



## **HFSP AWARDS 2013**

# **RESEARCH GRANTS**

- Program Grants and Young Investigators are listed separately
- The first named for each award is the Principal Investigator
- Nationality is in parentheses when different from country in which the laboratory is located

## PROGRAM GRANTS

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### **Visual control of flight modes and transitions in birds**

<b>ALTSHULER</b> Douglas	Dept. of Zoology University of British Columbia, Vancouver	CANADA (USA)
<b>LENTINK</b> David	Dept. of Mechanical Engineering Stanford University	USA (THE NETHERLANDS)
<b>SRINIVASAN</b> Mandyam	Queensland Brain Institute University of Queensland, Brisbane	AUSTRALIA

### **An innovative, interdisciplinary model system for studying the developmental origins of sleep and brain rhythms**

<b>BALABAN</b> Evan	Psychology Dept. & Behavioral Neurosciences Program Stewart Biological Sciences Building, Montreal	CANADA (USA)
<b>DI PASCOLI</b> Stefano	Dept. of Information Engineering University of Pisa	ITALY
<b>RATTENBORG</b> Niels	Laboratory of Sleep and Flight in Birds Max Planck Institute for Ornithology, Seewiesen	GERMANY (USA)
<b>VAQUERO</b> Juan José	Depart. de Bioingeniería e Ingeniería Aeroespacial Universidad Carlos III de Madrid, Leganes	SPAIN

### **The birth and death of the chloroplast**

<b>BOCK</b> Ralph	Dept. III Max Planck Institute of Molecular Plant Physiology, Potsdam-Golm	GERMANY
<b>REICH</b> Ziv	Dept. of Biological Chemistry Weizmann Institute of Science, Rehovot	ISRAEL

### **(T)Race back in space – Recovering protein evolvability from multifunctional ancestors**

<b>BORNBERG-BAUER</b> Erich	Div. of Bioinformatics, School of Biological Sciences University of Muenster	GERMANY (AUSTRIA)
<b>HOLLFELDER</b> Florian	Dept. of Biochemistry University of Cambridge	UK (GERMANY)
<b>TOKURIKI</b> Nobuhiko	Michael Smith Laboratories University of British Columbia, Vancouver	CANADA (JAPAN)

### **From stochastic cell behavior to reproducible shapes: the coordination behind morphogenesis**

<b>BOUDAUD</b> Arezki	Dép. de Reproduction et Développement des Plantes ENS Lyon	FRANCE
<b>LI</b> Chun Bui	Research Institute for Electronic Science Hokkaido University, Sapporo	JAPAN (HONG KONG)
<b>ROEDER</b> Adrienne	Weill Institute for Cell and Molecular Biology and Dept. of Plant Biology Cornell University, Ithaca	USA
<b>SMITH</b> Richard S.	Institute of PLant Sciences/Mathematical Biology University of Bern	SWITZERLAND (UK)

### **Investigating the role of secreted RNAs in bacterial virulence**

<b>COSSART</b> Pascale	Bacteria-Cell Interaction Unit Pasteur Institute, Paris	FRANCE
<b>PALMER</b> Amy	Dept. of Chemistry and Biochemistry University of Colorado, Boulder	USA
<b>SOREK</b> Rotem	Dept. of Molecular Genetics The Weizmann Institute of Science, Rehovot	ISRAEL

### **Magnetic sense receptors in avian inner ear**

<b>DICKMAN</b> J. David	Dept. of Neuroscience Baylor College of Medicine, Houston	USA
<b>WINKLHOFER</b> Michael	Dept. of Earth and Environmental Sciences Munich University	GERMANY

### **Neuroscience of knowledge: neural representation of concepts and their role in perception and memory**

<b>FREIWALD</b> Winrich	Laboratory of Neural Systems The Rockefeller University, New York	USA (GERMANY)
<b>DIAMOND</b> Mathew E.	Tactile Perception and Learning Lab International School for Advanced Studies (SISSA), Trieste	ITALY
<b>QUIAN QUIROGA</b> Rodrigo	Dept. of Engineering University of Leicester	UK (ARGENTINA)
<b>SOMPOLINSKY</b> Haim	Racah Institute of Physics and Interdisciplinary Center for Neural Computation The Hebrew University of Jerusalem	ISRAEL
<b>ZOCCOLAN</b> Davide	Neurobiology and Cognitive Neuroscience Sectors International School for Advanced Studies, Trieste	ITALY

