



## HFSP AWARDS 2020

# RESEARCH GRANTS

**Research Grants (Program Grants and Young Investigators)** provide 3 years of support for international teams involving at least two countries. Preference is given to intercontinental collaborations (rather than all N. American or all European teams). All team members are expected to broaden the character of their research compared to their ongoing research programs and interact with teams bringing expertise that is very different from their own so as to create novel approaches to problems in fundamental biology. All members of a Young Investigator team must be within 5 years of establishing their independent research group and no more than 10 years from their doctoral degree. Program Grant teams may consist of team members at any stage of their career as independent investigators.

Program Grants and Young Investigators are listed separately, alphabetically. 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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### **Uncovering the OS of trees: Environmental information processing and the control of bud dormancy**

<b>BASSEL</b> George	School of Biosciences University of Warwick Coventry	UK (GREECE)
<b>BAYER</b> Emmanuelle	Laboratory of Membrane Biogenesis UMR5200 University of Bordeaux, CNRS Villenave d'Ornon	FRANCE
<b>BHALERAO</b> Rishikesh	Dept. of Forest Genetics and Plant Physiology The Swedish University of Agricultural Sciences Umea	SWEDEN
<b>WALKER</b> Sara	School of Earth and Space Exploration Arizona State University Tempe	USA

### **Sounds and pheromones: neural networks merging olfactory and acoustic cues in sexual imprinting**

<b>BOVETTI</b> Serena	Dept. of Life Sciences and Systems Biology University of Turin	ITALY
<b>GIGAN</b> Sylvain	Laboratoire Kastler-Brossel Sorbonne Université, Ecole Normale Supérieure Paris	FRANCE
<b>PENN</b> Dustin	Konrad Lorenz Institute of Ethology Veterinary Medicine University Vienna	AUSTRIA (USA)

### **Integrating materials, behavior, robotics and architecture in giant filter-feeding sharks**

<b>DEAN</b> Mason	Dept. of Biomaterials Max Planck Institute for Colloids & Interfaces Potsdam	GERMANY (USA)
<b>GOLDBOGEN</b> Jeremy	Hopkins Marine Station, Dept. of Biology Stanford University Pacific grove	USA
<b>HANNA</b> Sean	Bartlett School of Architecture University College London	UK
<b>HAUERT</b> Sabine	Bristol Robotics Lab. University of Bristol	UK (SWITZERLAND)

## PROGRAM GRANTS

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### **How plant heat stress will influence global warming this century**

<b>FRANKS</b> Peter	School of Life and Environmental Sciences University of Sydney Eveleigh	AUSTRALIA
<b>COX</b> Peter	College of Engineering Mathematics and Physical Sciences University of Exeter	UK
<b>SCHROEDER</b> Julian	Division of Biological Sciences Cell and Developmental Biology Section University of California, San Diego La Jolla	USA

### **Time-resolving the mechanism of exocytosis in situ**

<b>GALLEGO</b> Oriol	Dept. of Experimental and Health Sciences Pompeu Fabra university Barcelona	SPAIN
<b>CASTANO-DIEZ</b> Daniel	BioEM Lab, Biozentrum University of Basel	SWITZERLAND (SPAIN)
<b>DE MARCO</b> Alex	Dept. of Biochemistry and Molecular Biology Monash University Clayton	AUSTRALIA (ITALY)

### **Self-organization and biomechanical properties of the endosomal membrane**

<b>GIZELI</b> Electra	Institute of Molecular Biology & Biotechnology Foundation for Research and Technology, Hellas Heraklion	GREECE
<b>ANDO</b> Toshio	WPI Nano Life Science Institute Kanazawa University	JAPAN
<b>SPAKOWITZ</b> Andrew J.	Dept. of Chemical Engineering Stanford University	USA
<b>ZERIAL</b> Marino	Zerial Lab, Principles of cell and tissue organization Max Planck Institute of Molecular Cell Biology and Genetics Dresden	GERMANY (ITALY)

### **High-throughput single-molecule evolution**

<b>GRIFFITHS</b> Andrew David	Laboratoire de Biochimie - CBI - UMR 8231 ESPCI Paris Tech	FRANCE
<b>VAN OIJEN</b> Antoine	School of Chemistry and Molecular Bioscience University of Wollongong	AUSTRALIA (THE NETHERLANDS)

## PROGRAM GRANTS

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### **Developing a method for rapid disassembly of neurodegenerative biomolecular condensates**

<b>INOUE</b> Takanari	Dept. of Cell Biology / Center for Cell Dynamics Johns Hopkins University Baltimore	USA (JAPAN)
<b>PERLSON</b> Eran	Dept. of Physiology and Pharmacology Tel Aviv University	ISRAEL
<b>SYKES</b> Cécile	Dept. of Biomimetism of cellular movement UMR168 Physical Chemistry Curie Lab. , Curie Institute, CNRS Paris	FRANCE

