He is a member of the Steering Committee of the WHO Classification of the Hematopoietic Neoplasms and co-director of the Spanish Chronic Lymphocytic Leukemia Genome Project in the International Cancer Genome Consortium. He is editor of 5 books and has published 580 scientific articles in indexed journals (42.531 citations and an H index of 100). He has been included among the 1% most cited scientists in all the fields of sciences in 2014 and 2016 by the agency Thomson Reuters.

Research interests

His research activity is focused on the genetic and molecular mechanisms involved in the pathogenesis of lymphoid neoplasms and their clinical implications, particularly defining more precise diagnosis criteria, establishing predictive models of evolution and response to the treatment, and identifying the molecular basis for the development of new therapeutic strategies. Dr. Campo's research has a multidisciplinary approach from pathology to genomics. He has a broad network of collaborations and participates in international consortiums, such as the Leukemia Lymphoma Molecular profiling Project (LLMPP), the ICGC Spanish Chronic Lymphocytic Leukemia Genome Project and the European and Lymphoma Research Foundation Mantle Cell Lymphoma Networks. His research has contributed to the elucidation of the mutational and epigenetic profiles and pathogenetic mechanisms of different lymphoid neoplasms and their clinicopathological implications.

Keywords

Molecular Pathology, Lymphoid Neoplasms, Lymphoma, Tumor Progression, Genomic Alterations

ICREA MEMOIR 2016



Camps Carmona, Adriano
Universitat Politècnica de Catalunya (UPC)
Engineering Sciences
ICREA Academia 2008 & 2014

Adriano Camps is a Telecommunications Engineer and PhD from the Universitat Politècnica de Catalunya (UPC), Barcelona, Spain, in 1992 and 1996. In 1991-1992 he was at the ENS Télécommunications de Bretagne, France, and in 1999 at the Microwave Remote Sensing Laboratory, University of Massachusetts, Amherst. He has published over 180 papers, over 350 conference presentations, holds 10 patents, and has supervised 22 PhD theses, and more than 110 Bachelor and Master Eng. theses. According to Google Scholar his work has received more than 5477 citations, and his h-index is 37. He is co-founder of BALAMIS SL and MITICS SL. He co-leads the UPC NanoSat Lab and is the Scientific Coordinator of the CommSensLab - Unidad de Excelencia María de Maeztu of UPC. In 2004 he received one of the European Young Investigator Awards, and in 2011 he was elevated to the grade of Fellow of the IEEE. He is the 2017 President of the IEEE Geoscience and Remote Sensing Society.

Research interests

His research interests are focused in microwave remote sensing, with special emphasis in microwave radiometry by aperture synthesis techniques (ESA SMOS mission and related concepts), in remote sensing using signals of opportunity (GNSS-R), and nanosatellites as test beds of new remote sensing instruments. He is the coPI of the first UPC nano-satellite 3Cat-1, a 1U CubeSat with 7 small technology demonstrators and scientific payloads, and the PI of 3Cat-2, a 6U CubeSat with the first dual-frequency dual-polarization GNSS-R payload. Both nano-satellites are scheduled for launch in H1 2016. In May 2017, ESA selected 3Cat-4 within the Fly your satellite program for a launch from the International Space Station. 3Cat-4 is a 1U CubeSat for GNSS-R and microwave radiometry technology demonstration.

Keywords

(interferometric) microwave radiometry, GNSS-R, radio frequency interference, Earth Observation, nano-satellites

ICREA MEMOIR 2016



Carrera, David

Universitat Politècnica de Catalunya (UPC)

Engineering Sciences

ICREA Academia 2015

David Carrera received the MS degree at the Technical University of Catalonia (UPC) in 2002 and his PhD from the same university in 2008. He is an associate professor at the Computer Architecture Department of the UPC. He is also the Head of the “Data-Centric Computing” group at the Barcelona Supercomputing Center (BSC). In 2015 he was granted an ERC Starting Grant for the project HiEST (‘Holistic Integration of Emerging Supercomputing Technologies’, 1.5M€, 2015-2020). In 2017 he was awarded an ERC Proof of Concept project for the project Hi-OMICS. He is the PI for several industrial projects and collaborations with IBM, Microsoft and Cisco among others. He was a summer intern in 2006 and a Visiting Scientist in 2012 at IBM Watson. He has been involved in several EU and industrial research projects. He received an IBM Faculty Award in 2010. He is an IEEE member.

Research interests

His current research work focuses on the several topics: Data Center Optimization: providing holistic optimization solutions for the optimization of Data Centers, including the use of Active Storage technologies. Big Data Frameworks: development of technologies for developing mechanisms for an automated characterization of Big Data deployments to explore how runtime performance is affected by software and hardware configuration choices. Internet of Things and Stream Processing: Explore novel architectures of the emerging IoT stream processing platforms, that provide the capabilities of data stream composition, transformation and filtering in real time. Applied Learning Methods: leverage learning Algorithms for guiding task and data placement algorithms for Data Center optimization. Data-Centric Architectures: Build hardware prototypes for accelerating data-centric workloads, leveraging NVMs, GPUs, and FGPA.

Keywords

Cloud Computing, Big Data, Performance Modeling, Workload Characterization, Active Storage

ICREA MEMOIR 2016



Cascante Serratosa, Marta

Universitat de Barcelona (UB)

Experimental Sciences & Mathematics

ICREA Academia 2010 & 2015

Marta Cascante is Full Professor at the Department of Biochemistry and Molecular Biology at University of Barcelona (UB) and leader of the Integrative Systems Biology, Metabolomics and Cancer team. She holds a degree in chemistry and a PhD in biochemistry from UB, where she was distinguished with the Outstanding Graduate and Thesis Awards. She has authored over 200 publications, two of them cited in "Stryer" biochemistry textbook. She is partner of three European translational research projects (H2020) in the field of systems medicine and metabolomics and coordinator of several Spanish funded research projects. She is member of the editorial advisory boards of Metabolomics and BMC systems Biology. She also served in the scientific committee of numerous international conferences. Marta Cascante has been distinguished with Icrea Academia Prize 2010 & 2015, the Narcís Monturiol Medal 2015 and the Antoni Caparros Prize 2016 for scientific and knowledge transfer merits.

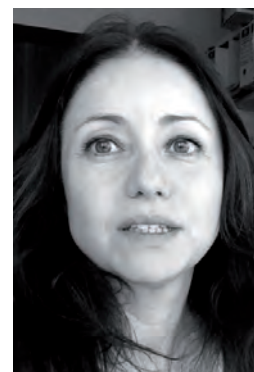
Research interests

My research focuses on cancer and metabolic diseases with the goal of elucidating the networks and pathways that are fundamental in their development and progression. More specifically, our team uses a Systems Medicine approach to identify key proteins in the metabolic reprogramming underlying multifactorial diseases, including cancer, to be used as biomarkers or drug targets. In the coming years we plan to follow a multi-omic approach to construct genome-scale metabolic networks that accurately reflect short-term and long-term metabolic adaptations associated with metastasis and acquired therapeutic resistance. We expect to identify new biomarkers and drug targets at the metabolic level to overcome drug resistance and metastasis. Furthermore, we plan to develop and deploy an e-infrastructure that makes it feasible for healthcare researchers to process analyse and mine molecular phenotyping data, to facilitate large-scale data analysis in the coming age of Precision Medicine.

Keywords

Metabolic modelling, Metabolomics, Fluxomics, Systems Biology, Systems Medicine

ICREA MEMOIR 2016



Chaqués Bonafont, Laura
Universitat de Barcelona (UB)
Social & Behavioural Sciences
ICREA Academia 2014

Laura Chaqués Bonafont is Professor of Political Science (UB) and research fellow at the IBEI. BA in Economics (UB), MA in Political Science (New School for Social Research, New York), Phd in Political Economy (UB), and visiting professor at the University of Washington, and the University of North Carolina at Chapel Hill among others. She is the author of three books, and a large number of articles published in top academic journals. She is the director of the Spanish Policy Agendas Project (www.ub.edu/spanishpolicyagendas) a research project aimed to analyze policy dynamics across time, issues, countries and levels of government. The project establishes a link between policy dynamics research and other areas of concern within political science, mainly media studies, political representation and the quality of democracy in multilevel systems of governance. It also provides new tools for the development of quantitative measurement of policy dynamics.

Research interests

My main research interests are (1) the analysis of agenda dynamics in a comparative perspective paying especial attention to the role of the media, and interest groups, and (2) the analysis of the quality of democracy in multilevel systems of governance. This means to explain to what extent Europeanization and increasing regionalism affects the capacity or/and willingness of policy makers to respond to electoral promises and citizen priorities; to analyze interest groups access to the policymaking process, and their mobilization strategies in a multilevel system of governance; and to analyze how the media affects the pattern of issue prioritization of political elites. To do that, I collaborate actively with an international network of scholars –the comparative agendas project–, aimed to provide new tools for the quantitative analysis of agenda dynamics across time, countries, policy issues and levels of governance.

Keywords

policy dynamics, media agenda setting, political representation, interest organisations

ICREA MEMOIR 2016



Codina Rovira, Ramon
Universitat Politècnica de Catalunya (UPC)
Engineering Sciences
ICREA Academia 2011 & 2016

Ramon Codina Rovira (Terrassa, 1965) is professor of Structural and Continuum Mechanics at the Universitat Politècnica de Catalunya (UPC). In 1989 he graduated in civil engineering from the same university and in mathematics from the Universitat Autònoma de Barcelona. He got his doctoral degree from the UPC in 1992. He is author of over 130 papers in first rank research journals dealing with the analysis and application of numerical methods. He is also recipient of several awards, among which the Distinció de la Generalitat de Catalunya per a la promoció de la recerca universitària (2000), the J.L. Lions Award to Young Scientists in Computational Mathematics, from the European Community on Computational Methods in Applied Sciences (2000) and the Young Investigator Award from the International Association for Computational Mechanics (2004). He has participated in several research projects, including 22 projects from different calls of the European Commission (7 of them as PI).

Research interests

The research of Ramon Codina is concerned with the development and mathematical analysis of numerical methods in engineering and applied sciences, with emphasis on finite element methods in fluid mechanics. From the analysis point of view, he has significant contributions in areas such as stabilized finite element methods, fractional step techniques or moving domain problems. In the application of numerical formulations to flow problems, he has highly cited works in the field of turbulence (with an original purely numerical approach), free boundary problems, thermally coupled flows, magneto-hydrodynamics, fluid-structure interaction problems or aero-acoustics. This research has been often motivated by research projects funded by the European Commission.

Keywords

Incompressible flows, finite element methods, stabilization, fractional step schemes, multi-physics problems.

ICREA MEMOIR 2016



Comas, David

Universitat Pompeu Fabra (UPF)

Life & Medical Sciences

ICREA Academia 2011 & 2016

He obtained his B.Sc. in Biology at the University of Barcelona where he also obtained his PhD (awarded with the “Premi Claustre de Doctors de la UB”) at the Animal Biology Department (Anthropology Unit) in 1997. He performed predoctoral and postdoctoral stays at the Zoologisches Institut (LMU, Munich), the Anthony Nolan Trust-Royal Free Hospital (London), and the Department of Forensic Medicine (University of Helsinki), studying human population genetics. He obtained a “Ramon y Cajal” position in 2001 at the Department of Experimental and Health Sciences at the UPF where he is now an associate professor. In 2007 he received the Prize for Outstanding Teaching by the Social Council of the UPF. From 2007 to 2016 he has been the director of the UPF PhD program in Biomedicine, and from 2014 to 2016 the Vicedirector of the Institute of Evolutionary Biology (IBE) in Barcelona. He has recently appointed as the Director of the Department of Experimental and Health Sciences at the UPF.

Research interests

His research is focused on the causes and consequences of the genetic diversity in human populations. He aims to understand the genomic (such as mutation, recombination) and demographic (such as migrations, admixture) evolutionary mechanisms that have modeled the human genome in order to unravel the population and epidemiological consequences of the human genetic diversity.

Keywords

Genome diversity, population genetics, human genome.

ICREA MEMOIR 2016



Congost Colomer, Rosa
Universitat de Girona (UdG)
Humanities
ICREA Academia 2013

Rosa Congost is Professor of Economic History at the University of Girona (UdG) since 1981. She has published several monographs and journal articles and edited various collective volumes based on research projects she has directed at the Centre for Research in Rural History (CRHR). Among many others, she has published *Tierras, leyes, historia. Estudios sobre 'la gran obra de la propiedad'*, (2007), *Contexts of property in Europe: The social embeddedness of property rights in land in historical perspective* (2010; ed. with Rui Santos), and *Property Rights in Land. Issues in social, economic and global history* (2017; ed. with Gelman & Santos). She was a visiting professor at the EHESS in Paris and at several universities in Latin America. Currently, she is Director of the Master's in Research in Humanities (UdG) and President of the European Rural History Organization (EURHO), which was created in 2010.

Research interests

Her current research focuses on the transformations of property rights in land and on the emergence of new social groups, particularly the new middling social groups. Her exploratory approach seeks to go beyond the institutionalist outlook on economic history, by explicitly incorporating social processes and factors in the analysis of property institutions and social groups. She heads a team investigating these topics. The majority of her work has used sources for Catalonia which has both exceptionally rich archives and a strong research tradition combining theory and evidence. She is also interested in the study of the South American societies. Currently, she is the research leader of the Group of History of Rural Societies of Generalitat de Catalunya and the principal investigator of the Research project "Neither elite nor poor. Middle classes and social change in countryside in historical perspective" of Spanish Ministry of Science and Innovation.

Keywords

History, society, rural, inequalities, property rights

ICREA MEMOIR 2016

Corominas Guiu, Montserrat
Universitat de Barcelona (UB)
Life & Medical Sciences
ICREA Academia 2015



Montserrat Corominas i Guiu graduated in Biological Sciences at the University of Barcelona (UB) in 1981. She next worked at the Department of Physiology of the UB Medical School on the role of ADP-ribosylation in differentiation of the spermatogenic germ line and received her PhD in Biology in 1986. Sponsored by a fellowship from the Spanish Ministry of Education and Science she joined the Department of Pathology at NYU Medical Center in New York in 1987 as a post-doctoral fellow to work on *ras* mutations in cancer. Later, she moved to the Division of Toxicology at MIT in Boston to study the role of *fos* and *trk* oncogenes. She returned to Barcelona in 1992 with a position as Associate Professor in the Department of Genetics at the UB. Her research of the last years has focused on the cellular and molecular mechanisms underlying development and regeneration in *Drosophila*. She teaches undergraduate and master courses and has directed 10 PhD theses.

Research interests

Successful development and regeneration processes demand a hierarchal and well- controlled balance between proliferation, differentiation and metabolic functions, which are mostly orchestrated by signaling molecules and transcriptional regulation. Although similar gene networks participate in both, development and regeneration, there are important differences in the intensity of the signals or the levels of transcription. The ultimate goal of our research group is to understand how transcription is regulated during development and regeneration using *Drosophila* larval imaginal discs, epithelia that generate adult structures, as a model system. In particular, we want to elucidate how transcription factors drive gene expression programs through interaction with genomic elements, such as enhancers, and how chromatin modifications (mainly histone modifications) contribute to gene expression changes during development and regeneration.

Keywords

Development, regeneration, transcription, chromatin,

ICREA MEMOIR 2016



Costas Salgueiro, Miquel

Universitat de Girona (UdG)

Experimental Sciences & Mathematics

ICREA Academia 2008 & 2013

Miquel Costas graduated in Chemistry at the University of Girona (UdG) in 1994, where he also pursued PhD studies in the group of Prof. A. Llobet. Research work during the PhD involved scientific stays at Texas A&M with Prof. DHR Barton (1996), and in Basel with Prof. A. Zuberbühler (1998). After his PhD dissertation, he moved to the group of Prof. L. Que, Jr, at the U. of Minnesota. In 2002 he returned to the Dept. of Chemistry of UdG with a Ramón y Cajal Fellowship. In 2006 he initiated his independent career as a group leader in QBIS-CAT (www.udg.edu/qbis). Visiting scientist at Carnegie Mellon University (2005 with Prof. E. Münck) and Debye Institute invited professor at the University of Utrecht (2014). In 2008 he received an ICREA Academia, and an ERC Starting Grant. In 2014 he received the award of the RSEQ to excellence in research. He's coauthored over 100 publications in international journals, which have received over 5800 citations. Hirsch index is 7.

Research interests

My research interests are broad and lay in the fields of coordination, bioinorganic, supramolecular chemistry and catalysis applied to chemical synthesis and energy related problems. I sought to obtain fundamental understanding of the mechanisms by which the O-O bond is broken and formed at transition metals with biological relevance, especially iron, copper and manganese. I am also interested in generating and studying highly reactive chemical species with relevance in metal mediated O₂-metabolism. This knowledge is fundamental towards the development of bioinspired oxidation catalysts to carry out selective oxidation reactions under environmentally benign conditions. In the supramolecular chemistry area, my goal is to develop nanoscopic scale molecules that could act as nanovessels, nanoreactors or functional materials, via self-assembly directed by coordination to metal ions.

Keywords

Bioinorganic Chemistry, Catalysis, Oxidation, Supramolecular Chemistry, Inorganic Chemistry

ICREA MEMOIR 2016



Da Riva, Rocío
Universitat de Barcelona (UB)
Humanities
ICREA Academia 2008 & 2014

Rocio Da Riva (Madrid 1972). I got my PhD in Assyriology at the University of Würzburg, Germany (2002). I have been conducting research in First Millennium BCE Babylonia: editing and studying cuneiform texts in different museums and tablet collections in Europe, America and the Middle East; and conducting archaeological field-work in the Middle East. I have published several monographs and articles on topics related to the political and social history of 1st millennium Babylonia. I have also edited the corpus of the Neo-Babylonian royal inscriptions, opening up a new line of investigation in the Assyriological discipline. I have conducted research in several European and North-American institutions during stays of varying lengths of time. I have also been invited to give lectures and seminars in several universities and research centres worldwide and I have participated in the main conferences of my field. I am member of scientific societies in Europe and the Near East.

Research interests

My main research activity is in the field of Assyriology, and my research interest is 1st Millennium BCE Near East. I am preparing an edition of unpublished ritual texts from the British Museum dealing with temples in first Millennium BCE Babylonia. This research is based on the collaboration established since 1999 with the Department of Oriental Studies of the University of Würzburg, my Alma Mater, and with the School of Oriental and African Studies of London. I am also the director of the archaeological expedition at the site of Sela (Jordan), in collaboration with the Directorate of Antiquities of Jordan. I am the author of several publications on topics related to historiography, Babylonian poetry and literature, etc. I am currently preparing an electronic edition of the Neo-Babylonian Royal Inscriptions. I am also interested in historiography of the Archaeology during the I World War.

Keywords

Assyriology, Archaeology, Ancient Near East, Mesopotamia, Cuneiform

ICREA MEMOIR 2016



del Valle, Manel

Universitat Autònoma de Barcelona (UAB)

Engineering Sciences

ICREA Academia 2010 & 2015

Manel del Valle (Terrassa, 1963) received a degree in Chemistry from the Universitat Autònoma de Barcelona (UAB), and completed a Ph.D. in Analytical Chemistry (1992) from the same university. Currently he is associate professor (1997) of Analytical Chemistry at UAB, and head of the Chemistry Studies. He completed postdoctoral stages in Newcastle (UK), Porto (Portugal), Graz (Austria) and Mexico. He was awarded the Young Researcher prize in Analytical Chemistry (SEQA, 1992), the prestigious Young Researcher Distinction for the Promotion of University Research (2001-2004) from the Generalitat de Catalunya, and an ICREA Academia (2010 and 2015). He is member of Editorial Board of the journals Talanta, Journal of Sensors and Bionics and Biomimetics. He has (co)supervised 20 PhD theses, and accounts for more than 200 publications and 4000 citations in ISI journals. He holds a h index of 34 (ISI), 36 (SCOPUS) or 42 (Google Scholar).

Research interests

Manel del Valle is a founding and active member of the Sensors & Biosensors Group at the Autonomous University of Barcelona, where he leads lines of research on biosensors using electrochemical impedance transduction (genosensors and aptamer based) and electronic tongues employing potentiometric, voltammetric and impedimetric sensors. The latter are the paradigm in chemical sensing, that entails the use of sensor arrays with cross-response features plus advanced computer data processing, in a bioinspired manner. Late research has clearly reached the convergence of technologies: nanotechnology, biotechnology, information science and cogno systems; this corresponds to the incorporation of nanotechnology ideas to the development of biosensor array systems or bioelectronic tongues.

