SIBPA
Società Italiana di Biofisica Pura e Applicata
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Biophysics in Europe

# NEWSLETTER 2019

# #1 - January

- ✓ Calls for positions
- ✓ Meetings
- ✓ Congresses
- ✓ Workshops
- ✓ Schools
- ✓ Call for papers

**TWO YEARS JUNIOR SCIENTIST POSITION**

The Laboratory of Bio NanoScience and Technologies in Trento (LaBSSAH) is seeking a ***Junior Scientist*** in biotechnology for a two years position in an interdisciplinary research group carrying out collaborative research that includes several fields of sciences such as biological sciences, physics, chemistry, material sciences.

Skills:

- Experience in molecular biology protocols
- Experience in cell culture techniques
- Ability to work in team
- Desired: background on biological functionalization of materials

Main research topic: development of a new class of nanoscale materials able to isolate and purify biomarkers/active agents starting from cultured cells and/or blood, in strong collaboration with the Department of Applied Science and Technology of the Polytechnic of Turin.

LaBSSAH (Laboratory of Biomarkers Studies and Sequence for Health) is an interdisciplinary laboratory devoted to study and develop new methods, materials and devices for the understanding of diseases at the molecular level.

Please send *Curriculum Vitae*, Letter describing your interest and Contact of three reference persons to Dr. Cecilia Pederzolli <cecilia.pederzolli@fbk.eu>.
We will hold on to your resume and contact you only if your profile meets our needs.

Web Site: www.labssah.eu

| Job type | starting date |
|---|---|
| junior scientist in biotechnology | Jan 2019 |

Contacts:
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Bruno Kessler Foundation
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Our lab at Instituto Superior Técnico (IST) is looking for a highly motivated postdoctoral researcher to be hired under a research contract of the scientific project: "**SingleMolHTTex1--The aggregation-prone structures of Huntingtin exon 1 at the single-molecule level: Influence of membranes and implications in Huntington's disease**".

**Project Summary:** The pathological expansion of the polyglutamine (PolyQ) repeat within huntingtin (HTT) protein above a critical threshold length of about 37 glutamines is a hallmark of Huntington's disease (HD). HTT proteolytic cleavage or aberrant splicing lead to highly toxic HTT exon 1 fragments (HTTex1), which are sufficient to replicate much of HD's pathology. The precise mechanism by which HTTex1 contributes to neurodegeneration remains elusive but growing evidence support that *(i) biological membranes play a key role in this mechanism,* and *(ii) toxic monomeric and/or oligomeric HTTex1 species, rather than aggregates, are the primary cytotoxic species.* The overall aim of this project is to provide a detailed understanding of the initial steps of HTTex1-lipid interaction. However, this characterization has been exceptionally challenging using ensemble biophysical methods due to the heterogeneous nature of this interaction and the high propensity of HTTex1 to aggregate. To overcome these limitations, *a complementary set of single-molecule fluorescence techniques* (namely, single-molecule FRET and FCS) will be used to obtain insights into the physical/structural features of aggregation-prone states of HTTex1 at the membrane surface. Importantly, the results of this frontier project may assist in the rational design of inhibitors to treat and/or prevent HD.

**Type of contract:** **30-month research contract (not fellowship)** according to decree-law No. 57/2016.

**Requirements:** PhD in Biophysics, Bioengineering, Biotechnology, Biochemistry and Chemistry or related areas.

**Supervision:** The work will be carried out under the scientific guidance of Dr. Ana M. Melo. For further information, please send an email to anammelo@tecnico.ulisboa.pt

**Research Centers:** The project will be carried out in *Biological Fluorescence Group* (Professor Manuel Prieto) at Centro de Química-Física Molecular (CQFM) and Institute for Bioengineering and Biosciences (iBB) at Instituto Superior Tecnico (IST), in Lisbon (Portugal). Our research team has a wide and well-established expertise in the quantitative application of multi-parametric fluorescence approaches to study lipid-protein interactions, and also single-molecule techniques to investigate molecular

interactions and conformational changes in IDPs involved in neurodegeneration. Our lab has state-of-the-art fluorescence instrumentation (picosecond time-resolved fluorescence intensity and anisotropy) and also a SP5 Leica confocal microscope equipped with advanced microscopy techniques (e.g. two-photon microscopy, FCS, FRAP, FLIM, FAIM). This project will also support the implementation of smFRET in Portugal. In addition, iBB is equipped with all required facilities for protein expression/purification.