### **Biological protein springs as allosteric modulators**

<b>ITZHAKI</b> Laura	Dept. of Pharmacology University of Cambridge	UK
<b>BAHAR</b> Ivet	Dept. of Computational & Systems Biology University of Pittsburgh	USA
<b>GORDON</b> Reuven	Dept. of Electrical and Computer Engineering University of Victoria	CANADA
<b>YANG</b> Shang-Hua	Dept. of Electrical Engineering National Tsing Hua University Hsinchu	TAIWAN

### **Stable propagation of a minimal synthetic cell**

<b>KURUMA</b> Yutetsu	X-star Japan Agency for Marine-Earth Science and Technology Kanagawa	JAPAN (KOREA)
<b>ROGERS</b> W. Benjamin	Martin A Fisher School of Physics Brandeis University Waltham	USA
<b>WANG</b> Anna	Dept. of Chemistry University of New South Wales, Sydney Kensington	AUSTRALIA

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### **Does Evolution Repeat Itself? Genome Evolution and Phenotypic Convergence in Island Lizards**

<b>LOSOS</b> Jonathan	Dept. of Biology Washington University Saint Louis	USA
<b>KAWATA</b> Masakado	Graduate School of Life Sciences Tohoku University Sendai	JAPAN
<b>MENKE</b> Douglas	Dept. of Genetics University of Georgia Athens	USA
<b>WHITING</b> Martin	Dept. of Biological Sciences Macquarie University Sydney	AUSTRALIA (USA)

### **Cell death, fluctuating asymmetry, and the precise specification of *Drosophila* organ sizes**

<b>LUBENSKY</b> David K.	Dept. of Physics University of Michigan Ann Arbor	USA
<b>LEOPOLD</b> Pierre	Genetics and Developmental Biology Unit Institut Curie – Centre de Recherche Paris	FRANCE

### **Deconstructing neurobiology of settlement decision-making in coral larvae**

<b>MATZ</b> Mikhail	Dept. of Integrative Biology The University of Texas at Austin	USA
<b>JEKELY</b> Gaspar	Living Systems Institute University of Exeter	UK (GERMANY)

### **Cell-specific, photocontrollable neuropharmacology in the behaving mouse**

<b>MOUROT</b> Alexandre	Neuroscience Paris Seine Sorbonne Université - UPMC Paris	FRANCE
<b>ELLIS-DAVIES</b> Graham	Dept of Neuroscience Mount Sinai School of Medicine New York	USA

## PROGRAM GRANTS

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### **The extracellular space of the brain: a multi-modal analysis from nano-structure to in vivo function**

<b>NÄGERL</b> Valentin	Interdisciplinary Institute for Neuroscience University of Bordeaux, CNRS	FRANCE (GERMANY)
<b>HRABETOVA</b> Sabina	Dept. of Cell Biology SUNY Downstate Medical Center Brooklyn	USA
<b>NEDERGAARD</b> Maiken	Center for Translational Neuromedicine University of Copenhagen, Panum	DENMARK
<b>NISHIZAWA</b> Seiichi	Dept. of Chemistry, Graduate School of Science Tohoku University Sendai	JAPAN

### **Adaptive asexual evolution in cancer, corals and seagrasses - ADAPTASEX**

<b>REUSCH</b> Thorsten	Dept. of Marine Evolutionary Ecology GEOMAR Helmholtz Centre for Ocean Research University of Kiel	GERMANY
<b>BAUMS</b> Iliana	Dept. of Biology Pennsylvania State University University Park	USA (GERMANY)
<b>WERNER</b> Benjamin	Barts Cancer Institute QMUL London	UK (GERMANY)

### **Elucidating the mechanism of membrane fusion using DNA nanostructures**

<b>ROY</b> Rahul	Lab. for Nanobiology, Dept. of Chemical Engineering Indian Institute of Science Bangalore	INDIA
<b>AKSIMENTIEV</b> Aleksi	Dept. of Physics University of Illinois at Urbana-Champaign Urbana	USA
<b>HOWORKA</b> Stefan	Dept. of Chemistry Institute of Structural Molecular Biology University College London	UK (AUSTRIA)

## PROGRAM GRANTS

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### **T cell crowd control**

<b>TEXTOR</b> Johannes	Dept. of Tumour Immunology Radboud University Medical Center Nijmegen	THE NETHERLANDS (GERMANY)
<b>MANDL</b> Judith	Dept. of Physiology and Complex Traits Group McGill University Montreal	CANADA (AUSTRIA)
<b>PARISI</b> Daniel	Computer Engineering Dept. Buenos Aires Institute of Technology	ARGENTINA