Keywords

Biosensor arrays, electronic tongues, nanotechnology, genosensors, aptasensors, artificial neural networks, convergence of technologies

ICREA MEMOIR 2016

Diéguez, Montserrat
Universitat Rovira i Virgili (URV)
Experimental Sciences & Mathematics
ICREA Academia 2009 & 2015



Prof. Montserrat Diéguez studied chemistry at the Rovira i Virgili University (URV) in Tarragona (Spain), where she received her Ph.D. in 1997. After she moved to the Yale University as postdoctoral fellow with Prof. R.H. Crabtree (USA). She returned to Tarragona and becoming part of the permanent staff of the URV in 2002. In 2011 she was promoted to full Professor in Inorganic Chemistry at the URV. She has been involved in more than 40 research projects in the field of organometallic chemistry, stereoselective synthesis, asymmetric catalysis and metalloenzymes. She is author of more than 130 articles in SCI indexed Journals, book chapters and of several contributions to Conferences. She obtained the Distinction from the Generalitat de Catalunya for the promotion of University Research in 2004 and the Grant for Research Intensification from URV in 2008. She has received an ICREA Academia in 2009 and 2015 from the Catalan Institution for Research and Advanced Studies.

Research interests

My main research interests are focused on the sustainable design, synthesis and screening of highly active and selective chiral catalysts for reactions of interest in the biological, pharmaceutical and organic nanotechnological industry. Her areas of interest include organometallic chemistry, stereoselective synthesis and asymmetric catalysis using combinatorial and biotechnological approaches.

Keywords

Organometallics, Asymmetric Catalysis, Molecular, nano- and biocatalysis, combinatorial chemistry, Activation of small molecules

ICREA MEMOIR 2016



Díez Antón, Juana
Universitat Pompeu Fabra (UPF)
Life & Medical Sciences
ICREA Academia 2016

Juana Díez is an Associate Professor at the University Pompeu Fabra. After obtaining her PhD in Biology from the University Autònoma de Madrid, she made a postdoctoral stay at the Institute of Virology (Madison, USA) where she was subsequently hired as Research Associate. Since 2001 she leads the Molecular Virology group at the Department of Experimental and Health Sciences, UPF. She has received two prizes for innovation in teaching by the Social Council of the UPF. From 2017 she is the coordinator of the Human Biology Studies at the UPF.

Research interests

New and Emerging viruses such as Denguevirus, Chikungunya virus or Zika virus are a major threat to human health. Because of their simplicity, they completely depend on the infected cell to multiply. The main research interest of our group is to decipher key aspects of this intimate interaction and to identify novel broad-spectrum antiviral strategies that interfere with them. For this we combine cellular and molecular technologies with cutting-edge -omics and systems biology approaches.

Keywords

emerging viruses, virus-cell interactions, broad-spectrum antivirals

ICREA MEMOIR 2016



Domingo-Ferrer, Josep
Universitat Rovira i Virgili (URV)
Engineering Sciences
ICREA Academia 2008 & 2013

Distinguished Professor of Computer Science, URV. UNESCO Chair in Data Privacy. MSc (1988) and PhD (1991) in Computer Science, Autonomous University of Barcelona. M. Sc. in Mathematics (1995). Distinguished Scientist, ACM (2016). Fellow, Institut d'Estudis Catalans (2016); Google Faculty Research Award (2014); ICREA Academia (2008 and 2013); Narcís Monturiol Medal (2012); Elected Member, Academia Europaea (2012) and Intl. Statistical Institute (2012); Fellow, IEEE (2011). Author of 5 patents and 400 publications (H-index=48, Feb. 2017). In world's top 1% cited computer scientists (Thomson-Reuters ESI). Chairman of 17 intl. conferences and program committee member of 281 conferences on privacy and security. Co-Editor-in-Chief of "Transactions on Data Privacy" and Associate Editor of four intl. JCR journals. Invited professor, Cambridge University (2016), NUI-Maynooth (2015), Beihang University (2015) and Università di Roma 3 (2011). Visiting Fellow, Princeton University (2004).

Research interests

His research interests are in data privacy, data security and cryptographic protocols. His work revolves around conciliating security, transparency, functionality and privacy in the information society. He is a reference expert in data anonymization, which a current focus on anonymization of big data. He has created and promotes the concept of co-utility, which can be phrased as designing protocols so that mutual help is the best rational option in peer-to-peer interactions. He currently coordinates the H2020 project "CLARUS" on cloud privacy and the "CO-UTILITY" project funded by Templeton World Charity Foundation. He has coordinated the CONSOLIDER "ARES" team on security and privacy, the FP5 project "CO-ORTHOGONAL" and several Spanish funded and U.S. funded research projects.

Keywords

Data security, Data privacy, Cryptography, Official statistics

ICREA MEMOIR 2016

Duñach, Mireia

Universitat Autònoma de Barcelona (UAB)

Life & Medical Sciences

ICREA Academia 2014



Mireia Duñach is Full Professor at the Universitat Autònoma de Barcelona (UAB) since 2006. After obtaining her PhD in Biochemistry at the UAB in 1986, she moved for a first a postdoctoral stay at the Commissariat à l'Energie Atomique (Paris). Later in 1989 she did a second post-doc in a collaborative project between Boston University and Massachusetts Institute of Technology. Back in Barcelona in 1991, she started her own research group at the Department of Biochemistry and Molecular Biology of the UAB, where she has worked since then. She teaches Biophysics to Medicine and Biomedical Sciences pregraduate students. The research in her group has been focused towards the regulation of cellular contacts in epithelial cells and the involvement of adhesion proteins in gene expression. She has published more than 60 research articles in peer-reviewed international journals, and has been member of several scientific advisory committees at different institutions.

Research interests

The current research of the group is oriented towards the study of the signaling pathways triggered by extracellular Wnt factors, both canonical and non-canonical, activating signaling cascades involved in epithelial tumorigenesis. Canonical Wnt signals require the action of two proteins associated with E-cadherin at cellular contacts, β -catenin and p120-catenin. Although both, canonical and non-canonical pathways, share some common elements they differ in the final output. The group is investigating these common and divergent events and their involvement in pathological processes such as the invasion of epithelial cells.

Keywords

Cell-to-cell contacts, Wnt signaling, beta-catenin, p120-catenin, E-cadherin

ICREA MEMOIR 2016



Escera, Carles
Universitat de Barcelona (UB)
Social & Behavioural Sciences
ICREA Academia 2010 & 2015

Carles Escera graduated in Psychology at the University of Barcelona (UB) in 1987, and after his PhD in 1993, he gained postdoctoral experience at the University of Helsinki (Finland) scattered over several stays in 1993, 1994, 1996, 1999. He became Associate Professor in 1997 and since 2010 he is Full Professor of Cognitive Neuroscience. He was visiting professor at the University of Bremen (Germany) and Fellow of the Hanse Wissenschaftskolleg in Delmenhorst (Germany) in 2004 and 2005. He has published over 100 papers in major journals in Psychology and Neurosciences (over 4100 citations, $h=35$), and he coordinated recently the ERANET-NEURON project “Probing the Auditory Novelty System” (2010-2103) and the “Spanish Network in Cognitive Neuroscience” (2009-2011). Currently, he is the director of the Institute of Neurosciences of the University of Barcelona, and the principal investigator of the Brainlab-Cognitive Neuroscience Research Group.

Research interests

His research group, the Brainlab at UB is interested in understanding the mysteries of the mind by deciphering the mechanisms of brain function, including those of attention, auditory perception, musical processing, and emotion, and how these mechanisms are disrupted in disorders such as autism, dyslexia, schizophrenia or attention deficit disorder. The approach in Brainlab is based on the recording of the human electroencephalogram (EEG) to analyze event-related brain potentials and oscillatory activity. This approach is complemented with magnetoencephalography (MEG), functional magnetic resonance (fMRI) and genetic analysis. At present, the Brainlab research is driven by the idea that even deep structures within the brain, such as the auditory brainstem, play a critical role in auditory cognition, contributing to speech, music and rhythm perception.

Keywords

Psychology, cognitive neuroscience, attention, auditory perception

ICREA MEMOIR 2016

Espinal Farré, M. Teresa
Universitat Autònoma de Barcelona (UAB)
Humanities
ICREA Academia 2009 & 2015



I have a bachelor's degree in Hispanic Philology (Universitat Autònoma de Barcelona - UAB, 1978), a Master of Arts in Linguistics (University of London, 1981), and a PhD in Theoretical Linguistics (UAB, 1985). Postdoctoral research stays at the University of California at Berkeley, Stanford University, University of Utrecht, and Université Paris 7-CNRS, and visiting professor at UNICAMP. I am Professor of Linguistics at the UAB (since 1999) and a member of the Center for Theoretical Linguistics (CLT). I have published five books, and edited two special issues of journals. I am the author of a number of articles in specialized journals (*Lingua*, *Language*, *Journal of Linguistics*, *Natural Language and Linguistic Theory*, *Frontiers in Psychology*, *Language Sciences*, *Journal of Pragmatics*, *The Linguistic Review*, *Linguistics*, *International Journal of Lexicography*, *Linguisticae Investigationes*, *Probus*, *Glossa*, among others), and in edited volumes.

Research interests

My main research interest is the theory of language. The most recent research focuses on the structure and meaning of negation in natural languages (single negation, expletive negation and double negation readings at the syntax-semantics interface and at the syntax-prosody-gesture interface), rejecting responses to negative assertions and questions, reference to kinds and to other generic expressions, the structure and meaning of bare nominals in Romance, weak referentiality and event modification, expletive determiners, the structure of vocatives, and the semantics of number, among other topics. Previous research dealt with different adverbial expressions and the adjunct / disjunct asymmetry, and the syntax and semantics of idioms. While the final goal of this theoretical research is to understand the structure of language, on a more applied level I am developing experimental research on how speakers assign specific readings to linguistic expressions.

Keywords

Linguistic theory, syntax, semantics, pragmatics, experimental linguistics

ICREA MEMOIR 2016



Estévez, Raúl
Universitat de Barcelona (UB)
Life & Medical Sciences
ICREA Academia 2009 & 2014

Raúl Estévez studied Biochemistry (1994) at the University of Barcelona, where he also obtained his PhD in Biochemistry (2000, under the supervision of Dr. Manuel Palacín), finishing both studies with extraordinary honours. He also possesses an Interuniversity Master of Business and Administration from 1999. Following three years of postdoctoral research at the Center for Molecular Neurobiology under the supervision of Dr. Thomas Jenstch and four years as a Ramón y Cajal researcher, he started to work at the University of Barcelona as Professor of Physiology in the Faculty of Medicine in 2007. Dr. Estévez is member of CIBERER. His research is now focused on rare genetic diseases related to movement of chloride across membranes.

Research interests

Chloride is the most abundant anion in organisms. Plasma membrane chloride channels from the CLC and LRRC8 family are important for several physiological functions such as regulation of excitability in nerve cells and muscle, for cell volume regulation as well as for transepithelial transport. The physiological roles of several chloride channels are illustrated by human inherited diseases caused by mutations in their genes or in auxiliary subunits that regulate their functions. Thus, defects in CLC and LRRC8 proteins have been related with hyper excitability of skeletal muscle, salt loss in the kidney and deafness (Bartter's syndrome), leukodystrophy (myelin alteration) with edema in the white matter or agammaglobulinemia. Our aim is try to understand chloride channel regulation in order to provide therapeutical solutions to affected patients. We use a multidisciplinary approach by applying imaging, electrophysiology and biochemistry methods.

Keywords

Myelin, Cell volume, ion channels, membrane proteins, astrocyte

ICREA MEMOIR 2016



Feixa Pampols, Carles

Universitat de Lleida (UdL)

Social & Behavioural Sciences

ICREA Academia 2016

I am professor of social anthropology at the University of Lleida. Doctor from the University of Barcelona and Honoris Causa from the University of Manizales (Colombia), I have been visiting scholar in Rome, Mexico City, Paris, Berkeley, Buenos Aires, Santiago de Chile, Newcastle and Lima. I am author or coauthor of more than 45 books, including *De joves, bandes y tribus* (Barcelona, 1998), *Jovens na America Latina* (São Paulo, 2004), *Global Youth?* (London & New York, Routledge, 2006), *De la Generación@ a la #Generación* (Barcelona, Ned, 2014) and *Youth, Space and Time* (Boston & Leiden, Brill, 2016). I have been a consultant on youth policies for the United Nations and Vicepresident for Europe of the research committee "Sociology of Youth" of the International Sociological Association. In 2017 I obtained the ICREA Academia of the Generalitat de Catalunya and the Advanced Grant of the European Research Council.

Research interests

The ERC-AdG Project (TRANSGANG), to be done during my ICREA Academia period, will focus on experiences of intervention by youth gangs of two transnational communities (Latinos and Arabs) in cities within three geographical and cultural regions -Southern Europe, North Africa and the Americas. The novelty of the project is two-sided. Firstly, it focuses on inclusive and positive aspects of gang membership and the positivation of their marginalized position within the social structure. Secondly, it uses a transnational comparative methodology, focused on a group rarely included in gang studies -Young Arabs- along with another over-studied group -Young Latinos. The ultimate goal is to develop a renewed transnational, inter-generational, intergeneric and transmedia approach to Twenty-First-century gangs, very different from the local, coeval, male and face-to-face model used for understanding gangs in the Twentieth century.

Keywords

Youth, Social change, Gangs, Migration, Violence, Mediation

ICREA MEMOIR 2016



Fernández Pérez, Paloma
Universitat de Barcelona (UB)
Humanities
ICREA Academia 2008 & 2013

Paloma Fernández Pérez (Barcelona, 1964). She finished her degree in Geography and History at the Universitat de Barcelona in 1987. She obtained in the 1990s three grants –“la Caixa/Indiana University”, “Fulbright/MEC”, and “Mellon Dissertation Write-Up Year Fellowship- which helped her become an M.A. and a Ph.D. in History at the University of California at Berkeley in the United States. She worked as a Teaching Assistant and as a Graduate Student Instructor in Berkeley, before becoming an Assistant professor at ESADE Business School in Barcelona in 1993/1994. After three public competitive examinations held in a period of six years, between 1994-2001, she became Associate Professor at the Department of Economic History and Economic Institutions at the Faculty of Economics and Business at Universitat de Barcelona, where she is now teaching international business history, family businesses, and the relationship of families with innovation and globalization.

Research interests

International business history, family businesses and the relationship of families with innovation and globalization in developed and emerging economies in past and present times. Founder of the Network of Interdisciplinary Research of Family Firms, which includes more than one hundred scholars from all over the world (<http://www.ub.edu/histeco/p4/eng/>). Coeditor of the British research journal Business History. Founder and Coeditor in Chief of the review essays Journal of Evolutionary Studies in Business, an open access free journal (<http://revistes.ub.edu/index.php/JESB>). Currently principal researcher in a public project of the Spanish Ministry of Economy and Competitiveness on Spanish Multinationals, and in a project funded by one of the First Scholarships for Research in the Social Sciences of Foundation BBVA about Spanish Multinationals in the US and Germany.

Keywords

Business History, Economic History, Family Firms, Multinationals

ICREA MEMOIR 2016



Fernández-Teruel, Alberto
Universitat Autònoma de Barcelona (UAB)
Social & Behavioural Sciences
ICREA Academia 2013

Alberto Fernández-Teruel obtained his PhD in Psychology (1989) at the Universitat Autònoma de Barcelona (UAB). He was researcher (1987,1991) and Invited Scientist (2016) at the University of Cagliari (Italy), visiting professor at the ETH-Zentrum (Switzerland, 1990, 1994) and Associate Professor at the Univ. of Santiago de Compostela (1996-1998). He is Associate Professor at the Department of Psychiatry & Forensic Medicine (UAB, 1998), where he leads the “Animal and human models of mental disorders” group (SGR). Thanks to having great supervisors and collaborators he has published over 130 peer-reviewed scientific papers, including top journals such as Nature Genetics, Nature Reviews Neuroscience, PNAS, Genome Research, etc. Among others, he received the ‘Martí i Julià’ award (“Institut d’Estudis Catalans”, 1988), the “‘Ciutat de Barcelona’ Science Award-1992” and two SCRITC awards (1988,1990). He has coordinated research within FP6-FP7 European projects.

Research interests

The research of our group has focussed on the neurobiology and neurogenetics of anxiety/fear/stress-related processes, impulsivity, addiction, schizophrenia and brain aging. We have contributed to develop novel and unique genetic tools for the high-resolution genetic mapping of complex neurobehavioural and biological (disease-related) traits. We have identified candidate quantitative trait genes for anxiety, for multiple sclerosis, for immunological processes, and for several other biological and disease-related complex traits.

Keywords

Anxiety, stress, impulsivity, schizophrenia, neurogenetics, quantitative genetics

ICREA MEMOIR 2016



Fort, Joaquim
Universitat de Girona (UdG)
Humanities
ICREA Academia 2014

Joaquim Fort (1966) graduated in Physics in the Universitat de Barcelona (1989). Master in Cosmology in Tufts University (USA, 1991) with a Fulbright fellowship. Master in Physics (1993) and PhD in Physics (1997) in the Universitat Autònoma de Barcelona. Associate professor (since 1999) and full professor (since 2009) of Physics at the University of Girona. Author of over 100 research papers in scientific journals, including Proceedings of the Academy of Sciences of the U.S. (PNAS) and Physical Review Letters. He has directed large research projects on prehistorical simulation, funded by the European Commission and the Spanish Consolider program.

Research interests

Although initially trained as a physicist, Fort has applied his background to the Humanities during the last two decades. His main contribution has been a new mathematical theory that computes the relative importance of the diffusion of populations and the diffusion of ideas in Europe (PNAS 2012). Previously he worked on a time-delayed theory of the Neolithic transition (since 1999), palaeolithic waves of advance (2004), cohabitation models (since 2007) and age-dependent effects (2010). His present research interests include cultural evolution (since 2011) and linguistic dynamics (since 2012). These works have been featured by the American Association for the Advancement of Science, the Society for American Archaeology, the American Physical Society, the UK Institute of Physics, etc.

Keywords

Neolithic transition, cultural evolution, linguistic dynamics

ICREA MEMOIR 2016



Fradera Barceló, Josep Maria
Universitat Pompeu Fabra (UPF)
Humanities
ICREA Academia 2009 & 2015

Full Professor at the Universitat Pompeu Fabra. He graduated in the Universitat Autònoma of Barcelona in 1976 and PhD in Modern History in 1983. Researcher at the IAS (Princeton) in 1987-1988 and visiting scholar at Harvard (1997, 2000, 2012 and 2013) and NYU (2004) and Princeton (2006) and Chicago as Tinker Fellowship (2009). He has published several books as sole author and has contributed to many other edited books and journals. In the last period: *Endless Empire. Spain's Retreat, Europe's Eclipse, America's Decline*, Madison, 2012 (edited with McCoy and Jacobson) and *Slavery and Antislavery in Spain's Atlantic Empire*, NY, 2013 (edited with Schmidt-Nowara). *La nación imperial. Derechos, representación y ciudadanía en los imperios de Gran Bretaña, Francia, España y los Estados Unidos (1750-1918)*, Barcelona, Edhasa, 2 vols., 1376 pp.; *The Imperial Nation*, Princeton University Press (forthcoming).

Research interests

He works on two different research fields. One of them concerns to the Catalan and Spanish history of the Nineteenth and Twentieth-Centuries. Nonetheless, he is working and writing on the Spanish and European Empires of Modern World. He had published extensively on the political economy, politics and culture of the Spanish Empire, specifically on the Spanish Caribbean and the Philippines. He published a complete comparative history of political inequality (forms or representation; exclusion and segregation; unequal juridical régimes) in four Liberal empires (Spanish, French, British and the US) since 1750 up to 1918. In all four cases these aspects are placed in the political history of both, colonies and metropolis. Next project is considering to go back to a more precise explanation of how political responses and the expansion of social reform in the metropolitan and colonies as well settings influenced the general development of imperial policies all over the world.