**Selected Publications:**


1. Melo AM, Elbaum-Garfinkle S, Rhoades E (2017) Insights into tau function and dysfunction through single-molecule fluorescence. ***Methods in Cell Biology*** 141: 27-44.
2. Melo AM, Coraor J, Alpha-Cobb G, Elbaum-Garfinkle S, Nath A, Rhoades E (2016) A functional role for intrinsic disorder in the tau-tubulin complex. ***Proc. Natl. Acad. Sci. U.S.A.*** 113: 14336-14341. **Highlighted on F1000 Prime.**
3. Melo AM, Prieto M, Coutinho A (2014) Quantifying lipid-protein interaction by fluorescence correlation spectroscopy (FCS). ***Methods Mol. Biol.*** 1076: 575-595.
4. Melo AM, Prieto M, Coutinho A (2011) The effect of variable liposome brightness on quantifying lipid-protein interactions using fluorescence correlation spectroscopy. ***Biochim Biophys Acta-Biomembr***. 1808: 2559-2568.

**[CfP] Position at Lanzano's Lab at Nanoscopy, IIT, Genoa, Italy**

A junior post-doctoral fellowship will be soon available in the Nanoscopy & NIC@IIT Research Line (https://www.iit.it/research/lines/nanoscopy-nic-iit ) at the Istituto Italiano di Tecnologia, Genoa, Italy, under the supervision of Dr. Luca Lanzanò (https://www.iit.it/component/people/luca-lanzano).

The project – funded by the Italian Association for cancer research, AIRC - involves the application of quantitative super-resolution imaging methods to investigate the origin of oncogene-induced genomic damage. To this end, the successful candidate will perform multicolor super-resolution imaging in an in vitro model of oncogene activation and integrate quantitative data obtained from imaging with information from genome sequencing analysis. The project will be carried out in close collaboration with the European Institute of Oncology in Milan.

The duration of the funded AIRC project is three years.

Scientific and technical background of the applicant.

We are looking for a skillful and motivated young scientist with a background in biology and/or biophysics with previous experience in fluorescence labeling and imaging. The candidate should ideally have documented expertise in fluorescence labeling, cell culture and manipulation and basic operation of the fluorescence microscope. Previous experience in super-resolution (especially STED) microscopy and/or imaging of the nuclear compartment will be considered a plus. Applicants close to finishing their PhD are also welcome to apply. Ability to work as part of a team is fundamental. Interested applicants should contact Dr. Luca Lanzanò (luca.lanzano@iit.it) for both informal enquiries and formal applications. Formal applications should include a CV, a motivation letter highlighting your research interests (max one page) and the contact information of two references.

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Joint Meeting

# CLUB EXO ENDO & GEM

& the Italian Societies of Biophysics, Biochemistry and Chemistry

# Membrane Biophysics of Exo-Endocytosis

## From Model Systems to Cells

www.biophee-19.fr

- USING BIOMIMETIC SYSTEM TO STUDY MEMBRANE REMODELLING
- MEMBRANE ORGANIZATION AND ASSEMBLIES
- BIOPHYSICAL METHODS
- IN SILICO & THEORITICAL STUDIES OF EXO-ENDO
- CYTOSKELETON DYNAMICS
- STRUCTURE OF EXO-ENDOCYTIC MEMBRANE SYSTEMS
- THERAPEUTIC DELIVERY

April 3rd–6th 2019

Mandelieu la Napoule FRANCE

## Organizing Committee :

Isabelle Mus-Veteau
Guillaume Drin
Giovanna Fragneto

Cédric Delevoye
Ludger Johannes
Stéphanie Miserey-Lenkei
Delphine Muriaux

Valeria Rondelli
Lorenzo Stella
Gerardino D'errico
Vito De Pinto

CEM Groupe d'Etudes des Membranes

CLUB EXOCYTOSE-ENDOCYTOSE

SIBPA

**Biophysical Society** Thematic Meeting

# Quantitative Aspects of Membrane Fusion and Fission

Padova, Italy | May 6–10, 2019

Quantitative understanding of biophysical mechanisms increasingly requires analysis of dynamical and physiologically relevant cellular changes. This is especially relevant for biological membrane processes that occur at distinct points in time and space, such as membrane fusion or fission, and that are driven by localized and quantifiable interaction of proteins, lipids, and messenger molecules.

This interdisciplinary meeting will address the growing need for collaboration between experimentalists and theorists to fully take advantage of the quantitative nature of the experimental observations in this field and to improve the quantitative descriptions of membrane events.