### **Actin and actin-related proteins: probing their nuclear function**

<b>GASSER</b> Susan M.	Mechanisms of Cancer Dept. Friedrich Miescher Institute for Biomedical Research, Basel	SWITZERLAND
<b>HARATA</b> Masahiko	Laboratory of Molecular Biology Graduate School of Agricultural Science, Sendai	JAPAN
<b>HEINIS</b> Christian	Lab. of Therapeutic Proteins and Peptides EPFL, Lausanne	SWITZERLAND
<b>HOZAK</b> Pavel	Dept. of Biology of the Cell Nucleus Institute of Molecular Genetics AS CR, Prague	CZECH REPUBLIC

### **Dynamics of actin anchoring in synaptic plasticity and learning**

<b>HAYASHI</b> Yasunori	Brain Science Institute RIKEN, Wako	JAPAN
<b>MENENDEZ DE LA PRIDA</b> Liset	Dept. of Functional & Systems Neurobiology Instituto Cajal CSIC, Madrid	SPAIN
<b>PONCER</b> Jean Christophe	Plasticity in Cortical Networks & Epilepsy' group, INSERM U839 Institut du Fer à Moulin, Paris	FRANCE
<b>TING</b> Alice	Dept. of Chemistry Massachusetts Institute of Technology, Cambridge	USA

### **Evolution of light perception networks in plants**

<b>HILTBRUNNER</b> Andreas	Dept. of Molecular Plant Physiology Institute of Biology II, Freiburg	GERMANY (SWITZERLAND)
<b>FLECK</b> Christian	Laboratory of Systems and Synthetic Biology Wageningen University and Research Center	THE NETHERLANDS (GERMANY)
<b>HUQ</b> Enamul	Dept. of Molecular Cell and Developmental Biology University of Texas at Austin	USA

### **Developmental assembly and synthesis of membrane nano-domains for oscillating cardiac regulation**

<b>HOSHIJIMA</b> Masahiko	Center for Research in Biological Systems University of California, San Diego, La Jolla	USA (JAPAN)
<b>SOELLER</b> Christian	School of Physics University of Exeter	UK (GERMANY)
<b>TAKESHIMA</b> Hiroshi	Dept. of Biological Chemistry Kyoto University	JAPAN

### **Artificial synthesis of the bacterial flagellar motor with DNA nanostructures**

<b>LEE</b> Lawrence	Dept. of Structural and Computational Biology The Victor Chang Cardiac Research Institute, Darlinghurst	AUSTRALIA
<b>BERRY</b> Richard	Dept. of Physics University of Oxford	UK
<b>NAMBA</b> Keiichi	Graduate School of Frontier Biosciences Osaka University, Suita	JAPAN
<b>TURBERFIELD</b> Andrew	Dept. of Physics University of Oxford	UK

### **Assembly and activity of multidrug efflux machines**

<b>LUI SI</b> Ben F.	Dept. Biochemistry University of Cambridge	UK (USA)
<b>HAMOEN</b> Leendert	Bacterial Cell Biology Swammerdam Institute for Life Sciences University of Amsterdam	THE NETHERLANDS
<b>MURAKAMI</b> Satoshi	Dept. of Life Science Tokyo Institute of Technology, Yokohama	JAPAN
<b>POS</b> Klaas	Institute of Biochemistry Goethe University Frankfurt	GERMANY (THE NETHERLANDS)
<b>VAN VEEN</b> Hendrik W.	Dept. of Pharmacology University of Cambridge	UK (THE NETHERLANDS)

### **Multimodal sensing in the natural environment**

<b>MOSS</b> Cynthia	Dept. of Psychology University of Maryland, College Park	USA
<b>HALLAM</b> John	Mærsk Institute University of Southern Denmark, Odense	DENMARK (JERSEY)
<b>PAGE</b> Rachel	Gamboa Smithsonian Tropical Research Institute, Panama	PANAMA (USA)
<b>SURLYKKE</b> Annemarie	Institute of Biology University of Southern Denmark, Odense	DENMARK
<b>YOVEL</b> Yossi	Dept. of Zoology Tel-Aviv University	ISRAEL