Keywords

Empires, colonies, identity, institutions, labor

ICREA MEMOIR 2016



Franzese, Giancarlo
Universitat de Barcelona (UB)
Experimental Sciences & Mathematics
ICREA Academia 2016

Giancarlo Franzese (Italy 1968) leads the Statistical Physics of Complex Matter group at UB. PhD in Physics with honors (Naples 1998), Associate Researcher at Roma 3 Un., Boston Un., Naples SUN, La Sapienza Un. Rome, Ramón y Cajal at UB 2003, since 2002 Visiting Professor at Universities of Boston, Cambridge, UC-Dublin, Beijing, Porto Alegre, he is UB Tenured Professor since 2008 and Guarantor for Inst. of Nanoscience and Nanotechnology UB. He won the Young CNR Research Abroad prize 2000, the UB Incentive Program for Research 2012, the Royal Soc. of Chemistry-UK selection as Emerging investigator in soft matter 2012, the Nola prize for academic merits 2016. He ranks within the Top Scientists in Spain in Phys., Fluid & Plasmas, Math. Phys., Multidiscipl. Phys., and the Top Italian Scientists in the World, $h=33$, with 96 publications. He gave 100 Invited Talks, directed 7 Master/13 PhD theses, collected EU/ES funds for over 2millions€ and organized 18 conf. & chaired 8.

Research interests

We develop a **multi-scale approach to simulate water at nanobio interfaces under realistic conditions** (e.g., nanoparticles and protein solutions at physiological conditions over time-scales up to hours). We combine atomistic simulations of water at bio-interfaces (e.g., proteins or membranes) and nano-interfaces (e.g., nanoparticles or graphene sheets) and coarse-grain models of hydration water for protein folding and protein design. We focus on protein self-assembly and crystallization, in bulk or under confinement, and on the kinetics of proteins adsorption on nanoparticles, verifying our predictions in collaboration with several experimental groups. We try to find answers for fundamental questions (Why water is so important for life? Which properties make water unique for biological processes?) and applications (Can we design better drugs? Can we limit protein-aggregations causing Alzheimer? How to implement nanotheranostic?).

Keywords

Biological Physics. Biological Water. Bio-Nano Interactions. Protein Folding. Protein Design. Self-Assembly. Complex Liquids. Soft Matter.

ICREA MEMOIR 2016



Gallego, Ángel J.
Universitat Autònoma de Barcelona (UAB)
Humanities
ICREA Academia 2015

I obtained my PhD in Cognitive Science and Language at the Universitat Autònoma de Barcelona in 2007. I have made short-term visits to the University of Maryland, IKER / CNRS, the University of Cambridge, and the Universidad Complutense de Madrid, where I worked under the supervision of Juan Uriagereka, Ricardo Etxepare, Ian G. Roberts, and Ignacio Bosque respectively. I have been awarded different post-doctoral fellowships, including Ramón y Cajal in 2013. Currently, I am Prof. Agregat at the Dept. of Spanish Philology and the Secretary of the Centre de Lingüística Teòrica at UAB. I have published in journals like, i.a., *Natural Language and Linguistic Theory*, *Theoretical Linguistics*, and *The Linguistic Review*. Furthermore, I am the author of *Phase Theory* (John Benjamins, 2010) and have edited *Phases. Developing the Framework* (De Gruyter, 2012), *50 Years Later: Reflections on Chomsky's Aspects* (with D. Ott, MIT WPL, 2015) and *Perspectivas de sintaxis formal* (Akal, 2015).

Research interests

I am primarily interested in the areas of theoretical syntax and linguistic variation. In my work, I study syntactic phenomena and properties (locality, phrase structure, transformations, etc.) with an eye on trying to understand what they tell us about broader questions concerning the Language Faculty. I have specialized in Romance languages (particularly Iberian varieties, with special attention to Spanish and its dialectal variation). Since 2014, I am the main coordinator of the Syntactic Atlas of Spanish/Atlas Sintáctico del Español (ASinEs, www.asines.org), an on-going project devoted to the study of the syntactic variation of Spanish dialects and developed in cooperation with different centers, including the Real Academia Española. Finally, since I also consider it the responsibility of researchers to contribute to society by offering their expertise, part of my outreach activities is focused on helping improve the way in which language is taught at Secondary Education.

Keywords

Syntax, linguistic variation, geolects, Spanish, Romance languages, atlas, database

ICREA MEMOIR 2016



García-Carpintero, Manuel
Universitat de Barcelona (UB)
Humanities
ICREA Academia 2008 & 2013

Manuel García-Carpintero was born in Daimiel (Spain) in 1957. He got his “Licenciatura” (≈ BA) at the University of Barcelona (1979) and his PhD also at the University of Barcelona (1988), where he has taught since 1984, after teaching at secondary schools between 1979 and 1984. He visited the CSLI, Stanford University, for one academic year (1990-91), and for shorter periods the philosophy departments at MIT (1992), NYU (1997), Oxford (1998), Lisbon (2011, 2012, 2016) and Paris (Institute Jean Nicod, 2017). He was a fellow at the Center for the Advanced Studies in the Humanities (Edinburgh, 2001), and he has been appointed Visiting Professor at the University of Lisbon (2013-2016, 2017-2020). He was awarded a “Distinció de Recerca” for senior researchers by the Catalan Government between 2002 and 2008, and in 2008 (2009-2013) and 2013 (2014-2018) the prize “ICREA Acadèmia” for excellence in research, also funded by the Generalitat de Catalunya.

Research interests

Manuel García-Carpintero is Professor at the University of Barcelona (http://www.ub.edu/grc_logos/manuel-garcia-carpintero). He works in philosophical logic, the philosophy of language, the philosophy of mind and related epistemological and metaphysical issues, areas in which he has published extensively, including publications in the best regarded general philosophy journals such as the Journal of Philosophy, Mind, Noûs, Philosophy and Phenomenological Research. He just published a book on the philosophy of fiction with Càtedra, entitled “Relatar lo ocurrido como invención”, and he is completing two books under contract with OUP, one on the nature of speech acts in general and assertion in particular, entitled “Tell Me What You Know”, and another on the nature of the self and self-representation, entitled “Representing Oneself”.

Keywords

Reference, presupposition, assertion, semantics/pragmatics, fiction

ICREA MEMOIR 2016



García Montalvo, José
Universitat Pompeu Fabra (UPF)
Social & Behavioural Sciences
ICREA Academia 2008 & 2013

José García Montalvo is Professor of Economics at the Universitat Pompeu Fabra (UPF). He holds a bachelor's degree in economics from the Univesitat de València. He won the National Prize of Bachelor Studies in Economics (Spanish highest national GPA, 1988). He received his MA and PhD in Economics from Harvard University. He has worked as a consultant for the OECD, the European Union, the Inter American Development Bank and the World Bank. He has served as Chairman of the Economics and Business Department and Vice Chancellor of Science Policy at the UPF. He has also served as member of the Board of Directors and the Boards of Trustees of several companies and research centers. He has published 12 books and more than 100 articles in journals such as American Economic Review, Economic Journal, the Review of Economics and Statistics, Journal of Business and Economic Statistics, European Economic Review, Journal of Economic Growth, Journal of Development Economics, among others.

Research interests

Professor Garcia Montalvo's main areas of interest are development economics, applied econometrics, young labor markets and housing economics. His publications cover topics such as foreign aid, ethnic polarization and civil wars, financial markets and housing finance or the labor market of young workers. In recent years he has work intensively in research projects related with the recent financial crisis, the banking industry and the economic effects of debt. He is also working on the application of data science methods and machine learning techniques to economic research and financial services.

Keywords

Financial crisis and housing markets, young labor markets, determinants of terrorism

ICREA MEMOIR 2016



Garcia-Ojalvo, Jordi
Universitat Pompeu Fabra (UPF)
Experimental Sciences & Mathematics
ICREA Academia UPC 2009 & UPF 2014

Jordi Garcia-Ojalvo obtained his PhD in statistical physics at the University of Barcelona in 1995. He did postdoctoral work at the Georgia Institute of Technology in Atlanta in 1996, working on laser dynamics, and at the Humboldt University of Berlin in 1998 as an Alexander von Humboldt Fellow, studying noise effects in excitable media. In 2003 he was IGERT Visiting Professor at Cornell University in Ithaca, New York, at which time he began working in the field of systems biology. In 2008 he became Full Professor at the Universitat Politècnica de Catalunya, where he had been teaching applied physics since 1991. He is Visiting Research Associate in Biology at the California Institute of Technology since 2006, and joined the Universitat Pompeu Fabra in October 2012.

Research interests

We are interested in the dynamics of living systems, from unicellular organisms to human beings. We use dynamical phenomena to identify the molecular mechanisms of cellular processes, such as bacterial stress responses, spatial self-organization in bacterial biofilms, cellular decision making, and the immune response to cytokine signaling. Using a combination of theoretical modeling and experimental tools such as time-lapse fluorescence microscopy and microfluidics, we investigate dynamical phenomena including biochemical pulses and oscillations, and study how multiple instances of these processes coexist inside the cell in a coordinated way. At a larger level of organization, we use conductance-based neural models to explain the emergence of collective rhythms in cortical networks. We also work on developing a global description of brain activity by means of mesoscopic neural-mass models, which allows us to link the structural properties of brain networks with their function.

Keywords

Nonlinear Science, Systems Biology, Systems Neuroscience, Statistical Physics, Complex Systems

ICREA MEMOIR 2016



Ginebra Molins, Maria Pau
Universitat Politècnica de Catalunya (UPC)
Engineering Sciences
ICREA Academia 2008 & 2013

Maria-Pau Ginebra is Full Professor in the Department of Materials Science and Metallurgy at the Technical University of Catalonia (UPC) in Barcelona, Spain, and director of the Biomaterials Division of the Research Centre for Biomedical Engineering at UPC. She is also Associate Researcher at the Institute for Bioengineering of Catalonia (IBEC). She is author of more than 160 articles in peer-reviewed International journals as well as of 9 patents. In 2013 she founded the spin-off company Mimetis. She received an ICREA Academia in 2008 and 2013, and the Narcis Monutrió Medal in 2012, from the Generalitat de Catalunya, and the Racquel LeGeros Award in 2013, from the International Society for Ceramics in Medicine for her contribution to calcium phosphate research. She is Member of the Board of Directors of the Quality Assurance Agency for the University System in Catalonia (AQU Catalunya).

Research interests

Her research interests include the design and development of new biomaterials for bone regeneration, bone tissue engineering and drug delivery, and the fundamental study of biological mechanisms behind interactions of biomaterials and cells/tissues. Her research team has made significant contributions in the processing and characterisation of a new generation of low-temperature calcium phosphates which mimic bone extracellular matrix, including calcium phosphate cements and foams, incorporating synthetic or natural polymers, and/or biologically active molecules. She is involved also in new biofabrication strategies, including injectable scaffolds for bone tissue engineering, bioinspired substrates and 3D printing of regenerative medical implants.

Keywords

Biomaterials, Tissue Engineering, Ceramics, Bone regeneration, Materials Science

ICREA MEMOIR 2016



Ginès Gibert, Pere
Universitat de Barcelona (UB)
Life & Medical Sciences
ICREA Academia 2014

Pere Ginès is a physician scientist in the field of liver diseases. He is the current chairman of the Liver Unit of the Hospital Clínic of Barcelona and Professor of Medicine at the University of Barcelona. He obtained his degree in Medicine in the University of Barcelona School of Medicine and did his training in Digestive and Liver diseases in the Hospital Clínic. He obtained his PhD in the same University. His scientific career has taken place in the Hospital Clínic, University of Barcelona, University of Colorado, and University of Calgary. He is currently the principal investigator of the IDIBAPS group "Mechanisms of liver diseases and complications of cirrhosis".

Research interests

The main research interests of his group are the mechanisms of liver cell injury in liver diseases and how liver injury progresses from an acute to a chronic condition. In recent years, the research has been focused on the role of a number of mediators of liver cell injury, including cytokines, chemokines and miRNAs, as well as the possible participation of liver stem cells. His group is also studying gene expression and molecular mechanisms in a number of human chronic liver diseases to identify potential targets of therapy to prevent disease progression. On the clinical side, the research has been focused in biomarkers to predict clinical outcomes in cirrhosis. Other important areas of clinical research are the pathogenesis and management of the acute-on-chronic liver failure syndrome (ACLF), the potential role of the microbiome in the complications of cirrhosis, and the pathogenesis and management of acute kidney injury, particularly hepatorenal syndrome.

Keywords

Liver, Cirrhosis, Renal failure, Ascites, Fatty Liver

ICREA MEMOIR 2016



Gómez Gutiérrez, Emilia

Universitat Pompeu Fabra (UPF)

Engineering Sciences

ICREA Academia 2015

Emilia Gómez is an Associate Professor (Serra-Hünter Fellow) at the Department of Information and Communication Technologies, Universitat Pompeu Fabra, Barcelona, where she leads the Music Information Research Lab at the Music Technology Group. She graduated as a Telecommunication Engineer at Universidad de Sevilla (1999) and studied piano performance at Seville Conservatoire of Music. She then received a DEA in Acoustics, Signal Processing and Computer Science applied to Music at IRCAM, Paris (2000) and a PhD in Computer Science at the UPF (2006, awarded by EPSON foundation). She has been lecturer at the Escola Superior de Música de Catalunya and visiting researcher at the Royal Institute of Technology, Stockholm (Marie Curie Fellow), McGill University, Montreal, and Queen Mary University of London. She has co-authored more than a 100 peer-reviewed publications and software libraries, and contributed to more than 20 projects, mostly funded by the European Commission.

Research interests

Her research is motivated by her background in both engineering and music and is within the Music Information Retrieval (MIR) field. She tries to understand the way humans describe music and emulate these descriptions by computational models dealing with big music data. By integrating knowledge from signal processing, music theory, cognition and machine learning, she has developed methods to automatically describe music data (audio signals, scores and visual information) in terms of melody, tonality and rhythm; to measure similarity between pieces and automatically classify music according to style, emotion or culture. She is currently president-elect of the [International Society for Music Information Retrieval](#) and co-editor in chief of the open access journal [Transactions of ISMIR](#).

Keywords

Music information retrieval, big data, machine learning, audio signal processing

ICREA MEMOIR 2016



Gomila Lluch, Gabriel
Universitat de Barcelona (UB)
Engineering Sciences
ICREA Academia 2014

Gabriel Gomila (Ciutadella, 1970) is associate professor (Professor Agregat) at the Department of Electronics of the University of Barcelona. He obtained his PhD in Physics in 1997. From 1999 to 2001 he was post-doctoral researcher at the Université de Montpellier, at the Università di Lecce and at the Universitat Politècnica de Catalunya. In 2001 he obtained a Ramon y Cajal Fellowship at the University of Barcelona, where he got the tenure position in 2005. Since 2007 he is Group Leader at the Institut de Bioenginyeria de Catalunya. Gomila has written over 70 publications in major international scientific journals including Nature Materials, PNAS, Nano Letters or ACSNano. He has been Principal Investigator in 7 research projects and is External Evaluator of the Spanish Agencia Nacional de Evaluación y Prospectiva (ANEP), of the Austrian Research Promotion Agency (FFG) and of the European Research Council (ERC). He received the Grant for Research Intensification in 2008.

Research interests

His research interests are focused on the development of novel nanoscale electrical measuring techniques for Material Science and Biology, with an emphasis on scanning probe microscopy methods. The final objective of his research is to unravel the electrical properties of biological matter (biomolecules, biomembranes, viruses, bacterial cells, etc.) with nanoscale spatial resolution, and design, based on them, new label-free biological characterization methods and new electronic biosensors. Currently the main challenges faced include the development of an electric nanoscale tomographic system for sub-surface imaging and of a nano-electrophysiological system for electrical activity recording in small scale biological systems.

Keywords

Scanning Probe Microscopy, Dielectric Properties, Nanoscale materials, nanobiotechnology, nanomechanics

ICREA MEMOIR 2016



González, Antonio

Universitat Politècnica de Catalunya (UPC)

Engineering Sciences

ICREA Academia 2014

Antonio González (PhD 1989) joined the faculty of the Computer Architecture Department of Universitat Politècnica de Catalunya in 1986 and has been Full Professor since 2002. He was the founding director of the Intel Barcelona Research Center from 2002 to 2014. He has published over 350 papers, has given over 100 invited talks, holds 46 patents and has advised 32 PhD theses in the area of computer architecture. He has served as associate editor for five IEEE and ACM journals, and program chair and general chair for the most prestigious symposia in his area. He has a long track record of innovations through transfers of his research results to commercial products, especially microprocessors. Antonio's awards include the best student in computer engineering in Spain, the Rosina Ribalta award, the Duran Farell award, the Aritmel National Award of Informatics, the King Jaime I award, and the ICREA Academia award. He is an IEEE Fellow.

Research interests

Antonio's research has focused on computer architecture, compilers and parallel processing, with special emphasis on microarchitecture and code generation techniques for the design of power efficient and reliable computing systems. One of his main current focuses is on Cognitive Computing architectures, where the goal is to devise new "intelligent" devices that will help people in their daily routines at work, home or for entertainment. In particular, he is investigating novel architectures for computer vision and speech recognition, as well as novel microarchitectures for graphics processors. Another area of his research is the design of reliable and resilient computing systems that can efficiently deal with the increasing vulnerability and variations exhibited by transistors as their dimensions keep shrinking. Finally, he is working on the design of energy-efficient computing architectures taking into account both the characteristics of future technology and applications.

Keywords

Computer architecture, processor microarchitecture, power-efficiency, memory architecture, graphics processors

ICREA MEMOIR 2016



González Luna, Libertad
Universitat Pompeu Fabra (UPF)
Social & Behavioural Sciences
ICREA Academia 2015

Born and raised in Dos Hermanas (Sevilla), she received her BA in Economics from the University of Seville, and her PhD in Economics from Northwestern University. She has been a professor at Universitat Pompeu Fabra since 2003. She is also an affiliated professor at the Barcelona Graduate School of Economics, and a research fellow at the Institute for the Study of Labor (IZA, Germany), the Center for Research and Analysis of Migration (CreAM, UCL), and the Columbia Population Research Center. She has been a visiting professor at Boston University, Columbia University (New York), UBC (Vancouver), and CREST (Paris). Her work has been published in journals such as the American Economic Journal, the Journal of Human Resources, and the Journal of Applied Econometrics. She is currently an editor of the popular economics blog Nada Es Gratis. She has two children.

Research interests

Her research lies at the intersection of labor economics, public economics, and health economics. She usually exploits large micro-data sets, and uses applied econometrics techniques to uncover causal effects. She has studied the effects of taxes and subsidies on fertility and female labor supply, the economic impact of immigration, the effect of family law on divorce, labor supply, and savings, and recently the economic determinants of infant health.

Keywords

Labor economics, public economics, immigration, family policy, fertility, female labor supply, divorce

ICREA MEMOIR 2016



Hidalgo Hernando, Elena

Universitat Pompeu Fabra (UPF)

Life & Medical Sciences

ICREA Academia 2010 & 2015

Elena Hidalgo graduated in Pharmacy at the Universitat de Barcelona, where she obtained her PhD at the Biochemistry Department in 1991. She performed two postdoctoral stages during eight years in the labs of Bruce Dimple (Harvard School of Public Health, Boston) and Nic Jones (Imperial Cancer Research Fund, London), studying how cells respond to oxidative stress. She was recruited by Universitat Pompeu Fabra (Barcelona) in 2000, where she is now full professor. As a University member, she is both teaching and working on research as the co-director of the Oxidative Stress and Cell Cycle Group.

Research interests

Oxidative stress constitutes the basis of physio-pathological situations such as neurodegenerative diseases and aging. However, reactive oxygen species such as hydrogen peroxide also exert signaling roles: they may activate antioxidant cascades, and endogenous increases of these species may even improve the overall fitness of the cell and trigger life span. Our lab uses the eukaryotic model system *Schizosaccharomyces pombe* to study the toxicity associated to oxygen-derived species, specifically protein oxidation and aggregation, and to describe the signaling processes controlled by oxidants.

Keywords

Oxidative stress - signaling cascades - gene regulation - protein homeostasis - thiol chemistry

ICREA MEMOIR 2016



Illas Riera, Francesc
Universitat de Barcelona (UB)
Experimental Sciences & Mathematics
ICREA Academia 2009 & 2015

Francesc Illas carried out his chemistry degree studies and PhD at the Universitat de Barcelona where he became Full Professor of Physical Chemistry in 1992. He spent periods at different research centres (IBM Almaden Research Center and Los Alamos National Laboratory) and has been invited professor at Università' della Calabria (Italy) and Université Pierre et Marie Curie (Paris, France). He received the Distinguished Professor Mention for the Research Promotion awarded by the Generalitat de Catalunya in 2001, the Bruker Physical Chemistry Research Award of the Spanish Royal Society of Chemistry in 2004 and the ICREA Academia in 2009 and in 2015. In 2009, he was elected Fellow of the European Academy of Sciences. In 2012 he joined the Editorial Board of Surface Science and of Theoretical Chemistry Accounts. He published over 550 papers in international journals which received over 14000 citations (h-index = 57). At present he serves as the Director of IQTCUB and of XRQTC.