**Abstract Submission Deadline:**
January 14, 2019

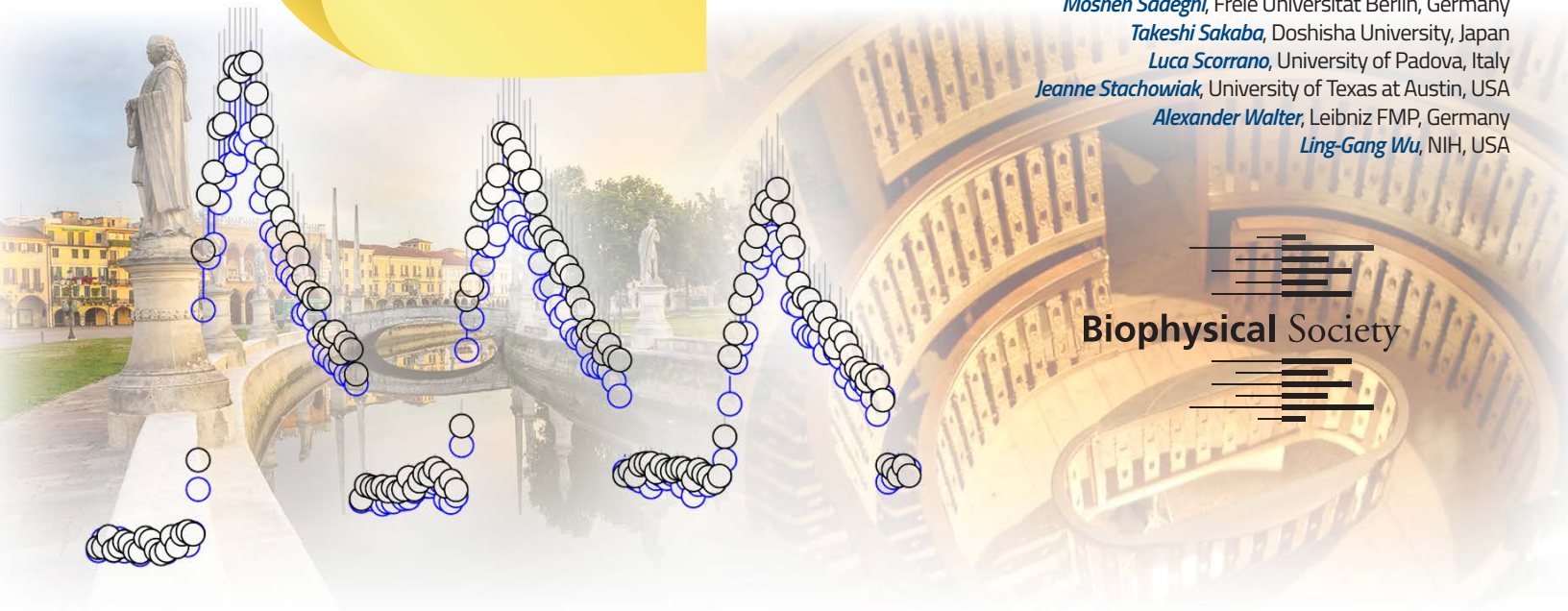
**Early Registration Deadline:**
February 1, 2019

## ORGANIZING COMMITTEE

*Sebastian Barg,* Uppsala University, Sweden
*Jenny Hinshaw,* NIH, USA
*Dinah Loerke,* University of Denver, USA
*Morten Gram Pedersen,* University of Padova, Italy
*Jakob B. Sorensen,* University of Copenhagen, Denmark

## SPEAKERS

*Arun Anantharam*, University of Michigan, USA
*Uri Ashery*, Tel-Aviv Univeristy, Israel
*Axel T. Brunger*, Stanford University, USA
*Karin Busch*, University of Münster, Germany
*Liangyi Chen*, Peking University, China
*Giuliana Cortese*, University of Padova, Italy
*Susan Cox*, King's College, United Kingdom
*Katharina Gaus*, University of New South Wales, Australia
*Stephanie Gupton*, University of North Carolina, USA
*Tomas Kirchhausen*, Harvard University, USA
*Jürgen Klingauf*, Univeristy of Münster, Germany
*Manfred Lindau*, Cornell University, USA
*Fernando Marengo*, University of Buenos Aires, Argentina
*Frederic Meunier*, Queensland Brain Institute, Australia
*Thomas Pucadyil*, Indian Institute of Science Education and Research, India
*Aleksandra Radenovic*, École Polytechnique Fédérale de Lausanne, Switzerland
*Ravi Radhakrishnan*, University of Pennsylvania, USA
*Jens Rettig*, Saarland University, Germany
*Herre Jelger Risselada*, University of Göttingen, Germany
*Moshen Sadeghi*, Freie Universität Berlin, Germany
*Takeshi Sakaba*, Doshisha University, Japan
*Luca Scorrano*, University of Padova, Italy
*Jeanne Stachowiak*, University of Texas at Austin, USA
*Alexander Walter*, Leibniz FMP, Germany
*Ling-Gang Wu*, NIH, USA