### **Evolution of conformational and kinetic ensembles during functional transitions**

<b>TOKURIKI</b> Nobuhiko	Michael Smith Laboratories University of British Columbia Vancouver	CANADA (JAPAN)
<b>FRASER</b> James S.	Bioengineering and Therapeutic Sciences University of California San Francisco	USA
<b>NOJI</b> Hiroyuki	Dept. of Applied Chemistry University of Tokyo	JAPAN
<b>OSUNA</b> Silvia	CompBioLab group Institute of Computational Chemistry and Catalysis (IQCC) University of Girona, ICREA	SPAIN

### **Covalent modification and regulation of proteins by CO<sub>2</sub> using *Chlamydomonas* as a model system**

<b>VOCADLO</b> David	Depts. of Molecular Biology & Biochemistry and Chemistry Simon Fraser University Burnaby	CANADA
<b>CAMPBELL</b> Robert E.	Dept. of Chemistry, School of Science The University of Tokyo	JAPAN (CANADA)
<b>SMITH</b> Alison G.	Dept. of Plant Sciences University of Cambridge	UK

### **A living optically-communicating neural network**

<b>HUMAR</b> Matjaž	Condensed Matter Physics Dept. Humar Lab for Bio-integrated Photonics Jožef Stefan Institute, University of Ljubljana	SLOVENIA
<b>CHOI</b> Myunghwan	Dept. of Biomedical Engineering / Neurophotonics Lab Sungkyunkwan University Suwon	KOREA
<b>IM</b> Hyungsoon	Center for Systems Biology Massachusetts General Hospital Harvard Medical School Boston	USA (KOREA)

### **Large-scale mapping of intracellular dendritic dynamics during memory formation and replay**

<b>JAYANT</b> Krishna	Dept. of Biomedical Engineering Purdue University West Lafayette	USA (INDIA)
<b>EWELL</b> Laura	Institute for Experimental Epileptology and Cognition Research University of Bonn-Medical Center	GERMANY (USA)

### **The mechanics and energetics of insect herbivory: from cutting 'machines' to ecosystem structure**

<b>LABONTE</b> David	Dept. of Bioengineering The Imperial College of Science, Technology and Medicine London	UK (GERMANY)
<b>BACCA</b> Mattia	Dept. of Mechanical Engineering University of British Columbia Vancouver	CANADA (ITALY)
<b>HOLT</b> Natalie	Dept. of Biology University of California, Riverside	USA (UK)



## YOUNG INVESTIGATORS

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### **Hormone delivery in plants: mechanisms and physiological roles of gibberellic acid transporters - RENEWAL APP**

<b>NOUR-ELDIN</b> Hussam Hassan	Dept. of Dynamic Molecular Interactions Institute of Plant and Environmental Sciences Copenhagen University Frederiksberg	DENMARK
<b>BAND</b> Leah	Division of Plant and Crop Science, School of Biosciences University of Nottingham Loughborough	UK
<b>KAWATE</b> Toshimitsu	Dept. of Molecular Medicine Cornell University Ithaca	USA (JAPAN)
<b>SHANI</b> Eilon	School of Plant Sciences and Food Security Tel Aviv University	ISRAEL

### **Ménage a trois: balancing predator-prey interactions in a host-microbiome-phageome ecosystem**

<b>PERSAT</b> Alexandre	School of life sciences EPFL Lausanne	SWITZERLAND (FRANCE)
<b>NADELL</b> Carey	Dept. of Biological Sciences Dartmouth College Hanover	USA

### **Mechanosensitive dynamics at the fertilisation synapse**

<b>RUPRECHT</b> Verena	Cell and Tissue Dynamics Group Centre for Genomic Regulation (CRG) University Pompeu Fabra (UPF) Barcelona	SPAIN (AUSTRIA)
<b>LIU</b> Yan-Jun	Shanghai Institute of Cardiovascular Diseases, and Institutes of biomedical sciences Fudan University Shanghai	CHINA
<b>PAULI</b> Andrea	Pauli Lab. IMP Vienna	AUSTRIA (GERMANY)

### **A new role for aging: origin of cellular differentiation and the evolution of complex life**

**SAARIKANGAS** Helsinki Institute of Life Science HiLIFE FINLAND  
Juha Molecular and Integrative Biosciences Research Program  
University of Helsinki

**RATCLIFF** Dept. of Biology, School of Biological Sciences USA  
William Georgia Institute of Technology  
Atlanta

### **Chance or curse? The consequences of hybridization in a changing world**

**SCHUMER** Dept. of Biology USA  
Molly Stanford University

**BANK** Evolutionary Dynamics Group PORTUGAL  
Claudia Instituto Gulbenkian de Ciência (GERMANY)  
Oeiras

**ROCHMAN** Dept. of Ecology and Evolutionary Biology CANADA  
Chelsea University of Toronto (USA)

**SOUSA** Centre for Ecology, Evolution and Environmental changes PORTUGAL  
Vitor C University of Lisbon