Research interests

In a broad sense, the research activities of Francesc Illas develop in the field of computational materials science where computers are used to investigate the properties of molecules, nanostructures and solids. The main goal of this scientific discipline is to make use of first principles methods based on quantum mechanics to provide information not easily accessible from experiments and, at the same time, to contribute to unbiased interpretation of observed phenomena. The research being now carried out has a strong focus on properties of materials governed by magnetic coupling, involves the study of the atomic and electronic structure and chemistry of isolated and supported nanoparticles and, encompass unraveling molecular mechanisms of heterogeneous catalysis in various technologically relevant processes. The ultimate main aim is to contribute to the design of new materials with tailored physical and chemical properties.

Keywords

Computational materials science, theory in catalysis and photocatalysis.

ICREA MEMOIR 2016



Iñiguez, Benjamí
Universitat Rovira i Virgili (URV)
Engineering Sciences
ICREA Academia 2008 & 2013

Benjamí Iñiguez was born in Palma in 1969. He obtained the PhD in Physics from the Universitat de les Illes Balears in 1996. His doctoral thesis targeted the analytical modeling of smallgeometry MOSFETs. He worked as a postdoctoral researcher at the Rensselaer Polytechnic Institute (Troy, NY), and at the Université catholique de Louvain (Louvain-la-Neuve, Belgium), where he was a Marie Curie Grant Holder during 24 months. In 2001 he joined, as a Titular Professor the Department of Electronic, Electrical and Automatic Control at the Universitat Rovira i Virgili (URV, Tarragona), where he was promoted to Full Professor in 2010. In 2004 he received the Distinction from the Generalitat de Catalunya for the Promotion of University Research, in the category of Young Researchers and in 2008 the ICREA Academia Grant. He has coordinated one FP7 EU-funded project, participated as team leader in three more frFP6 and FP7, and is currently coordinating one H2020 project.

Research interests

His research interests include the physics, parameter extraction and compact modeling of advanced and emerging semiconductor devices for circuit design and simulation. Currently he is working on the development of design-oriented compact models for AlGaN/GaN HEMTs, organic and amorphous oxide TFTs, and novel SOI and Multi-Gate MOS structures. Compact models are the type of device models use by circuit design tools. Therefore, the compact models will be instrumental to extend the applications of those emerging devices.

Keywords

Nanoelectronics, semiconductor devices, flexible electronics, device modeling, TFT

ICREA MEMOIR 2016



Llobet, Eduard
Universitat Rovira i Virgili (URV)
Engineering Sciences
ICREA Academia 2012

Eduard Llobet (Barcelona, 1967) is a full professor of Electronics. He got his PhD in Telecom Eng in 1997 from UPC and then joined the Sensor Research Lab (UWarwick, UK) for a one-year postdoc. Invited researcher at the CNRS-IMS in Bordeaux in 2006 and 2014, the Institut Pascal (Aubière) and the Burgundy Molecular Chemistry Institute (Dijon) in 2016. Director of the Research Centre EMaS (2012-2014). He is currently President of the Spanish Network on nanotechnology and microsystems and vice-president of the IEEE Spanish Sensor Chapter. He has authored some 200 papers at peer-reviewed journals (5600 citations) and 6 patents. He serves on the scientific committees of the major world conferences on sensors and has presented over 25 invited lectures. Expert evaluator for different research agencies throughout Europe, he belongs to the IEEE, ACS, ISOCS and the American Nano Society. In 2012 he received the URV's RQR Award for research and an ICREA Academia.

Research interests

He is currently addressing the fabrication of sensor arrays employing low-dimensional metal oxides and/ or functionalized carbon nanomaterials. Cost-effective and industrially scalable methods such as chemical vapour deposition or aerosol-assisted chemical vapour deposition are considered for bottom-up integration in MEMS or flexible platforms. The applications sought are (i) sensitive and selective gas microsensors for environmental monitoring, medicine or safety and (ii) heterogeneous catalysis. Advanced characterisation and modelling techniques are used to understand the materials in depth, to gain insight into gas sensing, catalytic properties and mechanisms, and finally to establish structure-performance relationships. Additionally, he is addressing smart anodization strategies for obtaining nanostructured materials aimed at producing sustainable energy.

Keywords

Gas sensor microsystems, carbon nanotubes, nanoporous alumina, signal processing

ICREA MEMOIR 2016



Llorca, Jordi

Universitat Politècnica de Catalunya (UPC)

Engineering Sciences

ICREA Academia 2009 & 2014

Born in Barcelona in 1966, Jordi Llorca earned his PhD in Chemistry at the University of Barcelona (UB), where he was later appointed Associate Professor and Ramón y Cajal Fellow. In 2005 he joined the Technical University of Catalonia (UPC) and in 2014 he became Full Professor as Serra Hùnter Fellow. He has conducted research at the Univ. New Mexico (US) and CNRS and has been Invited Scholar at the Univ. Udine, Univ. Auckland, Univ. Aberdeen and CONICET. He received the Distinction of Generalitat de Catalunya to the Promotion of the University Research in 2003, the Humbert Torres Prize in 2003 and the ICREA Academia in 2009 and in 2014. He has been Director of the Institute of Energy Technologies, Director of the Centre for Research in NanoEngineering, and currently he is Director of the Barcelona Research Center in Multiscale Science and Engineering. He has published over 260 scholarly articles and authored 10 patents.

Research interests

Prof. Jordi Llorca is working on the design and manufacture of new devices at the nanoscale for conducting chemical reactions aimed at the generation, purification and separation of hydrogen for portable fuel cells as well as other processes related to energy and environmental applications. He is interested on the development of a new generation of highly efficient catalysts based on surface science studies as well as “in situ” and “operando” spectroscopy and microscopy at the atomic level addressed to unravel the catalytic active sites. He is involved in the design and manufacture of fuel reformers and catalytic membrane reactors for practical use and in the development of novel microreaction engineering concepts. Another research line conducted by Prof. Jordi Llorca is the direct production of hydrogen from water and sunlight at room temperature, which includes the synthesis and study of novel photocatalysts with semiconductors, metal nanoparticles and photonic crystals.

Keywords

Catalysis, Hydrogen, Microreactors, Fuel Cells

ICREA MEMOIR 2016



Lopez-Rodriguez, Cristina

Universitat Pompeu Fabra (UPF)

Life & Medical Sciences

ICREA Academia 2014

Cristina López-Rodríguez is Professor at Universitat Pompeu Fabra (UPF), where she directs her research group at the Immunology Unit (<https://www.upf.edu/web/genimmune>) and also coordinates the Master in Biomedical Research. Cristina obtained her PhD in Biochemistry and Molecular Biology at Universidad Autónoma de Madrid in 1996 with the distinction of the Extraordinary Thesis award. She did her postdoctoral training at Harvard Medical School, Boston, where she got the position of Instructor in the department of Pathology (2001), and received the Leukemia and Lymphoma Society Research Special Fellow recognition. In 2004 she obtained a Ramon y Cajal and a Group Leader position at the Center for Genomic Regulation in Barcelona, and in 2006 she transferred her group to the department of Experimental and Health Sciences (DCEXS) of UPF at the Barcelona Biomedical Research Park (PRBB).

Research interests

Our group is interested in the connection between inflammation and disease. Briefly, how pro- and anti-inflammatory immune responses are balanced to benefit the organism, and how disrupting this balance contributes to conditions such as loss of pathogen control, the progression of cancer, and transplant rejection. We approach this question by focusing on the identification of mechanisms regulating gene expression and chromatin configuration that now emerge as novel points of control of the inflammatory response.

Keywords

Immune responses, innate immunity, inflammation, mouse models of disease, gene expression, chromatin regulation, NFAT5

ICREA MEMOIR 2016



Lozano, Angel
Universitat Pompeu Fabra (UPF)
Engineering Sciences
ICREA Academia 2010 & 2015

Angel Lozano received his Ph.D. from Stanford University (USA) in 1998 and was with Bell Labs (USA) between 1999 and 2008. From 2005 to 2008 he was also an Adj. Associate Professor at Columbia University (USA). Prof. Lozano is a Fellow of the IEEE. He holds 15 patents and his papers have received various awards including the Stephen O. Rice prize in 2008, the Fred W. Ellersick prize in 2016, and the IEEE Communications Society & Information Theory Society joint paper award also in 2016. He is the recipient of an ERC Advanced Grant for the period 2017-2021 and has held visiting appointments at the University of Texas at Austin (USA), Imperial College (UK), the Hebrew University of Jerusalem (Israel), the University of Minnesota (USA), Southeast University (China) the University of Edinburgh (UK), and the University of Toronto (Canada).

Research interests

Prof. Lozano's research activity is broadly centered on the field of wireless communications, spanning disciplines such as information theory, digital data transmission, signal processing, stochastic geometry and estimation. The main objective of his work is to improve the performance of wireless networks so as to increase the quantity of information that can be communicated reliably while consuming the least amount of resources (chiefly bandwidth and power) and with the least amount of complexity, which is a proxy for cost. Currently, he is looking into designs for the 5th generation of wireless networks, to be deployed after 2020.

Keywords

Wireless Communications, Wireless Networks, Information Theory, Digital Communication

ICREA MEMOIR 2016



Luque Garriga, F. Javier
Universitat de Barcelona (UB)
Experimental Sciences & Mathematics
ICREA Academia 2012

F. Javier Luque (1962) obtained his degree in Chemistry from the Universitat Aut3noma de Barcelona in 1985 and his PhD in Chemistry from the same university in 1989. His scientific career involved post-doctoral periods at the Swiss Federal Institute of Technology (1992), University of Pisa (1995) and University of Nancy (1998), where he was invited professor in 1999. In 1991 he was appointed Assistant Professor at the University of Barcelona, and Full Professor in 2003. In 2002 he was awarded the Catalan Distinction for the Promotion of University Research for Young Scientists, and the ICREA Academia award in 2012. He is recipient of the Federico Leloir award in 2015 by the Argentinian Ministry of Science. He is leading the Computational Biology and Drug Design group in the Institute of Biomedicine at the University of Barcelona. He is co-author of more than 350 scientific publications and has supervised 21 PhD theses.

Research interests

The main focus of his research is the study of biomolecular systems using the theoretical and computational methods of quantum chemistry, classical simulations and molecular modeling. Special emphasis is made on the structure-dynamics-function relationships in proteins, the molecular determinants of biomolecular association and the design of novel bioactive compounds, specifically in drug discovery. My research comprises the development of novel methodologies for the study of molecular recognition, as well as the development of bioactive molecules for therapeutical applications. Most of the research in this field has targeted the treatment of neurodegenerative diseases (Alzheimer), and more recently I have also started drug discovery studies of targets relevant in infectious diseases, such as tuberculosis, influenza and malaria.

Keywords

Molecular simulation, computational biology, physical chemistry, bioinformatics, drug design

ICREA MEMOIR 2016



Maldonado López, Rafael

Universitat Pompeu Fabra (UPF)

Life & Medical Sciences

ICREA Academia 2008 & 2015

Rafael Maldonado received his Medical Degree (1985) from the University of Cadiz (Spain), where he also obtained a PhD in Neuropsychopharmacology (1988) on the study of morphine dependence. He obtained a PhD in Molecular Pharmacology (1990) at the INSERM U266-University René Descartes Paris V (France) on the study of the endogenous opioid system. He was a postdoctoral fellow (1990-1991) at the Scripps Research Institute (La Jolla, USA), directed by Prof. George F. Koob, where he studied opioid and cocaine dependence. He returned to the laboratory of Molecular Pharmacology (INSERM U266), directed by Prof. Bernard P. Roques in Paris, and he obtained a permanent position as Scientific Researcher (CR-1) in the INSERM (1992) and lead a team devoted to the study of the cannabinoid and opioid systems. In 2000 he obtained a permanent position as Professor of Pharmacology at the University Pompeu Fabra (Barcelona), where he is director of the Laboratory of Neuropharmacology.

Research interests

Dr. Maldonado carried out research for eleven years in France and the USA and, since 2000, as Professor of Pharmacology at the University Pompeu Fabra (Barcelona, Spain), where he founded the Laboratory of Neuropharmacology, now with 38 people under his direction. His research is focused in the study of the neurochemical basis of drug dependence and related disorders, including affective, pain and eating disorders, aiming at the development of novel behavioural models. He has over 286 scientific articles in international journals (H-index 60) and has been Principal Investigator for 30 years of research grants funded by the main Spanish, European and USA agencies. He is also reviewer/member of the Editorial Board of several scientific journals, and has collaborated with public authorities and private companies in the research policy and pharmaceuticals development on novel treatments for drug abuse, metabolic disorders and pain. He is member of the French Academy of Pharmacy.

Keywords

Drug addiction, affective disorders, neuropathic pain, neuropharmacology and psychopharmacology

ICREA MEMOIR 2016



Marsal, Lluís
Universitat Rovira i Virgili (URV)
Engineering Sciences
ICREA Academia 2014

Lluís F. Marsal (Tarragona, 1968) is Full Professor at the Departament d'Enginyeria Electrònica of the Universitat Rovira i Virgili. He obtained his PhD degree in physics in 1997 from the Universitat Politècnica de Catalunya. Between 1998 and 1999, he was postdoctoral researcher at the University of Waterloo, Canada. He is a senior member of the IEEE and of the OSA. He is the chair of Spain Chapter of the IEEE Electron Devices Society (EDS) and a Distinguished Lecturer of the EDS-IEEE. In 2012, he received the URV's RQR Award for quality in research and he is a recipient of the 2014 UniSA Distinguished Researcher Award from the University of South Australia. In 2017, he was made a distinguished professor by Universitat Rovira i Virgili. He has been visiting professor at several research institutions. He has authored more than 220 publications in international refereed journals and conferences, 2 books, 5 book chapters and holds two patents.

Research interests

His current research interests mainly focus on technologies based on micro- and nanoporous silicon and nanoporous alumina for biomedical and green energy applications. The structural engineering of porous alumina and silicon and its surface and interface functionalization in the micro-nanoscale regime allow to development of ultrasensitive and selective optical biosensing platforms, novel engineered drug delivery systems and micro-nano-engineered cellular microenvironments for 3D cell cultures and tissue engineering. He is also interested in the fabrication, characterization, and modeling of organic and hybrid nanostructured materials to enhance light-matter interactions and electro-optical properties in photonic and optoelectronic devices such as photovoltaic solar cells, detectors, and sensors.

Keywords

Nanoporous, Biosensors, Nanotechnology, Nanophotonics, Energy

ICREA MEMOIR 2016



Martí Henneberg, Jordi
Universitat de Lleida (UdL)
Humanities
ICREA Academia 2012

Born in Reus in 1959, I graduated in History and Geography and did my PhD at the University of Barcelona under the supervision of Dr Horacio Capel. I obtained a research grant from the University of Lausanne (1984 – 1986) and I was a visiting scholar at the University of Cambridge (in 2006 and 2011). I am currently Professor of Human Geography at the University of Lleida where I have taught since 1990. I am currently leading several research projects, most of which are funded by the European Union, with one of particular interest focusing on the Teaching of European Integration in Secondary Schools.

Research interests

I aim to improve our knowledge and understanding of Europe from the mid-19th century until the present day from a geographical perspective. To do this, together with my team and other associated groups, I have established a georeferenced database that includes changes in regional boundaries, population density, regional GDP and transport infrastructures. This involves using different scales, ranging from the European to the very detailed level of the municipality, and working with data collected from the census series of each country.

Keywords

Geography, History, Transportation, GIS, Europe

ICREA MEMOIR 2016



Martínez Vilalta, Jordi
Universitat Autònoma de Barcelona (UAB)
Experimental Sciences & Mathematics
ICREA Academia 2014

Jordi Martínez Vilalta is Senior Lecturer (Professor Agregat) at the Autonomous University of Barcelona (UAB) and researcher at the Center for Ecological Research and Forestry Applications (CREAF). He graduated in Environmental Sciences at UAB in 1997 and obtained his PhD (2001) at the same university. He moved to the University of Edinburgh (UK) as a postdoctoral researcher and became an Honorary Research Fellow at this university in 2005. He has coauthored more than 100 publications in peer reviewed international journals and two books ('Ecología con números' (2006), a textbook; and 'Un planeta a la deriva' (2011), a popular science book). He obtained a favorable assessment from the Program I3 (Spanish Ministry of Science and Education) in 2009 and received an ICREA Academia in 2014.

Research interests

His main area of research is forest functional ecology, at the interface between biology and Earth sciences. His work combines different approaches (observational, experimental, modelling) and scales (from individual organisms to global) to study forest function and dynamics in response to drought and other environmental stress factors. In particular, his current research aims at (1) understanding fundamental aspects of the water and carbon economy of plants; and (2) producing a set of usable criteria to determine what forests are more vulnerable under different climate change scenarios and how the ecosystem services they provide to society are likely to be impacted.

Keywords

Drought, forest ecology, functional traits, global change, long-distance transport in plants

ICREA MEMOIR 2016



Martín, Ferran

Universitat Autònoma de Barcelona (UAB)

Engineering Sciences

ICREA Academia 2008 & 2013

Ferran Martín received the BS in Physics from the Universitat Autònoma de Barcelona in 1988 and the PhD in 1992. Since 2007 he is Full Professor of Electronics. He is the head of the Microwave Engineering, Metamaterials and Antennas Group at UAB, and Director of CIMITEC, a research Center ascribed to UAB and focused on Technology transfer to Industry on the basis of Metamaterials. He has authored and co-authored over 500 technical conference, letter and journal papers and he is co-author of the book on Metamaterials entitled *Metamaterials with Negative Parameters: Theory, Design and Microwave Applications* (John Wiley, 2007) and author of the book *Artificial Transmission Lines for RF and Microwave Applications* (John Wiley, 2015). Honors: 2006 Duran Farell Prize for Technological Research; Parc de Recerca UAB/Santander Technology Transfer Chair (2009); two ICREA Academia grants (calls 2008 and 2013); IEEE Fellow since 2012; IET Fellow since 2016.

Research interests

The research activity is focused on the application of metamaterials and related concepts to the optimization and miniaturization of RF/microwave components and communication systems. This research activity has impact in several fields within Information and Communication Technologies (ICT), such as broadband wireless communications, radiofrequency identification (RFID), radar systems, sensors, etc. Particular topics of interest include chipless RFID systems for security and authentication, microwave sensors for dielectric characterization and health diagnosis, automated synthesis of microwave circuits, and fundamental research on metamaterials and metasurfaces.

Keywords

Metamaterials, Microwave Engineering, Wireless Communications, Radiofrequency Identification (RFID)

ICREA MEMOIR 2016



Martorell, Jordi

Universitat Politècnica de Catalunya (UPC)

Engineering Sciences

ICREA Academia 2016

Jordi Martorell received a PhD degree in Physics from Brown University (USA) in 1990 and he performed postdoctoral studies at New York University. He became a UPC professor in 1999 and since 2005 he is also head of the organic nano-structured photovoltaics group at ICFO. Jordi Martorell has mainly focused his research into the experimental study of new photonic concepts to shape the properties of optical materials, a field where he has made several key contributions: To control spontaneous emission in photonic crystals, to demonstrate phase matched non-linear light generation in centro-symmetric materials, and more recently to achieve second harmonic light generation from an extremely low number of molecules. In 2011 Jordi Martorell took a major turn in his research activities and focused the core of his activity to study fundamental aspects of photonics applied to thin film photovoltaics.

Research interests

Current research considers light management for an optimal solar energy harvesting, storage and use. Among the different areas being covered are: semi-transparent single junction solar cells using photonic structures to achieve world record performances, the study of alternative trapping configurations by designing new cavity concepts capable to confine electromagnetic energy, as for instance, in non-harmonic but resonant cavity modes or in chaotic whispering gallery modes, the study of fundamental aspects in light-matter interaction as controlling the radiative recombination by the solar cell architecture to push the limits of photovoltaic efficiency, and the use of graphene for a direct storage of hydrogen atoms obtained from water splitting.