### **Revealing the fundamental limits of cell growth**

<b>PAULSSON</b> Johan	Dept. of Systems Biology, HMS Harvard University, Boston	USA (SWEDEN)
<b>BOLLENBACH</b> Tobias	Dept. of Biological Physics and Systems Biology IST Austria, Klosterneuburg	AUSTRIA (GERMANY)
<b>EHRENBERG</b> Måns	Dept. of Cell and Molecular Biology Uppsala University	SWEDEN
<b>TOPRAK</b> Erdal	Dept. of Biological Sciences and Bioengineering Sabanci University, Istanbul	TURKEY

### **Evolutionary innovation in bacterial signal processing networks**

<b>PINNEY</b> John	Division of Molecular Biosciences Imperial College London	UK
<b>DURAND</b> Dannie	Dept. of Biological Sciences, Computer Science Carnegie Mellon University, Pittsburgh	USA
<b>LAUB</b> Michael T.	Dept. of Biology HHMI, Cambridge	USA

### **Evolutionary ecology of chronobiology in host-parasite interactions**

<b>REECE</b> Sarah	Institute of Evolutionary Biology University of Edinburgh	UK
<b>MAIER</b> Bert	Laboratory of Chronobiology Institute for Medical Immunology, Berlin	GERMANY
<b>MIDEO</b> Nicole	Center for Infectious Disease Dynamics Pennsylvania State University, University Park	USA (CANADA)
<b>SAVILL</b> Nick	School of Biological Sciences University of Edinburgh	UK

### **Biomimetic nanoelectrodes for stable intracellular neural recordings**

<b>SCHAEFER*</b> Andreas	Dept. of Behavioural Neurophysiology Max-Planck-Institut fuer medizinische Forschung, Heidelberg	GERMANY
<b>MELOSH</b> Nick	Dept. of Materials Science and Engineering Stanford University	USA

### **Memory and chance during nutrient sensing in budding yeast**

<b>SWAIN</b> Peter	Center for Systems Biology University of Edinburgh	UK
<b>MICHNICK</b> Stephen W.	Dept. of Biochemistry University of Montreal	CANADA
<b>VERSTREPEN</b> Kevin	Laboratory for Systems Biology VIB, Heverlee	BELGIUM

### **Cell fate decision by integration of information from multiple plant hormones**

<b>VERNOUX</b> Teva	Dép. de Reproduction et Developpement des Plantes Ecole Normale Supérieure, Lyon	FRANCE
<b>GODIN</b> Christophe	Virtual Plants project-team INRIA, Montpellier	FRANCE
<b>SMOLKE</b> Christina D.	Dept. of Bioengineering Stanford University	USA

### **Interplay between motility appendages, exopolysaccharides, and hydrodynamics in early biofilms**

<b>WONG</b> Gerard	Dept. of Bioengineering The Regents of the University of California, Los Angeles	USA
<b>GOLESTANIAN</b> Ramin	Rudolf Peierls Centre for Theoretical Physics Dept. of Physics, Oxford	UK (IRAN)
<b>MAIER</b> Berenike	Biocenter and Institute for Theoretical Physics University of Cologne,	GERMANY
<b>O'TOOLE</b> George	Dept. of Microbiology & Immunology Dartmouth Medical School, Hanover	USA

### **Taking snapshots of photosynthetic water oxidation: simultaneous X-ray spectroscopy and crystallography**

<b>YANO</b> Junko	Physical Biosciences Division Lawrence Berkeley National Laboratory	USA (JAPAN)
<b>BERGMANN</b> Uwe	Linac Coherent Light Source SLAC National Accelerator Laboratory, Menlo Park	USA
<b>WERNET</b> Philippe	Institute for Methods and Instrumentation for Synchrotron Helmholtz-Zentrum Berlin Radiation Research	GERMANY
<b>ZOUNI</b> Athina	Dept. for Chemistry Technical University, Berlin	GERMANY

## YOUNG INVESTIGATORS

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### **Defining the functional and structural interface between voltage-activated sodium channels and beta-subunits**

**BOSMANS** Dept. of Physiology USA  
Frank Johns Hopkins University School of Medicine, Baltimore (BELGIUM)

**VAN PETEGEM** Dept. of Biochemistry and Molecular Biology CANADA  
Filip University of British Columbia, Vancouver (BELGIUM)