Keywords

photonics, organic, photovoltaic, solar, nanotechnology, nanophotonics

ICREA MEMOIR 2016



Masoller, Cristina

Universitat Politècnica de Catalunya (UPC)

Engineering Sciences

ICREA Academia 2009 & 2015

Cristina Masoller (1963, Montevideo, Uruguay) is Associated Professor in the group of Nonlinear Dynamics, Nonlinear Optics and Lasers at Universitat Politècnica de Catalunya. She received the bachelor and MSc degrees in physics from Universidad de la República, Uruguay and the PhD degree in physics (1999) from Bryn Mawr College, USA. She has more than 20 years of research and teaching experience. She has published more than 130 articles and has supervised 7 PhD thesis. In 2015 Dr. Masoller was elected Fellow of the Optical Society (OSA), the leading professional society in optics and photonics. She was recognized for contributions in the area of nonlinear dynamics of optical systems.

Research interests

Dr. Masoller's research is focused in dynamical complex systems. A main research line is in nonlinear photonics, in particular, in the dynamics of semiconductor lasers (delay-induced phenomena, extreme optical pulses, optical rogues, photonic neurons). She is also interested in big data analysis tools for the study of complex systems (symbolic analysis, complex networks). Specific interests include novel methods for the analysis of climatological data (climate networks) and complexity measures for the classification and characterization of complex images.

Keywords

Nonlinear photonics, semiconductor lasers, complex systems, nonlinear dynamics, data analysis, nonlinear time-series analysis, complex networks, extreme events

ICREA MEMOIR 2016



McNally, Louise
Universitat Pompeu Fabra (UPF)
Humanities
ICREA Academia 2008 & 2013

Louise McNally holds a B.A. in Modern Languages and Linguistics from the University of Delaware and a Ph.D. in Linguistics (1992) from the University of California, Santa Cruz. Taught at Indiana University, The Ohio State University and the University of California, San Diego before joining Universitat Pompeu Fabra in 1995. Professor of Linguistics in the Department of Translation and Language Sciences and a member of the Formal Linguistics Group (GLiF). Awarded the Distinció de la Generalitat per a la Recerca Universitària (2003). Electorate Nominating Committee member for the Linguistics Section of the American Association for the Advancement of Science (2016-2019). Associate editor of the journal 'Semantics & Pragmatics', co-editor of Springer's Studies in Linguistics and Philosophy series and Semantics Editor for the Oxford Research Encyclopedia of Linguistics. Panel member (2011) and panel chair (2013-2017) for the European Research Council.

Research interests

McNally is a specialist in semantic theory. The larger goal of her research is to understand how successful communication results from the interaction between the conventionalized contribution of words and phrases, on the one hand, and context and general inferential processes, on the other. Her current project is to bring together work from referential and conceptual approaches to meaning, traditions which have largely developed in isolation of each other, in a model that combines logically- and statistically-based meaning representations. She actively collaborates not only with other linguists but also with philosophers and researchers in computational semantics.

Keywords

Linguistics, semantics, pragmatics, computational semantics

ICREA MEMOIR 2016



Micó, José María
Universitat Pompeu Fabra (UPF)
Humanities
ICREA Academia 2013

José María Micó (Barcelona, 1961) is Full Professor at the UPF, where he taught since 1992. He obtained his B.Sc. (1984) and his Ph.D. (1988) at the UAB. He has also taught at the University of Girona (1984-1992) and as a Visiting Professor at several Italian universities. He created and directs the Master Program in Creative Writing of IDEC-UPF. His philological articles have been published in international journals like *Bulletine Hispanique*, *Criticón*, *Hispanic Review* or *Italique*. His work includes poetry, literary studies (the most recent are *Las razones del poeta* and *Clásicos vividos*), philological editions of Spanish authors and anthologies of classical poetry. He has also translated great European poets like Jordi de Sant Jordi, Ausiàs March and Ludovico Ariosto: his version of *Orlando furioso* won the National Prize for Translation in Spain and Italy.

Research interests

My interests are the multilingual classics and the rise of European literary canon, specially in three crucial periods and some key authors that need to be understood from the fact that the translation is the ultimate philology: Dante's *Comedy* and its exegetical problems, the first Catalan poets of the fifteenth century (specially Ausiàs March), and the renewal of poetic language held by some Spanish, French and Italian authors who lived between 1550 and 1650. My most recent works are the book "*Para entender a Góngora*" (Barcelona, Acanilado, 2015), and two critical antologies of Spanish Literature: one about Cervantes (Barcelona, Austral, 2016) and the other about the six greatest poets of the sixteenth and seventeenth centuries ("*El oro de los siglos*", Barcelona, Austral, 2017). Also, I participated in a collective edition and translation of the work of the catalan poet Ausiàs March (Madrid, Cátedra, 2017).

Keywords

Literature, European Classics, Translation, Philology

ICREA MEMOIR 2016



Miranda, Eva

Universitat Politècnica de Catalunya (UPC)

Experimental Sciences & Mathematics

ICREA Academia 2016

Eva Miranda (Ph.D. in Mathematics, Universitat de Barcelona, 2003) is an associate professor at Universitat Politècnica de Catalunya and member of the BGSMath. As a postdoc, she was a recipient of a Marie Curie EIF contract (Université de Toulouse) and a Juan de la Cierva contract (UAB). She has been invited visiting professor for extended periods at Université de Toulouse, MIT, Université de Paris 6 and 7 and at Observatoire de Paris. She is the director of the Laboratory of Geometry and Dynamical Systems-EPSEB. Eva Miranda has published over 35 papers including articles at Annales Scientifiques de l'École Normale Supérieure, Advances in Mathematics, Journal de Mathématiques Pures et Appliquées, Communications in Mathematical Physics and IMRN. She has supervised several Ph.D. theses and postdocs and has been plenary speaker in the top workshops in her field. In 2017 she has been awarded a Chaire d'Excellence of the Fondation Sciences Mathématiques de Paris.

Research interests

Eva Miranda's research is at the crossroads of Differential Geometry, Mathematical Physics and Dynamical Systems. Her area of expertise is Symplectic and Poisson Geometry. She works with objects appearing on the interface of Geometry and Physics such as integrable systems and group actions acquainting for symmetries of the systems. Her research deals with geometrical and dynamical aspects of the singularities arising in Symplectic and Poisson manifolds as well as with mathematical models for their quantization.

In 2009 together with Victor Guillemin (MIT) she started the study of a class of Poisson manifolds called "b-Poisson" and their generalizations. The upshot of these structures is that they model some classical problems in Celestial Mechanics such as the 3-body problem. Eva Miranda aims at contributing to long-standing problems for these classical systems by combining techniques from different sources such as Symplectic Topology, Dynamics and Poisson Geometry.

Keywords

Differential Geometry, Symplectic Geometry, Poisson Geometry, Hamiltonian Dynamics, integrable systems, moment maps, singularities, normal forms

ICREA MEMOIR 2016



Miró, Jordi
Universitat Rovira i Virgili (URV)
Social & Behavioural Sciences
ICREA Academia 2013

Jordi Miró (Reus, 1964) obtained his BSc in Psychology at the Universitat de Barcelona in 1988, and his Masters (1990) and PhD (1993) in Health Psychology at Universitat Autònoma de Barcelona. His training involved Visiting Scholar placements at the Pain Evaluation and Treatment Institute (U. of Pittsburgh, 1990; Dr. DC Turk) and the Multidisciplinary Pain Center (U. of Washington, 1992; Dr. MP Jensen); and a postdoctoral rotating residence (New York University, 1994-1995; Dr. FBW Hawkinshire). Currently, he is Full Professor of Health Psychology (since 2010) and Director of the Unit for the Study and Treatment of Pain – ALGOS (since 2003) at Universitat Rovira i Virgili (URV). He is Director of the Masters program in Health Psychology at URV. In 2012 he received the URV's RQR Award for quality in research. He is founding member of the Spanish Pain Society, and is an active member of different pain-related societies and forums.

Research interests

His broad research interest is pain and its management, but his current main area of research is pediatric pain, and specifically pediatric chronic pain. His group (ALGOS) is currently developing different Smartphone Apps to help people in pain develop better ways to cope with their health problems.

Keywords

Chronic pain, Children, Disability, Psychology of pain, m-Health

ICREA MEMOIR 2016



Moreno Bote, Rubén
Universitat Pompeu Fabra (UPF)
Humanities
ICREA Academia 2016

Dr Rubén Moreno-Bote is one of the leading scientists in population coding and neuronal dynamics approaches to brain functions. His theoretical and experimental work investigating the neural basis of decision making during ambiguous conditions.

In 2010, he obtained a Ramon y Cajal Award in Psychology to become a scientific independent leader at the Foundation Sant Joan de Deu, where in 2011 he became the head of the Theoretical and Cognitive Neuroscience group. Currently, Dr Moreno-Bote is a Serra Hunter Professor at the Center for Brain and Cognition (CBC) and the Dept. of Communication and Information Technologies in the University Pompeu Fabra in Barcelona.

The laboratory of Dr Moreno-Bote has very recently published in the two top journals of neuroscience, namely, Nature Neuroscience (2014) and Neuron (2016), in the topic of decoding large neuronal populations.

Research interests

The brain consists of 100 billion neurons that work together within intricate networks. The coordination of these neuronal networks ultimately leads to our perception of the world, reasoning and consciousness. Despite great progress, our current understanding of the brain is still very primitive. For instance, it is not well understood how information is represented in sensory cortex, and how this information is read out to form decisions, arguably the most basic brain computations.

In the Theoretical and Cognitive Neuroscience group, we study the link between neuronal activity and perception. How is sensory information represented in neuronal activity? How is this information read out by downstream neurons to form a perceptual decision or make a choice?

Keywords

cognition, visual perception, decision-making, neuroscience, neuronal networks, behavior

ICREA MEMOIR 2016



Moreno Serrano, Rosina

Universitat de Barcelona (UB)

Social & Behavioural Sciences

ICREA Academia 2014

Rosina Moreno is Professor of Applied Economics at the University of Barcelona. She was a visiting professor at the Regional Research Institute at West Virginia University, the Bruton Center for Development Studies at the University of Texas at Dallas as well as at the research center CREMOS in Sardinia. Her teaching areas are Econometrics and her current research interests focus on the main determinants of economic growth at the regional level. The results of her research have been published in both national and international journals as well as books and book chapters in prestigious publishers. She has also participated in several projects funded by the R&D National Plan continuously since 1999 and in three European projects (a H2020 project, two Framework Programmes and an ESPON), in most cases as leader of a workpackage. She has given seminars in many Spanish and foreign universities as well as several Masters and PhD courses on the topic of Spatial Econometrics.

Research interests

Rosina Moreno has developed her scientific career in the field of spatial economics and more specifically, regional economics. From an empirical perspective, she has essentially made contributions in the field of regional economic growth and development. Within this field, she has paid attention to the study of regional disparities in key economic variables (such as productivity and innovation) and the role played by public, human and technological capital, the latter being the main research line at present. She has also made contributions to the study of the inter-regional and external impact of these effects through the use of the techniques given by Spatial Econometrics. She has combined the evidence obtained through empirical exercises exploiting the information in the regional aggregate data with that obtained through microdata at the firm level.

Keywords

Regional Economics, Applied Economics, Knowledge, Externalities, Spatial Econometrics

ICREA MEMOIR 2016



Morrill, Glyn
Universitat Politècnica de Catalunya (UPC)
Humanities
ICREA Academia 2012

I received my degree, in Computer Science, from Cambridge University in 1984, and my MSc and PhD, in Cognitive Science, from the University of Edinburgh, in 1985 and 1988 respectively. It was during my subsequent two years postdoc at Edinburgh that I hit on the topic I have developed ever since: the computational integration of logical syntax and logical semantics. In 1990-91 I held a visiting scientist position at CWI Amsterdam and Utrecht University where I wrote *Type Logical Grammar: Categorical Logic of Signs* (Kluwer Academic Publishers, 1994). From 1991-92 I held a visiting scientist position at LSI, UPC, and from 1993 onwards I have lectured there, first in logic, publishing *Lògica de primer ordre* (Edicions UPC, 2001), and then in theory of computation. In Spring 2009 I took sabbatical at the Dept. of Philosophy, KCL, where I wrote *Categorical Grammar: Logical Syntax, Semantics and Processing* (OUP, 2011). In 2012 I was awarded the habilitation to be full professor.

Research interests

My research interest is in investigating the syntax, semantics and processing of natural language as a window on the mind. In particular, I work on computational integration of the paradigm of logical semantics of Richard Montague and the paradigm of logical syntax of Joachim Lambek. Under this view grammaticality of a string reduces to theorem-hood of a logical statement, and the meanings of expressions are computed from the meanings of their words by the constructive content of their proof of grammaticality. In 2010, together with my students Oriol Valentín and Mario Fadda I completed the development of a sublinear logic of discontinuity in grammar, the displacement calculus, which resolves a problem of several decades standing. Recently the formalism has become consolidated and I have turned attention to its computational implementation, in which parsing is deduction. This logical grammatical processing has deep properties which facilitate computational efficiency.

Keywords

Categorical grammar, syntax, semantics, logic, parsing

ICREA MEMOIR 2016



Munné-Bosch, Sergi
Universitat de Barcelona (UB)
Life & Medical Sciences
ICREA Academia 2008 & 2014

Sergi Munné-Bosch (ICREA Academia Prize 2008 and 2014) was born in Barcelona, Spain, 1974. He received the Biology and PhD degrees at the University of Barcelona, during 1996 and 1999, respectively. He has performed several stays abroad, including the University of Hannover and University of Kiel (Germany), University of Fukuyama (Japan), Montana State University and University of Virginia (USA). Since 2003, he is a Professor of Plant Physiology at the University of Barcelona. During 2000 and 2003, he was a recipient of the Plant Water Relations and Plant Physiology Awards, respectively, given by the Spanish Society of Plant Physiologists. He is an author of more than 170 articles in scientific journals, 16 book chapters and has edited 2 books. He is currently editor-in-chief of the journal *Environmental and Experimental Botany* (Elsevier) and is leading several research projects, including both basic and applied aspects of plant biology.

Research interests

We are mainly interested in the study of the function of tocopherols and tocotrienols (vitamin E) in plants, including studies on the role of these compounds in plant stress tolerance, leaf and flower senescence, whole-plant senescence and seed aging. We are also interested in the study of other low-molecular-weight antioxidants, including ascorbic acid (vitamin C), carotenoids, flavonoids and phenolic diterpenes. Also, we aim at better understanding plant responses to water and oxidative stresses, as well as the mechanisms underlying stress memory in plants. Furthermore, we investigate the physiological consequences of sexual dimorphism in plants, and the photoprotective and antioxidant capacity of invasive plants relative to native ones in Mediterranean-type ecosystems. Finally, we study hormonal, redox and stress signaling, with an emphasis on linking vitamin E with ethylene and jasmonate signaling.

Keywords

Antioxidants, Mediterranean plants, redox regulation, senescence, stress responses

ICREA MEMOIR 2016



Nadal Alemany, Roser
Universitat Autònoma de Barcelona (UAB)
Social & Behavioural Sciences
ICREA Academia 2014

Roser Nadal is an Associate Professor at the Department of Psychobiology at the Univ. Autònoma de Barcelona. She obtained her PhD in Psychology in 1992 at the UAB, completed postdoctoral stays in 1996-1997 at Wake Forest University (NC, USA) and got a tenure position in 1998. In 2000 she was Visiting Scholar at the University of California in San Francisco, in 2010 at the University of Colorado at Boulder and in 2013 at the British Columbia University. She has coauthored more than 70 publications. She was Vicedirector of the "Institut de Neurociències" of the UAB between 2010-16. She has been involved in a large number of outreach projects to disseminate public knowledge of Behavioral Neuroscience. She has been collaborating with several national and international funding agencies and scientific journals. She has contributed to the formation of several researchers, supervising 11 PhD theses, and without those students and other collaborators this award would not be possible.

Research interests

She has been studying in animal models: (1) the effects of acute and chronic exposure to stressors as putative animal models of post-traumatic stress disorders, and (2) the long-term effects of early stress (infantile and adolescent) on vulnerability to psychopathology (depression, anxiety, impulsivity and drug addiction) and their intergenerational transmission. The ultimate goal of her research is to understand the factors that confer resilience or vulnerability to stress and the gender-related differences in those factors. Once identified individual differences related to resilience to the negative effects of stress it will be possible to find markers that may be used to identify populations at risk or "protected populations".

Keywords

Animal behaviour, stress, individual differences, anxiety, early experiences

ICREA MEMOIR 2016



Narotzky Molleda, Susana
Universitat de Barcelona (UB)
Humanities
ICREA Academia 2010 & 2016

Professor of Social Anthropology at the University of Barcelona (UB). She studied at the UB and at the New School for Social Research in New York, and obtained a MA degree in 1984 and a PhD in 1989. She has received among others a Woodrow Wilson Foundation Fellowship and the Rockefeller Foundation Fellowship for Collaborative Research. She was a member of the Advisory Council of the Wenner-Gren Foundation for Anthropological Research (New York) and is past President of the European Association of Social Anthropology (EASA). She is presently Secretary and Officer of the American Association of Anthropology. She was a Fellow of the Amsterdam Institute for Social Science Research, University of Amsterdam (2014-2016) and has been invited as Professeur invitée Labex TransferS, Paris, and as Hallsworth Visiting Professor, at the University of Manchester (2016). She is co-editor of the European Journal of Sociology and associate editor of the American Ethnologist.

Research interests

Her most recent project "Grassroots Economics: Meaning, Project and practice in the pursuit of livelihood" [GRECO] is funded by an ERC Advanced Grant (2013-18). It addresses how ordinary people's experiences, their social and cultural constraints together with their intellectual models for understanding economic processes determine the livelihood projects they design, the practices they undertake and the effects of these on the large scale economy. A previous project "Addressing the Multiple Aspects of Sustainability: Policy Programs and Livelihood Projects", funded by the Ministerio de Economía y Competitividad (2012-15), addressed conflicts emerging around economic, social and environmental crises. As scientific coordinator of a 7FP EU project "Models and their Effects on Development paths" [MEDEA] (2009-12) she explored the impact on ordinary livelihoods of industrial restructuring resulting in two edited volumes published by Routledge.

Keywords

Economic Anthropology, Informal Economy, Gender relations, Social Reproduction, Crisis

ICREA MEMOIR 2016



Nasarre Aznar, Sergio
Universitat Rovira i Virgili (URV)
Social & Behavioural Sciences
ICREA Academia 2015

Full Professor of Civil Law and Director of the Housing Chair at the University Rovira i Virgili. Deputy Judge in the Court of Appeal of Tarragona. European Doctor in Law, holds an M.Phil. in Land Economy of the University of Cambridge. ICREA fellow since 2016. Author of four books, he has edited six more and has written over 80 scientific articles and book chapters. He has delivered over 130 invited speeches in 14 European countries. Appointed to various commissions to draft new pieces of legislation on trusts (2006), protection of mortgagors (2011), leases (2012 and 2017), housing policy (2012), intermediate tenures (2015). Called as expert to assess the Catalan Parliament and the European Commission. He has lead ten research projects on housing. Partner for the TenLaw project of the 7FP of the EU Commission on leases. Member of the core team of the EU Commission Project on Evictions and Homelessness, and of the EU Parliament project on cross-border acquisition of land.

Research interests

My main field of interest is the analysis of housing as a complex and multidisciplinary field of research, covering its whole spectrum, from the mortgage market until homelessness. Taking as central problem the access to housing, I address several factors that affect it, such as the types of tenures (full ownership, tenancies, shared ownership and temporal ownership), their funding (mortgage lending, eurohypothec, consumer protection against reckless lending and complex financial products), lenders' refinancing mechanisms (covered bonds and securitization), cross-border acquisition of land and housing loss and its consequences (evictions and homelessness). To get the full picture, I have started up the first international and interdisciplinary UNESCO Housing Chair in the world. This holistic approach to housing has facilitated my engagement in the elaboration of several pieces of legislation and my participation in and leadership of several international research projects.

Keywords

housing, mortgage, tenancies, intermediate tenures, evictions

ICREA MEMOIR 2016



Ozaita, Andrés

Universitat Pompeu Fabra (UPF)

Life & Medical Sciences

ICREA Academia 2016

Andrés Ozaita graduated in Biology at the University of the Basque Country (1992). He obtained his PhD degree in Biology (1996) at the University of the Balearic Islands in the field of Neuropharmacology. He did his postdoctoral training at the New York University School of Medicine (1997-2003) focused on the study of the molecular components of neuronal and cardiac potassium channels. In 2003, he was appointed Ramón y Cajal research fellow at the Department of Experimental and Health Sciences at University Pompeu Fabra, and in 2008 he joined the faculty of this department where he teaches undergraduate and master degree courses. He has received an American Heart Association postdoctoral award (2001), and the Dr. Antoni Esteve Foundation award in Pharmacology research (2011 and 2015).

Research interests

Our research is focused on the study of memory and motor coordination from the molecular to the functional level in healthy and diseased states. We use preclinical models of drug exposure and models of genetic neurodevelopmental disorders to investigate the mechanisms involved in brain deficits. Our studies show that an important neuromodulatory system, the endocannabinoid system, is key in controlling neuronal plasticity and proper brain functionality. In this regard, we have characterized aberrant alterations in neuronal plasticity and brain dysfunction produced both by drugs that impact directly on the endocannabinoid system, like cannabis, and by genetic neurodevelopmental disorders, like fragile X syndrome. Based on our knowledge of the endocannabinoid system we are nowadays analyzing and proposing new therapeutic strategies in order to improve memory and motor coordination that could be applied to pathological situations.

Keywords

intellectual disability, animal models, neuropharmacology, neural plasticity

ICREA MEMOIR 2016



Pagonabarraga Mora, Ignacio

Universitat de Barcelona (UB)
Experimental Sciences & Mathematics
ICREA Academia 2013

Ignacio Pagonabarraga is full professor of Condensed Matter Physics at Univ. de Barcelona (UB) since 2011, where he had been appointed associate professor in 2001. He obtained his PhD in Physics at UB (1995). He performed post-doctoral stays at Institute AMOLF (1996-98), the Univ. of Edinburgh (1999-2000), and has been visiting professor at different european universities. He has co-authored more than 140 scientific publications in major peer reviewed journals including Science, Nature Materials, PNAS and Physical Review Letters. He was awarded with the Catalan Distinction for the Promotion of University Research for Young Scientists (2004). Member of the Editorial Board of several scientific journals and has served in the scientific committee of numerous international conferences. In 2011 he obtained the Outstanding Referee award of the American Phys. Soc. He is the spanish representative in the Council of the european institution CECAM, and is member of PRACE SSC.

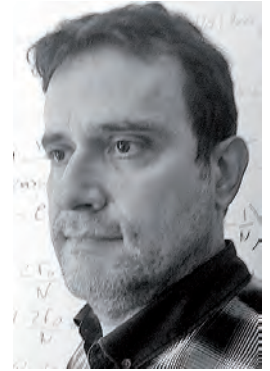
Research interests

His research interests focus on the physics of soft matter and the understanding of emerging structures and phases in these systems, both in and out of equilibrium. His research aims at the theoretical knowledge of the collective behaviour of complex physico-chemical systems. He has studied the mechanical properties of granular materials, the electrokinetics of complex and confined systems, the stability of capillary and confined fluid mixtures, and the physics of microswimmers. He has developed and exploited novel mesoscopic methods to analyze the dynamics of soft materials and has benefited from supercomputing facilities, such as MareNostrum. Currently he is also interested in the study of biologically inspired systems, such as active matter or the physics of molecular motors. He has been invited professor at Paris-Sud University (2002), Université Claude Bernard Lyon 1 (2003), University of Edinburgh (2005) and TU Berlin (2010). He has supervised 8 PhD theses.

Keywords

Soft matter, active fluids, colloidal systems, capillarity, granular materials

ICREA MEMOIR 2016



Pastor-Satorras, Romualdo
Universitat Politècnica de Catalunya (UPC)
Experimental Sciences & Mathematics
ICREA Academia 2008 & 2014

Romualdo Pastor-Satorras (Barcelona, 1967) received a PhD in Condensed Matter Physics from the Universitat de Barcelona in 1995. He spent four years as postdoctoral researcher at the MIT (1996-1998) and The Abdus Salam International Centre for Theoretical Physics, ICTP (1998-2000). He is Associate Professor of Applied Physics at the Universitat Politècnica de Catalunya since 2006. He has been visiting scientist at the University of Notre Dame (USA), Kavli Institute for Theoretical Physics (USA), Helsinki University of Technology TKK (Finland), Indiana University (USA) and the Institute for Scientific Interchange (ISI) Foundation (Italy). He holds an ICREA Academia Prize in 2009, was awarded a Distinció de la Generalitat de Catalunya per a la Promoció de la Investigació Universitària in 2003, and is a Fellow of the ISI Foundation (Italy). He is the author of more than 120 publications in peer-reviewed journals with more than 23000 citations. He has an h-index of 50.

Research interests

My research is based in the application of stochastic methods and numerical simulations to the study of complex systems. The main topics in which I work are the following: 1) Topological and temporal properties of natural systems, as represented in terms of complex networks. 2) Dynamical processes and non-equilibrium phase transitions in disordered substrates. 3) Dynamics of social systems. 4) Human activity and dynamics. 5) Non-Markovian temporal networks. 6) Collective motion.

Keywords

Statistical mechanics, complex systems, complex networks, stochastic processes, social dynamics

ICREA MEMOIR 2016



Pereda Beltran, Noemí

Universitat de Barcelona (UB)

Social & Behavioural Sciences

ICREA Academia 2016

Noemí Pereda (Barcelona, 1975) obtained her BSc in Psychology at the Universitat de Barcelona, where she also obtained her PhD (Outstanding Doctoral Dissertation Award) in 2006. She was a visiting researcher in the Crimes against Children Research Center at the University of New Hampshire, where she understood the importance of building a culture of evidence in violence research. She became an Associate Professor at the Universitat de Barcelona, where she leads the 'Grup de Recerca en Victimització Infantil i Adolescent' (GReVIA). She serves as temporary adviser for the World Health Organization's Regional Office for Europe for the study of child and adolescent victimization in Spain. She is also a member of the Catalan Ombudsman's Advisory Council for the 'Prevenició de la Tortura i altres Tractes o Penes Cruels, Inhumans o Degradants'. She provides in-service training for practitioners on violence against children sponsored by the Spanish and Catalan Governments.

Research interests

Our research interest focuses on developmental victimology, a field that studies victimization of children and youth, the consequences for mental health of violent experiences at an early age, and the resilience factors individuals develop to cope with these experiences. At present, the GReVIA research is driven by the idea that the existence of a 'v factor', or a general victimology factor, in the structure of interpersonal victimization can be empirically demonstrated. This work has an enormous impact on the design of public policies for reducing the risk of victimization in children, and to raise public awareness about the situations of violence suffered by one of the most victimized groups in society. Our main goal is to foster an evidence-based approach that is able to produce valid and reliable results and help practitioners and public agencies to prevent violence against children.

Keywords

victimology, victim, children, trauma, violence, ptsd

ICREA MEMOIR 2016



Pérez Castrillo, David
Universitat Autònoma de Barcelona (UAB)
Social & Behavioural Sciences
ICREA Academia 2008 & 2014

David Pérez-Castrillo earned a PhD in economics from the Ecole des Hautes Etudes en Science Sociales, Paris, in 1991. He had previously graduated in Mathematics from the University of the Bask Country in Bilbao. He is currently Professor at Universitat Autònoma de Barcelona and Barcelona GSE. He is also MOVE, CODE and CESifo Research Affiliate. He is a member of the editorial board of the Journal of Economics and Management Strategy, Economics Letters, Journal of Public Economic Theory, and the Encyclopedia of Complexity and Systems Science. He has been awarded the Distinció per a la Promoció de la Recerca Universitària for Young Researchers, ICREA Academia chairs, the Prize Haralambos Simeonidis, and the Arrow Price of the BE Journal. His research on game theory and applied microeconomics has been published, among others, in American Economic Review, Journal of Economic Theory, International Economic Review, Games and Economic Behavior, and Management Science.

Research interests

David Pérez-Castrillo's research interests include Economics of Innovation, theoretical and applied Game Theory, and Contract Theory. He is particularly interested in research that lies in the intersection between fields. For example, he uses matching market models to analyze the collaboration between academic researchers and firms, or the optimal incentive contracts in general equilibrium environments. More recently, he also builds new datasets to study from both empirical and theoretical points of view the research process and the dynamics of start-ups.

Keywords

Economics of Innovation, Mechanism Design, Contract Theory, Game Theory, Industrial Economics

ICREA MEMOIR 2016



Pérez-Jurado, Luis Alberto

Universitat Pompeu Fabra (UPF)

Life & Medical Sciences

ICREA Academia 2012

Luis A. Pérez-Jurado is Full Professor of Genetics at the Pompeu Fabra University (UPF) where he is leading the Genetics Unit and directs the Masters Program in Genetic Counseling. He is also Coordinator of Training at the Network Center for Biomedical Research on Rare diseases (CIBERER) and group leader in the Neurosciences Program of the Hospital del Mar research Institute (IMIM). He graduated in Medicine and got a PhD in Human Genetics at the Universidad Autónoma de Madrid. He holds specialties in Family Practice (Granada), Pediatrics (Madrid), and Clinical and Molecular Genetics (Vanderbilt and Stanford Universities, USA). He has then been staff physician and investigator in Genetics at the Hospitals Niño Jesús and La Paz (Madrid), before moving to Barcelona where he also had appointments with the Hospitals Vall d'Hebron and del Mar. He is also co-founder of the spin-off company qGenomics, involved in the development of genomic tools for diagnosis of human diseases.

Research interests

His lab has been mainly involved in the study of the molecular basis of several neurodevelopmental disorders, integrating clinical and molecular research with animal models in order to bridge genes with cognition and provide diagnostic tools and therapeutic strategies. He also studies genomic structural variation with a long-term goal to better understand the mechanisms and evolution of genome plasticity, both at the somatic and germ cell levels, and the implication of structural variants in human disease susceptibility and phenotypic differences. He is coordinator of several initiatives to implement personalized medicine and medical genomics into the clinical practice for rare diseases.

Keywords

Medical genetics, genomics, neurodevelopmental disorders, autism spectrum disorders, Williams-Beuren syndrome

ICREA MEMOIR 2016



Perez Torres, Juan
Universitat Politècnica de Catalunya (UPC)
Experimental Sciences & Mathematics
ICREA Academia 2014

Juan P. Torres is professor at the Universitat Politècnica de Catalunya since 1994, when he joined the Department of Signal Theory and Communications. He made his PhD thesis under the supervision of Prof. Lluís Torner on optical nonlinear waves and solitons. At the beginning of the 2000s, he moved towards the realm of Quantum Optics and Quantum Information, at the same time that began collaborating with ICFO-Institute of Photonic Sciences as UPC professor. His research deals with quantum concepts, such as entanglement, and what they mean when describing how Nature works. During all these years he has taught different courses in his university, or invited by other universities, about Quantum Theory, Optics, Electromagnetic Theory and Telecommunications. Seven PhD students have graduated under his supervision, and he keeps collaborations with many research groups all around the world, which have helped him to write more than 150 papers in scientific journals.

Research interests

Quantum theory describes Nature as its most fundamental level. In science, it is continuously checked in its ability to make accurate predictions and the consistency and meaning of its postulates. My research combines theoretical and experimental work for distilling the meaning behind quantum concepts, such as entanglement, exploring what the concepts mean and represent in experiments. Light is the main tool of our research, that encompass a fuzzy area between nonlinear and quantum optics. Nonlinear optics provides most of the experimental tools that we use in the lab, and Quantum theory provides the framework to describe the results. We generate, tailor and detect streams of photons, under different conditions, what can be generally called as quantum engineering. Our research is a mix of fundamental physics and photonic engineering, where we answer fundamental questions about Nature, and devote efforts to looking for new or simply better solutions to important problems.

Keywords

Experimental Quantum Optics, Nonlinear Optics

ICREA MEMOIR 2016



Piqué Huerta, Raquel
Universitat Autònoma de Barcelona (UAB)
Humanities
ICREA Academia 2016

Raquel Piqué i Huerta obtained her PhD in History at the Universitat Autònoma de Barcelona (1997) where she started working as associated professor in 1993. She was a visiting researcher at both, the Swiss Federal Institute for Forest, Snow and Landscape Research (2002), University of California- Berkeley (2004), University of Gothenburg (2013). Since 2005 she is tenured assistant professor at the Department of Prehistory of the Universitat Autònoma de Barcelona where she leads the laboratory of Archaeobotany. Her research concerns on prehistoric forest resources management and landscape transformation among hunter-gatherer and firsts farming societies. She has been the main researcher of eleven projects funded by national research programs and she has collaborated on more than twenty-five other international and national programs. Her main research has been performed in the Northeast of Spain and Tierra del Fuego (Argentina).

Research interests

Her main research interest are the first farming societies in NE of the Iberian Peninsula; focusing on the understanding of the social organization and the use of resources among these societies. This research is concentrated at the early Neolithic site of La Draga, Girona (5300-4900 cal BC), one of the oldest in Europe. The recent approach of the research involves the use of computer modelling and virtual reality in order to improve the knowledge on Neolithic technologies.

She uses archaeobotany as a tool to learn about landscapes and the acquisition and consumption of plants among different societies during the recent prehistory. Finally, she is interested in ethnoarchaeology as an experimental approach which allow the generation of working hypotheses to study the archaeological record. The research has been focused on the characterization of social organization and resource management, with special attention to the plant resources.

Keywords

Prehistory, Archaeobotany, Ethnoarchaeology,

ICREA MEMOIR 2016



Planas, Núria
Universitat Autònoma de Barcelona (UAB)
Social & Behavioural Sciences
ICREA Academia 2013

Born in Barcelona (1972), I obtained my degree in Mathematics from Universitat de Barcelona (1995) and completed my PhD at Universitat Autònoma de Barcelona (2001). I am Associate Professor at the Department of Mathematics and Science Education of this University (since 2005) and Extraordinary Professor at the Department of Mathematics Education at the University of South Africa (since 2013, renewed in 2017). Together with tasks of PI of research projects, I serve as member of the scientific boards of several institutions. Including council grants of Catalonia, Spain, US and South Africa, I am active in the international community through participation and leadership in committees (e.g., Language and Mathematics -ERME), survey teams (e.g., ALM-2016), editorial boards (e.g., MERJ), and keynotes (e.g., Trondheim-2017). I am the founder and coordinator of the Group of Educational Practice and Mathematical Activity -SGR2014. I have supervised 8 PhD theses and 6 tenure grants.

Research interests

I explore student mathematics learning in multilingual classrooms in neighbourhoods of relative poverty in Barcelona and Pretoria. To the end of changing deficit-based perspectives, I draw on methods within critical discourse analysis for theoretical elaboration, philosophical discussion and empirical analysis. My threefold conceptualization of language systems, languages capitals and mathematics learning opportunities as discursive co-constructions has moved mathematics education research forward in the understanding of the multilingual complexity of all processes of mathematics learning. As well, I am engaged with development projects that attempt to put my research at the service of teachers and students in the school for responsibly describing, and communicating with practice. The ultimate goal is strengthening the pipeline within the school and between the worlds of practice and research, but also finding ways to build dialogue with those wielding political power.

Keywords

Mathematics Education, Language Diversity, Classroom Interaction, Social Theories of Learning, Discourse

ICREA MEMOIR 2016

Poblet Rius, Josep Maria
Universitat Rovira i Virgili (URV)
Experimental Sciences & Mathematics
ICREA Academia 2015



Josep M. Poblet graduated in Chemistry in 1979 from the University of Barcelona. From the same university he obtained his PhD degree in 1983 on theoretical studies of kinetic isotopes effects in organic reactions under the supervision of Professor Enric Canadell. After a postdoctoral stay with Professor Marc Bénard at the Louis Pasteur University in Strasbourg he became Associate Professor in Physical Chemistry at the Rovira i Virgili University (URV) in 1986. Since 2001 he is Professor of Physical Chemistry at this university and Director of the Physical and Inorganic Chemistry Department since 2011. JMP did a research stay in the Emory University in 2004 and he is coauthor of more than 200 scientific publications including papers in Nature, Nature Chemistry, Nature Communications, Angew. Chem., JACS, etc. He was awarded with the 2012 Bruker Physical Chemistry Prize of the Spanish Royal Society of Chemistry and was named Distinguished Professor of the URV in 2014.

Research interests

My current research is theoretical inorganic chemistry with particular interest in the electronic structure, reactivity and self assembly of complex systems. I have large experience in the computational modeling of molecular metal oxides (or polyoxometalates) that are a vast family of transition metal oxides with applications in many fields, such as materials science, homogeneous and heterogeneous catalysis, spintronics, medicine, and analytical chemistry among many others. We are also interested in the study of formation mechanisms at high temperatures of fullerenes and metallofullerenes and in general in the structural, physical and chemical properties of carbon nanoforms.

Keywords

Computational chemistry, Nanoscience, polyoxometalates, carbon nanoforms, catalysis, clean energy

ICREA MEMOIR 2016



Pomarol, Alex
Universitat Autònoma de Barcelona (UAB)
Experimental Sciences & Mathematics
ICREA Academia 2009 & 2014

Alex Pomarol (Barcelona, 1964) received his Ph.D. in Theoretical Particle Physics from the Autonomous University of Barcelona (UAB) in 1991. He has been postdoctoral researcher at the University of California, Santa Cruz (1991-1993), University of Pennsylvania (1993-1994) and CERN, Geneva (1994-1996, 1998-2000). He is currently Professor of Physics at the UAB. He has also been Scientific Associate at CERN (Geneva) in 2006 and 2015, member of the Scientific Committee of the Galileo Galilei Institute for Theoretical Physics (Florence) 2008-2015, and at present is a member of the Particle Data Group (PDG). He has received the Distinció de la Generalitat award (2001) for young researchers and an ICREA Academia (2009 & 2014).

Research interests

His research aims to comprehend the fundamental laws of the elementary particles. After the discovery of the Higgs particle at the Large Hadron Collider (LHC) at CERN (Geneva), his main interest has been trying to unravel the nature of the Higgs from the recent experimental data, and infer implications for the next LHC run, that just started fully exploring, for the first time, the TeV territory. He is interested in understanding what lies at TeV energies, as this can elucidate on many open questions in particle physics, such as the origin of particle masses and flavor mixings or the constituents of dark matter in our universe.

Keywords

Elementary Particle Physics, Quantum Field Theory, Theoretical Physics

ICREA MEMOIR 2016



Pons, Xavier

Universitat Autònoma de Barcelona (UAB)

Social & Behavioural Sciences

ICREA Academia 2010 & 2015

Xavier Pons received his BS in Biology in 1988, MS degrees in Botany and Geography in 1990 and 1995, and a PhD in Remote Sensing (RS) and Geographic Information Systems (GIS) in 1992 (UAB). His main work has been done in radiometric and geometric corrections of satellite imagery, cartography of land cover and ecological parameters from remote sensors and GIS development, both in terms of data structure, organization and international standards for geoservices, and in terms of software writing ([MiraMon](#)). He has also worked in forest fire hazards, implications of image data compression on RS and in analysis of landscape changes, water usage, snow coverage and droughts from long time series of satellite images. Dr. Pons is Full Professor at the Geography Department of the UAB and leads the research group GRUMETS, devoted to Geographical Information Science and composed by 20 people from the UAB, CREA and EBD-CSIC.

Research interests

1. Climate models based on geographical analysis and high resolution and global RS/GIS databases (Big Data), and their application to detect spatial patterns of drought at different time scales. 2. Robust methodologies for comprehensive RS processing (geometric, radiometric, classification), with particular emphasis on global data to improve knowledge of land cover dynamics. 3. To contribute to standards for geoservices in the context of GMES/Copernicus, GEOSS, etc. 4. To properly address the spatialization of the quality in geographic information.

Keywords

GIS, Remote Sensing, Climatology, Geography, Environmental Sciences

ICREA MEMOIR 2016



Pontón, Gonzalo

Universitat Autònoma de Barcelona (UAB)

Humanities

ICREA Academia 2014

Born in Barcelona, Dr. Pontón is Associate Professor of Literary Theory and Comparative Literature at the Universitat Autònoma de Barcelona and co-director of Prolope research group. He has published books on XVth century Castile letter-writing and historiography, as well as scholarly editions of Cervantes's "Quijote", Lope de Vega's plays, and Spanish short novels of XVIth and XVIIth centuries. Co-author of the most recent History of Spanish Literature, he has contributed to it with two volumes on literary and aesthetic ideas on XVIth and XVIIth centuries, and on XVIth century theater. He has also written scientific articles on literary history and textual criticism. Visiting professor and Visiting Scholar at Duke University, Venezia-Ca'Foscari, Paris IV-La Sorbonne, University of California Berkeley, and several Spanish universities. He is also a publisher of non-fiction and academic books.