### **Interplay between mechanical and biological mechanisms during cell cortex assembly – RENEWAL APPLICATION**

**CHARRAS** London Centre for Nanotechnology UK  
Guillaume University College London (CANADA)

**PALUCH\*** MPI-CBG GERMANY  
Ewa Max Planck Institute of Molecular Cell Biology and (POLAND)  
Genetics, Dresden

**ROMET-LEMONNE** Dept. of Cytoskeleton Dynamics and Motility FRANCE  
Guillaume Lab. of Structural Enzymology and Biochemistry (LEBS),  
Gif-Sur-Yvette

**ROUX** Institute for Research in Immunology and Cancer (IRIC) CANADA  
Philippe Université de Montréal

### **Mechanical properties of tiled composites – lessons from shark skeletons**

**DEAN** Dept. of Biomaterials GERMANY  
Mason Max Planck Institute for Colloids & Interfaces, Potsdam (USA)

**WEAVER** Wyss Institute for Biologically Inspired Engineering USA  
James Harvard University, Cambridge

### **Neurons feel the force - new photonic tools to unravel the development of the nervous system**

**GATHER** IAPP GERMANY  
Malte C. TU Dresden

**FRANZE** Dept. of Physiology, Development and Neuroscience UK  
Kristian University of Cambridge (GERMANY)

**SCARCELLI** Dermatology - Wellman Center for photomedicine USA  
Giuliano Harvard Medical school, Cambridge (ITALY)



**Identifying and characterizing bacterial cytoskeletal elements and small molecules that target them– RENEWAL APP**

<b>GITAI</b> Zemer	Dept. of Molecular Biology Princeton University	USA
<b>KOLLMAN</b> Justin	Dept. of Anatomy and Cell Biology McGill University, Montreal	CANADA (USA)
<b>THANBICHLER</b> Martin	Max Planck Research Group Max Planck Institute for Terrestrial Microbiology, Marburg	GERMANY
<b>WEIBEL</b> Douglas B.	Dept. of Biochemistry and Dept. of Biomedical Engineering University of Wisconsin-Madison,	USA

**The role of alternative splicing in tissue specific protein interaction networks**

<b>KIM</b> Philip M	Terrence Donnelly Centre for Cellular and Biomolecular Research University of Toronto	CANADA (GERMANY)
<b>FALTER-BRAUN</b> Pascal	Dept. of Plant Systems Biology Technical University Munich (TUM), Freising	GERMANY
<b>KAIDA</b> Daisuke	Frontier Research Core for Life Sciences University of Toyama	JAPAN

**Optogenetic manipulation and functional characterization of adult neurogenesis in the olfactory bulb**

<b>KOMIYAMA</b> Takaki	Section of Neurobiology and Dept. of Neurosciences University of California, San Diego, La Jolla	USA (JAPAN)
<b>GRADINARU</b> Viviana	Biology/Gradinaru Lab California Institute of Technology, Pasadena	USA (ROMANIA)
<b>IMAYOSHI</b> Itaru	The Hakubi Center, Institute for Virus Research Kyoto University	JAPAN

**Assessing the function of neocortical Layer 1 with genetically-encoded indicators of synaptic activity**

<b>PETREANU</b> Leopoldo	Champalimaud Neuroscience Programme Champalimaud Foundation, Lisboa	PORTUGAL (ARGENTINA)
<b>TIAN</b> Lin	Biochemistry and Molecular Medicine/ Tian Lab University of California, Davis/School of Medicine, Sacramento	USA (CHINA)

### **Pathways ensuring the integrity of mitochondrial DNA**

**SFEIR** Dept. of Developmental Genetics USA  
Agnel Skirball Institute of Biomolecular Medicine, New York (LEBANON)

**BRUNET** Laboratoire de Biophysique FRANCE  
Erika Museum national d'histoire naturelle, Paris

### **Foot in motion: materials, mechanics and control**

**VENKADESAN** Control and Morphology Lab INDIA  
Madhusudhan National Centre for Biological Sciences, Bangalore

**BANDI** Collective Interactions Unit JAPAN  
Mahesh Okinawa Institute of Science and Technology Graduate (INDIA)  
University, Onna

**MANDRE** School of Engineering USA  
Shreyas Brown University, Providence (INDIA)

\* in the process of moving to UK