Research interests

The current field of research is the analysis of the circumstances of production of literary texts in early modern Europe: the materiality of their transmission, the conditions and paths of their making and consumption, and the intellectual framework that made them possible and available. The most extensive research is devoted to the Spanish theatrical heritage of the XVIth century, especially in two lines: the origins of this spectacle, the first commercial one of the modern period, always in a comparative perspective (with Italian, English and French national theatres on the scope), and the study and edition of Lope de Vega's early plays. Other related areas of current interest are rethoric, history of literary ideas and concepts, cultural studies of the early modern era, and textual criticism.

Keywords

Early modern era, Spanish and European drama, Comparative literature, Textual criticism

ICREA MEMOIR 2016



Posas, Francesc
Universitat Pompeu Fabra (UPF)
Life & Medical Sciences
ICREA Academia 2008 & 2013

Francesc Posas is Full Professor at the Universitat Pompeu Fabra (UPF). After obtaining his doctorate in Biochemistry and Molecular Biology at the Universitat Autònoma de Barcelona (1995), he made his postdoctoral stay at Harvard University (Boston, USA). From 1999 leads the Cell Signaling Research Group. From 2007 to 2013 was Chair of the Department of Experimental and Health Sciences, from 2013 Vice-rector for Science Policy, from 2016 Vice-rector for Science Policy and Faculty Affairs and recently named Commissioner for the UPF's scientific strategy. He received the award to Young Investigators from the Catalan Government (2001), EMBO Young Investigator Program (2000), EURYI to young investigators from the EU (ESF) (2004), EMBO member (2006), granted with an ICREA Academia (2009 and 2013) and the "Carmen and Severo Ochoa" for Research in Molecular Biology (2011). He is recipient, together with Dr. Ricard Solé (UPF), of an ERC Advanced Grant (2012).

Research interests

The main focus of the group is to understand how cells detect and respond to environmental changes. We have focused our studies on the characterization of the osmo-stress signal transduction pathways, especially those controlled by MAP kinases of the Hog1/p38 family. Using *S. cerevisiae* budding yeast, as a model organism, as well as higher eukaryotic cells, we study the molecular mechanisms required to respond to changes in the extracellular environment and also which are the adaptive responses required for cell survival. We also analyze the basic signaling properties of the HOG pathway and how to alter it, based on quantitative data collection, mathematical modeling and mutational analyses. In addition, we have demonstrated that cellular communication using complex engineered networks can be implemented to perform *in vivo* cellular computation. We explore the limits of such computation as well as the implementation of computation to relevant industrial and health problems.

Keywords

Cellular stress, Gene expression, Cell Cycle, SAPKs, Signal transduction

ICREA MEMOIR 2016



Pujades Corbi, Cristina
Universitat Pompeu Fabra (UPF)
Life & Medical Sciences
ICREA Academia 2015

I am an Associate Professor at the Universitat Pompeu Fabra. After getting my PhD in Biology from the Universitat de Barcelona in 1991, I went for a postdoctoral stay to the Dana Farber Cancer Institute at Harvard Medical School (Boston) where I worked in cell adhesion receptors. Looking for a more holistic view of science, in late 1995 I moved to the École Normale Supérieure in Paris to study the embryonic development of the Central Nervous System (CNS). I spent several years in Paris, first as a postdoctoral fellow in the ENS (1995-99), and then with an independent position at the Université Pierre et Marie Curie (1999-2010). In 2002, I joined the Department of Experimental and Health Sciences at the Universitat Pompeu Fabra, where I have been Academic Secretary (2007-10) and Vice-Chair (2010-13). Since 2015, I am the Rector's Delegate for Research. My group works in questions related to embryonic tissue segmentation and cell fate acquisition in the CNS.

Research interests

A central problem in developmental neurobiology is to understand how multiple cell types are generated and maintained in highly organized spatial patterns. The Central Nervous System is initially subdivided into regions with distinct identity that underlies the generation of a specific set of cell types, each of which must arise at the right time and place and in the correct proportions for normal development and function. We focus our studies on the embryonic development of the hindbrain, as a model to study how cellular compartments operate during brain development, and how the neurogenic capacity is allocated. Our interest is to unveil when and how brain progenitors commit to a given fate and how they behave once committed. Therefore we tackle this studying how and when cell fate is established and how the different cell lineages are generated within the brain. We combine high-resolution imaging with genetics, using the zebrafish embryo as a model system.

Keywords

Developmental neurobiology, segmentation, compartments, cell lineage, morphogenesis, neurogenesis, cell specification, life 3D-imaging

ICREA MEMOIR 2016



Radeva, Petia I.
Universitat de Barcelona (UB)
Engineering Sciences
ICREA Academia 2014

Petia Radeva completed her undergraduate study on Applied Mathematics at the University of Sofia, Bulgaria, in 1989. In 1996, she received a PhD degree in Computer Vision at UAB. In 2007, she moved as Tenured Associate professor at the Universitat de Barcelona (UB), Department of Mathematics and Informatics, where from 2009 to 2013 she was Director of Computer Science Undergraduate Studies. Petia Radeva is Head of the Consolidated Group Computer Vision at the University of Barcelona (CVUB) at UB and Head of the Medical Imaging Laboratory of Computer Vision Center (www.cvc.uab.es). She is a coauthor of 24 international patents in the field of Computer Vision applied to Medical Imaging. Associate editor of International Journal of Visual Communication and Image Representation. She was a vice-chair of REA-FET-OPEN-2-2015 and REA-FET-OPEN-1-2016. She obtained an ICREA Academia in 2014 and the Prize “Antonio Caparrós” for the best technology transfer project of 2013.

Research interests

Petia Radeva’s research interests are on Development of learning-based approaches (specially, deep learning) for computer vision, and their application to health. Currently, she is involved on projects that study the application of wearable cameras and life-logging, to extract visual diary of individuals to be used for memory reinforcement of patients with mental diseases (e.g. Mild cognitive impairment). Moreover, she is exploring how to extract semantically meaningful events that characterise lifestyle and healthy habits of people from egocentric data. Other projects she is involved are: Machine learning tools for large scale object recognition, Food analysis by Computer Vision, Evaluation of intestinal motility by wireless endoscopy, Tissue characterisation and plaque analysis in carotid images, Automatic stent detection in IVUS, etc. She has h-index of 33 (Google Academic), with 1138 citations publishing 95 JCR articles and 232 international scientific publications.

Keywords

Computer Vision, Machine Learning, Medical Imaging, Health applications

ICREA MEMOIR 2016



Ribas, Xavi
Universitat de Girona (UdG)
Experimental Sciences & Mathematics
ICREA Academia 2010 & 2015

Dr. Xavi Ribas (born in 1974, Santa Coloma de Farners) obtained his B.Sc. Chemistry degree in 1996 at the University of Girona (UdG), and his PhD in Chemistry in 2001 at UdG. His academic career continued with a postdoctoral position at Institute of Material Science of Barcelona (ICMAB-CSIC) in the period 2002-2004. Afterwards, he obtained a "Juan de la Cierva" position and promoted to Associate professor in Chemistry at UdG by the end of 2006. He got different grants to be highlighted, such as a Juan de la Cierva postdoctoral award (2005), ICREA Academia (2010 and 2015) and an ERC- Starting Grant project (2011). He has conducted several scientific missions at international research institutions, such as University of Basel (in 1999), Stanford University (in 2000-2001), Instituto Tecnológico e Nuclear Lisboa (in 2002 and 2004), Zurich - ETH (in 2005 and 2006). He has been the co-director of 9 PhD thesis, and currently is co-directing 6 PhD students and 4 postdocs.

Research interests

Research focused on in-depth mechanistic understanding of the organometallic chemistry of coinage metals, and specially the fundamental M(I)/M(III) redox processes for copper, silver and gold. He is also interested in the mechanistic aspects behind first-row transition metal-catalyzed reactions for organic transformations, i.e. C-C and C-heteroatom cross-coupling reactions, C-H activation with directing groups, etc. Other research interests fall in the field of high oxidation states of other transition metals, and their involvement in organic transformations (i.e., C-H functionalization, alkane and alkene oxidations). The development of nanocages for catalysis and host-guest reactions is also pursued. The research group of Dr. Ribas was established in 2006. He has published more than 100 papers (h index 33), 4 book chapters and is the editor of the book entitled "C-H and C-X functionalization. Transition metal mediation", published by RSC-Publishing in 2013.

Keywords

Cu-based cross-couplings, Bioinorganic and organometallic chemistry of Cu(III), Coinage metal-mediated transformations, Transition Metal Mediated C-H functionalization, Bioinspired Fe and Mn oxidation Catalysts, Supramolecular nanovessels and nanoreactor

ICREA MEMOIR 2016



Ritort, Felix
Universitat de Barcelona (UB)
Experimental Sciences & Mathematics
ICREA Academia 2008 & 2013

In 1997 Dr. Ritort was appointed Associate Prof. of Physics at the Universitat de Barcelona (UB) becoming Full Professor in 2007 in the area of Condensed Matter Physics. He is PI of the Small Biosystems Lab developing research and teaching at the Department of Fundamental Physics. Since 2014 he serves as chairman of the Division of Life Sciences in Physics of the European Physical Society. He started his research in the area of spin glasses under the direction of Prof. G. Parisi at the Univ. of Rome in Italy in the nineties. Since 1995 until 2005 he worked as postdoc and visiting professor in Madrid, Amsterdam and Berkeley. In 2005 he created the Small Biosystems Lab at UB with the goal to investigate nonequilibrium fluctuations in molecular systems using single molecule experiments in biophysics. His group is recognized worldwide as leader in applying the finest methods to extract accurate quantitative information about thermodynamics and kinetics of molecular interactions.

Research interests

Dr. Ritort's scientific research is highly multidisciplinary at the frontiers of physics, chemistry and biology. He has focused his efforts in the area of statistical physics particularly in the study of disordered systems and non-equilibrium dynamics. Over the past years he has invested a lot of effort in setting an experimental lab to develop groundbreaking research in the field of molecular biophysics as a way to explore the fundamental principles underlying the fascinating complexity of biological matter where energy and information are inextricably linked. The traditional view in biophysics is that physics can be useful to understand biology. He also sustains the contrary and believes that biology can be extremely useful to physics. Technological progress going hand by hand with the development of creative biological assays may one day clarify the energy-information dilemma opening new routes in scientific thinking unveiling to us the physical principle sustaining life.

Keywords

Statistical physics, Molecular biophysics

ICREA MEMOIR 2016



Ruiz Sabín, Eliseo
Universitat de Barcelona (UB)
Experimental Sciences & Mathematics
ICREA Academia 2013

Born in Neuilly-Sur-Seine (France, 1965), obtained his degree in Chemistry (1988) and Physics (1991) at the Universitat de Barcelona and his PhD in Chemistry in the Inorganic Chemistry Department of the same university in 1993 under the supervision of Prof. Santiago Alvarez. His scientific career involved postdoctoral stays at the Université de Montréal (1993), University of Cambridge (1996), Université Pierre et Marie Curie (1998) and Université Louis Pasteur (2001). After some tenured positions, in 2001 he became Associate Professor at the University of Barcelona and Full Professor in 2011. In 2003 he was awarded with the Catalan Distinction for the Promotion of University Research for Young Scientists. He belongs to the Institut de Química Teòrica i Computacional of the Universitat de Barcelona and the Xarxa de Referència en Química Teòrica i Computacional. He published over 210 peer reviewed scientific papers and an h-index of 53.

Research interests

Theoretical methods to study the magnetic properties of inorganic molecular systems, during the last years especially the magnetic anisotropy in single-molecule magnets. He has contributions in Molecular Electronics (and Spintronics) focusing on room temperature magnetoresistance in magnetic single-molecule devices. He is also working in the synthesis and characterization of new supramolecular and molecular systems with appealing photochemical and magnetic properties.

Keywords

Molecular magnetism, theoretical chemistry, molecular spintronics, density functional theory

ICREA MEMOIR 2016

Sabaté Curull, Flocel

Universitat de Lleida (UdL)

Humanities

ICREA Academia 2015



He is Professor of Medieval History at the University of Lleida, Doctor Honoris Causa of the Universidad Nacional de Cuyo, and he has been visiting professor in universities such as Paris-I, Poitiers, ENS-Lyon, UNAM, Yale, Cambridge, Tokyo. He is member of different research centre boards in Spain, France, UK, USA, Portugal and Brazil, academies of History in Spain, France, Greece and USA, and 61 boards of scientific journals and series. He has held charges in agencies in Spain and Romania and directed the Institute for Research into Identities and Society. As a leader of the higher rated research group in Medieval History in Catalonia he has organized more than one hundred scientific meetings, and led different international research projects. He has published more than 400 research works: *El territori de la Catalunya medieval*, *La feudalización de la sociedad Catalana*, *Fin del Mundo y Nuevo Mundo* or *Percepció i identificació dels catalans*.

Research interests

He studies the processes of social cohesion and governance focusing on the Late Middle Ages and its legacy: the creation of social identity, the construction and maintenance of a memory and the function of ideology. There are studied the values with which the members of the society articulated their conviviality better, according to such aspects as the socio-economic context, territory, religion, view of otherness and political articulation, paying attention to the representativeness and discourses of power. Three lines are combined: a) the items that gave cohesion to medieval society, attending the reasons for the minorities' exclusion as well as the creation of an European model of society that passed down to following centuries; b) the analyses of the territory reflecting a social space; c) the medieval legacy in cultural, religious and social practices on the Mediterranean space.

Keywords

Medieval history, Power, Institutions, Territory, Society

ICREA MEMOIR 2016



Sales-Pardo, Marta
Universitat Rovira i Virgili (URV)
Experimental Sciences & Mathematics
ICREA Academia 2012

Marta Sales-Pardo (Barcelona, 1976) graduated in Physics at Universitat de Barcelona in 1998, and obtained a PhD in Physics from Universitat de Barcelona in 2002. She then moved to Northwestern University, where she first worked as a postdoctoral fellow and, later, as a Fulbright Scholar. In 2008, she became a Research Assistant Professor at the Northwestern University Clinical and Translational Science Institute with joint appointments in the Department of Chemical and Biological Engineering and the Northwestern Institute on Complex Systems. In 2009, she accepted her current position as an Associate Professor in the Departament d'Enginyeria Química at Universitat Rovira i Virgili. In 2012 she received an ICREA Academia for the excellence in her research.

Research interests

I am interested in developing quantitative methods to model and understand real data about complex systems. In particular, I approach the problem of summarizing large quantities of data into usable knowledge by using a complex networks approach drawing upon techniques from statistical mechanics, statistics and Bayesian inference. I am also interested in applying our methods to specific complex systems including biological and social systems with the aim of developing predictive models for the future behavior of these systems.

Keywords

Complex systems, complex networks, systems biology, metabolism, science of science

ICREA MEMOIR 2016

Sánchez, Àlvar

Universitat Autònoma de Barcelona (UAB)

Experimental Sciences & Mathematics

ICREA Academia 2013



Àlvar Sánchez (Castellar del Vallès, 1965) graduated (1987) and obtained his PhD in Physics (1992) at the Universitat Autònoma de Barcelona (UAB). He did postgraduate and postdoctoral research stays at KTH in Stockholm in Sweden, and at Stanford University, NIST (Boulder) and Iowa State University in the USA. He is at present Professor of Applied Physics at UAB. He has directed 6 PhD thesis and is author of more than 140 articles in physics journals and several invited review articles. Member of the Editorial Board of the journal Scientific Reports. He was granted with Endesa-Novare prize for Energy Efficiency in 2007, for the project Supercable led by Xavier Obradors (ICMAB-CSIC). He has also been awarded in 2012 with La Vanguardia Prize for Scientific Breakthrough (second position) and obtained a special mention in the Premi Ciutat de Barcelona, for a work on magnetic invisibility published in Science in 2012.

Research interests

His research focus is on superconductivity, nanomagnetism, metamaterials, quantum physics, and, particularly, on the boundaries among these fields. Although his work is mainly theoretical, involving analytical derivations and numerical simulations, he has a special interest to strongly interact with experimental groups, and also to convert the ideas in theoretical physics into practical applications. Some recent results of his group include the demonstration of magnetic invisibility or the application of superconductors to enhance the properties of future quantum computers.

Keywords

Superconductivity, metamaterials, nanomagnetism, invisibility, quantum technology

ICREA MEMOIR 2016



Sebastián Gallés, Núria
Universitat Pompeu Fabra (UPF)
Social & Behavioural Sciences
ICREA Academia 2008 & 2013

Núria Sebastián received her PhD in Experimental Psychology from the University of Barcelona in 1986. After Post-doctoral training at the Max Plank Institute and the CNRS in Paris, she was appointed Associate Professor of the Faculty of Psychology, University of Barcelona, in 1988, and then was promoted to Full Professor in 2002. In 2009, she moved to the Universitat Pompeu Fabra (UPF). She was a Visiting Scholar at several research centers including the IRCS at the University of Pennsylvania, the ICN at University College (London) and the University of Chicago. She was coordinator of the Consolider-Ingenio 2010 research consortium (BRAINGLOT). She is PI of a European Research Council (ERC) Advanced grant (UNDER CONTROL). From Jan. 2014 Dec. 2016 she was Vice-President of the ERC. She leads the SAP Research Group (Speech Acquisition and Processing) at UPF's Center for Brain and Cognition. She has authored over 90 publications in international journals.

Research interests

Her research focuses on the study of learning and language processing with a special emphasis on bilingual populations. Research in her laboratory extends from infants to adults with methodologies that are based on behavioural as well as physiological and brain imaging responses.

Keywords

Psychology, cognitive neuroscience, bilingualism

ICREA MEMOIR 2016

Seco-Granados, Gonzalo
Universitat Autònoma de Barcelona (UAB)
Engineering Sciences
ICREA Academia 2013



Gonzalo Seco-Granados received the PhD degree in Telecommunications Engineering from Univ. Politècnica de Catalunya in 2000 and an MBA from IESE in 2002. From 2002 to 2005, he was member of the technical staff of the European Space Agency, in The Netherlands. Since 2006, he is Assoc. Prof. at the Dept of Telecommunications, Univ. Autònoma de Barcelona. He has been Coordinator of Telecom. Engineering (2007-11) and vicedirector of the School of Engineering (2011-). He coordinates the SPCOMNAV (Signal Processing for Communications and Navigation) group. Gonzalo has authored over 220 papers and has been PI of over 25 research projects. In 2009, he was granted one of the six UAB-Santander Chairs of Technology and Knowledge Transfer. He holds the accreditation of Advanced Research (corresponding to the level of full professor) from the University Quality Agency AQU. In 2015, he was a Fulbright Visiting Scholar at University of California, Irvine.

Research interests

The focus of his present research is on joint localization and data transmission systems (also referred to as Joint Communication and Positioning systems), specifically on the design of signals and receiving techniques (mainly synchronization and channel estimation methods) to improve the truthfulness of the localization and the integration between both satellite-based and terrestrial communication and positioning solutions. He is also interested in techniques to enhance the robustness and provide signal-level integrity in GNSS receivers operating in difficult environments. The use of several antennas in GNSS receivers is one his long-standing lines of activity. He is currently investigating on the design of positioning solutions exploiting millimeter wave and massive MIMO technologies, in particular in vehicular networks, where both accurate and secure positioning is needed. The designs aim at contributing to the definition of the future 5G wireless systems.

Keywords

Statistical signal processing, navigation/positioning systems, estimation theory, wireless communications, data series analysis, GNSS, 5G systems

ICREA MEMOIR 2016



Serra, Xavier
Universitat Pompeu Fabra (UPF)
Engineering Sciences
ICREA Academia 2008 & 2013

Xavier Serra (Barcelona, 1959) is Associate Professor of the Department of Information and Communication Technologies and Director of the Music Technology Group at the Universitat Pompeu Fabra in Barcelona. After a multidisciplinary academic education he obtained a PhD in Computer Music from Stanford University in 1989 with a dissertation on the spectral processing of musical sounds that is considered a key reference in the field. Dr. Serra is active in promoting initiatives in the field of Sound and Music Computing at the local and international levels, being involved in the editorial board of a number of journals and conferences and giving lectures on current and future challenges of the field. In 2011 he was awarded an Advanced Grant of the European Research Council and since then he has been leading an international and interdisciplinary research team that works on music information research from a multicultural perspective.

Research interests

His research interests cover the computational analysis, description, and synthesis of sound and music signals, with a balance between basic and applied research and approaches from both scientific/technological and humanistic/artistic disciplines. His current research emphasizes the cultural and community aspects by working on information processing techniques that aim at modeling sounds and music together with the user community that is around them. This data-driven research involves developing and combining signal-processing, machine-learning and semantic technologies methodologies, evaluating them in the context of sound and music search and discovery applications.

Keywords

sound and music computing, audio signal processing, music information retrieval, computational musicology

ICREA MEMOIR 2016



Solà, Miquel
Universitat de Girona (UdG)
Experimental Sciences & Mathematics
ICREA Academia 2009 & 2014

Miquel Solà (1964) obtained his PhD at the UAB in 1991 with academic honours. His doctoral research under the supervision of Profs. Bertran and Lledós was awarded with the Saint Albert Prize. After several months in a consultant private company, in 1993 he moved to the University of Girona (UdG) as assistant researcher. In 1994 he did postdoctoral research in Amsterdam with Prof. Baerends and in 1995 in Calgary with Prof. Ziegler. He was appointed assistant professor of the UdG in 1997. In 2001, he got the Distinction for the Promotion of University Research (young scientist category). Since 2003, he holds a permanent position as full professor in the UdG. He received ICREA Academia Awards in 2009 and 2014. In 2013 he got the Physical Chemistry prize awarded by the Spanish Royal Society of Chemistry. He is coauthor of about 330 scientific papers and he has supervised 15 doctoral Theses. He serves in the Editorial Board of *Front. Chem.*, *Theor. Chem. Acc.*, and *Sci. Rep.*

Research interests

He works in the field of theoretical and computational chemistry. In the last years, his research interests have been mainly focused on four research lines: i) the study of molecular aromaticity, and particularly the development of new indicators of aromaticity and the examination of new forms of aromaticity such as three-dimensional aromaticity, excited state aromaticity, metalloaromaticity, and multiple aromaticity; ii) the analysis of the nature of the chemical bond using energy decomposition analysis and different electron delocalization measures like multicenter electron delocalization indices or the electron localization function; iii) the investigation of organic and organometallic reaction mechanisms with special emphasis on the reactivity of fullerenes and endohedral metallofullerenes, and iv) the critical assessment of reactivity principles derived in the framework of the conceptual density functional theory.

Keywords

Chemistry, theoretical, computational, reaction mechanism, electronic structure

ICREA MEMOIR 2016



Soriano García, Eduardo
Universitat de Barcelona (UB)
Life & Medical Sciences
ICREA Academia 2014

Eduardo Soriano (ES) received his PhD in Developmental Neurobiology from the University of Barcelona in 1986 (Supervisor, Alfonso Fairén). After post-doctoral training at the Universities of Lausanne, Frankfurt and Freiburg (Profs. Hendrik van der Loos and Michael Frotscher), he was appointed Associate Professor at the Institute of Cell Biology (University of Barcelona) in 1989, where he was promoted to Full Professor in 1995. He has been a Visiting Professor at the University of Fribourg (Michael Frotscher), the INSERM U-106 (Constantino Sotelo, Paris), and Bristol-Myers Squibb Pharma (Mariano Barbacid, Princeton-USA). He has been honored with national awards, including the “Rey Jaime I Research Award” (2000) and The “Francisco Cobos Biomedical Research Award” (2001). He has been Chairman of the National Biomedicine Granting Program (ANEP) 2008-2010, member and Vice-Chair (2009) of the LS5 Panel (2009, 2011, 2015 and 2017) at the ERC and Elected Member of the RACAB.

Research interests

The main goal of the laboratory is to understand how key developmental genes play a fundamental role in neuronal plasticity in the adult brain, which is crucial for complex neural functions (eg., learning and memory). The rationale is that adult plasticity (adult neurogenesis and synaptic plasticity) is reminiscent of developmental processes. Because dysregulation of adult neurogenesis and synaptic plasticity are implicated in neurological, neurodegenerative and psychiatric disorders, we aim also to understand how these genes contribute to the pathology of these diseases and whether modelling developmental genes in the adult brain ameliorate these neural disorders. Reelin is an extracellular protein that is critical for neural migration and synaptogenesis. To unravel the function of this developmental gene in the adult forebrain, we have generated conditional transgenic mice that overexpress Reelin and conditional (floxed) reelin KO mice.

Keywords

Neurosciences, Cell Biology, Neurological Diseases, Development, Plasticity

ICREA MEMOIR 2016



Surrallés, Jordi

Universitat Autònoma de Barcelona (UAB)

Life & Medical Sciences

ICREA Academia 2008 & 2013

With a PhD in Genetics and postdoctoral experience in The Netherlands (Leiden University Medical Center) and Finland (Finnish Institute of Occupational Health), he set up his research team at the UAB where he is currently Full Professor of Genetics. In Jan 2017, he took the position as Director of the Genetics Service at Sant Pau Hospital. He is Director of the Biobank of DNA Repair Syndromes, Head of the Chromosome Fragility Laboratory Service and team leader at the Center for Biomedical Network Research on Rare Diseases (CIBERER). Dr. Surrallés has supervised over 25 research grants from public and private institutions world-wide and participated in clinical trials, several patents and contracts with private foundations and biotech-pharma companies. He has given tens of invited lectures in international meetings. He has published over 100 articles and book chapters and supervised 25 PhD and Masters students.

Research interests

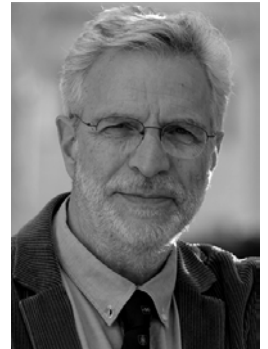
His research interests are cancer-prone rare genetic syndromes with defective DNA repair with special focus in Fanconi anemia. He also investigates the genetics of familiar cancer syndromes and performs therapeutic research including gene and cell therapy approaches and cell-based drug screening platforms. A long term goal is to understand the mechanisms that maintain genome stability and protect us from disease, cancer, and ageing.

Keywords

Fanconi anemia, bone marrow failure, DNA repair, Genome Instability, Rare Diseases

ICREA MEMOIR 2016

Thomàs, Joan Maria
Universitat Rovira i Virgili (URV)
Humanities
ICREA Academia 2013



Joan Maria Thomàs (Palma, 1953) BA (UB) and PhD (UAB) in Contemporary History. Visiting Researcher at Georgetown and Wisconsin-Madison. Visiting Professor at LSE and universities of China, India, Israel, Australia and New Zealand. Awarded with the Narcís Monturiol Science & Technology Medal 2015, the City of Barcelona History Award 1992, and the "Serra d'Or" Critics Award 1993. Credited as a full professor. Currently Principal Researcher of the project entitled "United States, Japan, Germany and Great Britain during the Second World War and the First Postwar (1945-1953): New Perspectives" (HAR2012-30848). Author of ten research books as a sole author, seventeen as a co-author, and articles. Conducts his research through ISOCAC. He is also member, among others, of the Editorial Board of "Journal of Contemporary History", "SEGLE XX. Revista Catalana d'Història" and "Comillas International Journal".

Research interests

US policy towards Spain during the Second World War and the First Postwar. Francoist regime single party, and political history of Francoism. Pro-Japanese Government of China, Chiang Kai Shek's China, Nazi Germany, Spain and Portugal and the struggle for war strategic materials during World War II.

Keywords

Fascism, Francoism, Francoist Single-party, US-Spain Relations, Spanish Civil War, Second World War, Strategic materials

ICREA MEMOIR 2016



Torcal, Mariano
Universitat Pompeu Fabra (UPF)
Social & Behavioural Sciences
ICREA Academia 2014

Full Professor in Political Science at the Dept. of Political and Social Sci. since 2003 and co-director of the Research and Expertise Centre for Survey Methodology (RECSM) at the Pompeu Fabra University in Barcelona. Previously, he was the Spanish national coordinator of the ESS for twelve years and is currently the Vice President of WAPOR Latin America. He has published articles on topics such as political disaffection in new democracies, political trust, satisfaction with democracy, electoral behavior, and political participation in and serves on the editorial boards of various international journals. He is the co-author of *Political Disaffection in Contemporary Democracies* (Routledge 2006) and *The Europeanization of National Politics? Citizenship and Support in a Post-Enlargement Union* (Oxford University Press 2012) and has recently published another three books in the CIS.

Research interests

His research is focussed on several vital and interrelated questions related with multilevel governance and citizens' critical attitudes towards representative democratic institutions. Particularly relevant to his work is understanding the linkages between Europeans' discontent with democratic institutions and the multilevel nature and scope of governance in European polities, and how the current economic crisis and the related social crisis have altered citizens' perceptions of the functioning of their representative democracies. Relatedly, his work seeks to shed light on how citizens' critical attitudes affect their general support for and understanding of democracy, and their effects on electoral behaviour in EU and national elections. Recently he has also obtained a research grant to study the effect of online participation on political attitudes, party preferences and political polarization.

Keywords

Public Opinion, Eleccions, Party Systems, Survey Methodology, Political Behavior

ICREA MEMOIR 2016



Torres, Antonio
Universitat de Barcelona (UB)
Life & Medical Sciences
ICREA Academia 2013

Born in Barcelona in 1954, he is Full Professor in Medicine (Pulmonology) at the University of Barcelona (UB) and Director of the Respiratory Intensive Care Unit at Hospital Clínic. He is considered a physician of reference both nationally and internationally in lung infections, chronic obstructive pulmonary disease (COPD), bronchiectasis, mechanical ventilation and acute respiratory distress syndrome (ARDS). He leads the research group on Applied Research in Respiratory Diseases of the Institut d'Investigacions Biomèdiques August Pi i Sunyer (IDIBAPS), from where he facilitates translational research studies. He also coordinates a CIBER group and a CIBER programme on respiratory infections (Ciberes), an SGR group and participates in several European projects. He is co-author of more than 400 scientific publications and has supervised 32 PhD theses. He has a Hirsch index of 94.

Research interests

1. Respiratory infections: He has created several subgroups of research that study the epidemiology, diagnosis, treatment and prevention of these infections. In his laboratory is doing basic research in biofilm and PK/PD of antibiotics. In 2015 he published a randomised-clinical trial in JAMA about the benefit of using corticosteroids in addition to antibiotics in severe community-acquired pneumonia. 2. A second field of research is mechanical ventilation including invasive and non-invasive, weaning and prevention of complications. In this field he has organized important RCT's that have changed the clinical practice. 3. He has organized a unique animal model of severe pneumonia (*P.aeruginosa*, MRSA and *S.pneumoniae*) in piglets ventilated for more than 72 hours that allows to perform translational research in respiratory infections, mechanical ventilation and ARDS 4. He is the coordinator of Hospital/Ventilator associated pneumonia International Guidelines

Keywords

lung infections, community acquired pneumonia, ventilator associated pneumonia, chronic obstructive pulmonary disease and bronchiectasis

ICREA MEMOIR 2016



Vega, María José
Universitat Autònoma de Barcelona (UAB)
Humanities
ICREA Academia 2008 & 2014

M. J. Vega is Professor of Literary Theory and Comparative Literature at the Universidad Autónoma de Barcelona and founder and director of the Seminario de Poética del Renacimiento. She has worked mainly on poetics and comparative literature in Early Modern Europe (XVI-XVIIc). Her approach is intended to be interdisciplinary, drawing on a range of subjects related to literary studies, such as cultural history, theology and politics. She has received the Excellence of Research Award of the Generalitat de Catalunya (Distinció, as Junior Researcher), the ICREA Acadèmia Research Grant (first call), the Mercator Gastprofessur of the Deutsche Forschungsgemeinschaft, and the Alexander von Humboldt Research Award. In the last five years, she has been guest professor at several higher research centres in France, Portugal, Belgium and Germany and has developed international research projects at the UAB and at the University of Münster (RFA).

Research interests

In the last years, M. J. Vega has opened a line of research devoted to the theory of censorship and to the analysis of the ideological principles that governed the control and surveillance of books during the Counter-Reformation. Her project for 2015-2019 proposes to study the formation and development of the expurgatory policy of the Spanish monarchy (Spain, Portugal, South Italy and the Low Countries) in the 16th and 17th centuries; to analyse its ideological principles and intellectual impact; and to carry out comparative case studies that will achieve a new perspective of its relevance for European cultural history.

Keywords

Comparative literature, literary theory, renaissance studies, censorship, early modern literature

ICREA MEMOIR 2016



Velasco Esteban, Luis
Universitat Politècnica de Catalunya (UPC)
Engineering Sciences
ICREA Academia 2015

He received the M.Sc. degree in Physics from Universidad Complutense de Madrid (UCM) in 1993, the MBA from UPM in 2001, and the PhD degree with honors from Universitat Politècnica de Catalunya (UPC) in 2009. In 1989 he joined Telefonica of Spain and was involved on the specifications and first office application of Telefonica's SDH transport network. In 2004 he joined UPC, where currently he is an associate professor at the Department of Computers Architecture (DAC). He has co-authored more than 150 papers in peer-reviewed International Journals and Conferences and co-authored two books. He is serving as an Associate Editor of the IEEE/OSA Journal of Optical Communications and Networking (JOCN) and in the TPC of several international conferences as well as reviewer of international journals. He has participated in various IST FP-6, FP-7, and H2020 European research projects such as NOBEL 2, e-Photon/ONE+, DICONET, BONE, STRONGEST, IDEALIST, GÉANT, and METRO-HAUL.

Research interests

My research has been focused on multilayer optical networks, specifically on Network planning and re-optimization. However, the development of new innovative services need also a cloud and core networks orchestration to cope with the increasing complexity of networks technologies and services; we call this as the Telecom Cloud. Here, we deal with large problems that need to be solved before a network is deployed or updated on-line while the network is in operation (to be deployed in Software Defined Networking (SDN) controllers). Furthermore, the exploitation of big data storage and analysis solutions is of paramount importance since they facilitate the exploitation of SDN programmability and flexibility while supporting self-configuration of network topology to variable workload demands during lifetime. As a result, I'm also doing research on big data analytics, including distributed architectures where algorithms run inside nodes, to bring cognition to the Telecom Cloud.

Keywords

Cognitive Optical networks

ICREA MEMOIR 2016



Ventura Zamora, Salvador
Universitat Autònoma de Barcelona (UAB)
Life & Medical Sciences
ICREA Academia 2009 & 2015

Salvador Ventura is Chair Professor at the Dep. of Biochemistry and Molecular Biology, Director of the Institute of Biotechnology and Biomedicine and leader of the Protein Folding and Conformational Diseases group at the Autonomous University of Barcelona (UAB). He has authored more than 170 research and review papers, apart from several books and patents; pronounced around 100 invited conferences in national and international meetings and supervised over 40 research grants from public and private institutions. He got his Ph. D. in Biology at the UAB in 1998 and was a postdoctoral fellow at EMBL-Heidelberg. He has been researcher at Harvard Medical School (USA) and Karolinska Institutet (Sweden), among other international centres. He re-joined UAB as a “Ramon y Cajal” researcher in 2003. Dr. Ventura has received the UAB Excellence Research Award (2008) and the ICREA Academia (2009 & 2015).

Research interests

The long-term goal of our research is to contribute to decipher the mechanisms of protein homeostasis in the cell. We use a multidisciplinary approach to address fundamental aspects of protein folding, misfolding and aggregation. In addition to define the basic mechanistic principles underlying these processes, we aim to understand how their deregulation leads to the onset of a series of human conformational disorders, which include neurodegenerative diseases, but also diabetes or cancer. This knowledge should ultimately pave the way for the development of novel therapeutic strategies to target these devastating pathologies.

Keywords

Protein folding, Protein Aggregation, Amyloid, Protein Design, Conformational Disorders, Prions

ICREA MEMOIR 2016



Villarroya, Francesc
Universitat de Barcelona (UB)
Life & Medical Sciences
ICREA Academia 2014

Villarroya is full professor of Biochemistry and Molecular Biology and current scientific director of the Institute of Biomedicine of the University of Barcelona. He obtained his PhD at the University of Barcelona and after post-doc research in CNRS (Paris) and New York University Medical Center, he established a research group on energy metabolism and adiposity. His findings have been published in close to two hundred articles, some of them in major journals such as Cell, Cell Metabolism, Nature Comm, NEJM and Diabetes. Research is supported by local and international agencies, charities and in collaboration with pharmaceutical and biotech companies. He is member of the steering committees of CIBERobn (Spanish institute for obesity research) and SEEDO (Spanish Society for Studies on Obesity), and editorial board member of the journals Endocrinology and Endocrine. He has acted as member of national and international (France, Portugal, Sweden) agencies of research evaluation.

Research interests

Research interest has been to identify the major molecular actors controlling energy metabolism and adiposity, and their relationship with diseases such as diabetes, obesity and lipodystrophy. The role of mitochondrial function as well as the regulation of the differentiation of distinct white and brown adipose cells has been a major focus. Francesc Villarroya and his team identified major mechanisms of transcriptional control of the genes encoding UCP1, the key mediator of protection against obesity via brown fat thermogenesis and energy expenditure, and other uncoupling proteins. More recently, fibroblast growth factor-21 was identified as a novel actor in the control of brown fat activity and its consequences in the control of systemic metabolism, with powerful potential for complex metabolic diseases.

Keywords

Metabolism, endocrinology, adipose, mitochondria, transcription

ICREA MEMOIR 2016



Villaverde, Antonio
Universitat Autònoma de Barcelona (UAB)
Life & Medical Sciences
ICREA Academia 2008 & 2013

Dr. A. Villaverde is Chair Professor of Microbiology at the Department of Genetics and Microbiology and leader of the Nanobiotechnology group at the Institute for Biotechnology and Biomedicine, Autonomous University of Barcelona. He coordinates a research team of 18 people, which is also member of the Networking Biomedical Research Center in Bioengineering, Biomaterials and Nanomedicine (CIBER-BBN). A. Villaverde has authored more than 240 peer-reviewed research and review papers on microbiology-biotechnology-nanosciences, apart from other many publications, books, book chapters and patents. A. Villaverde founded and was Editor-in-Chief of the Open-Access journal Microbial Cell Factories, published by BioMed Central, from 2002 to 2016 (ISSN: 1475-2859).

Research interests

The research interests of A. Villaverde are the design, engineering and biological production of bio-inspired, nanostructured protein materials of therapeutic interest. These functional materials are mainly addressed to diverse applications in regenerative medicine and in cell-targeted drug delivery, especially in oncology. By using cell factories and biofabrication principles, the team he coordinates investigates and develops methodological approaches aimed to the production of self-assembling, protein-based nanoparticles for gene therapy and drug delivery and to the design of non-toxic, functional amyloids and other protein-based materials for the sustained released of protein and chemical drugs.

Keywords

Biotechnology; Nanomedicine; Nanobiotechnology; Biomaterials; Recombinant proteins

ICREA MEMOIR 2016



Zorzano, Antonio
Universitat de Barcelona (UB)
Life & Medical Sciences
ICREA Academia 2013

Full Professor of Biochemistry and Molecular Biology at the Univ. of Barcelona, Coordinator of the Molecular Medicine Programme at the IRB Barcelona, and Programme Head at CIBERDEM. Professor Zorzano received his PhD in Biology at the University of Barcelona, and did postdoctoral studies with Emilio Herrera (Hospital Ramon y Cajal, Madrid), Neil Ruderman (Boston University Medical Center), and Paul Pilch (Boston University Medical School). He was Visiting Professor at Boston University Medical School. He has supervised 35 PhD theses, and has coordinated and participated in international consortia funded by European institutions. He is co-inventor of 21 patents, and has published over 260 scientific articles (19,100 citations), with key discoveries published in leading journals, and an h-index of 71 (Google Scholar). He has been founder of biotechnological companies in Spain and in UK, among them Genmedica Therapeutics that is developing new therapies for diabetes.

Research interests

His research aims to identify the mechanisms by which mitochondrial dysfunction participates in the development of complex metabolic disorders such as obesity, insulin resistance, and type 2 diabetes as well as their chronic complications. His current interest links metabolism with mitochondrial dynamics, mitochondrial autophagy, and mitochondrial stress. More specifically, he focuses on the implications of mitochondrial fusion or mitochondrial fission proteins in age-related diseases, and the role of interplay between autophagy, mitochondrial function, and energy metabolism. In this connection, his laboratory has recently demonstrated that proteins participating in mitochondrial fusion are relevant regulators of metabolism. A global goal of his group is to identify and validate molecular targets that permit the prevention or treatment of insulin resistance, type 2 diabetes or obesity by using cell-based systems, genetically modified mice, and translational approaches.

Keywords

Insulin resistance, mitochondrial dynamics, mitochondrial function, mitofusins, autophagy