Biophysical Society

For more information, visit www.biophysics.org/2019Padova

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**[CONF] Optical Methods for Inspection, Characterization, and Imaging of Biomaterials IV (Conference OM105)**

Dear Collegue,
Please consider to diffuse the link about the conference: Optical Methods for Inspection, Characterization, and Imaging of Biomaterials IV (Conference OM105)
Here the link:
https://spie.org/EOM/conferencedetails/optical-methods-inspection
Submission is still possible.

Best regards,
Pietro Ferraro
Chair

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**[WS] [Ebsa] AILM Workshop and Practical school in Isotopic labeling**

We are pleased to announce that we are organizing the 3rd international meeting on Advanced Isotopic Labelling Methods for integrated structural biology from 26$^{th}$ to 29$^{th}$ March 2019 in Grenoble - France. AILM2019 will focus on the development of isotopic labelling techniques and their application to the study of biomolecular structure, interactions and dynamics. Sessions will cover developments in isotopic labelling strategies for NMR spectroscopy, mass spectrometry, neutron scattering and diffraction, as well as methodological approaches, such as co-expression, segmental labelling, specific labelling and sample production in vitro or in eukaryotic cells. The program will also showcase elegant examples of the application of these methods to challenging biological systems.

**Invited lectures** will be presented by: H. Arthanari (USA), P. Barraud (FR), A. Bax (USA), P. Bernado (FR), J. Benesch (UK), T. Dayie (USA), J. Feigon (USA), F. Gabel (FR), A. Gossert (CH), J. Hennig (DE), M. Ikura (CA), J. Iwahara (USA), M. Ringkjobing Jensen (FR), M. Kainosho (JP), C. Kalodimos (USA), C. Kreutz (AT), G. Lippens (FR), E. Luchinat (IT), T. Madl (AT), K. Petzold (SE), S. Radford (UK), A. Ramos (UK), M. Sattler (DE), I. Shimada (JP), G. Wagner (USA), S. Wiesner (DE), S. Zinn-Justin (FR), R. Zubarev (SE).

**20 lectures will be selected from submitted abstracts.** Registration and Abstract submission are now opened. The registration fees for young researchers is only 170 € and affordable single rooms on conference site are available. Please visit AILM2019 web site to obtain more information: www.ailm2019.org

Registered AILM2019 attendees can also apply to participate for free to the satellite Practical school from March 29th to April 5th. This school will provide both practical and theoretical training in state-of-the-art isotopic-labelling approaches for NMR studies. The participants will gain hands-on experience in a broad range of labelling methods, including innovative protocols for specific labelling, segmental labelling and *in vitro* expression of RNA and proteins. Participants will be encouraged to bring their own protein and/or RNA constructs for use in practical demonstrations. Please visit Practical School web page for more information and application.

We look forward to welcoming you in Grenoble !
Bruno Kieffer, Carine Tisné, Michael Plevin and Jérôme Boisbouvier

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**[WS] [Ebsa] CECAM workshop Challenges in Large Scale Biomolecular Simulation 2019: Bridging Theory and Experiments**

Dear colleagues,

We are pleased to announce the CECAM workshop entitled « Challenges in Large Scale Biomolecular Simulation 2019: Bridging Theory and Experiments», which will take place in Cargèse, Corsica (FR) at the Institut d'Etudes Scientifiques de Cargèse from May 13th till May 17th.
The aim of the workshop is to collect several experts in various field for a wide and up-to-date overview of the current simulation and experimental techniques to study biomolecules with the aim of advancing on how to better account for experimental data in simulations and develop tools of practical use to experimentalists.
For further information, see:

https://cargese2019.sciencesconf.org

Kind regards
The organizers (Yassmine Chebaro, Ivan Coluzza, Elisa Frezza, Nicolas Leulliot, Samuela Pasquali, Tamar Schlick and Fabio Sterpone)

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**[CS] [Ebsa] Course on chemistry of metals in biological systems**

We are pleased to announce that we are organizing a new edition of the course on chemistry of metals in biological systems. The course targets PhD students and early stage post-docs interested in the broad area of metals in biology.
It will take place in Oeiras, Portugal from the 12th until the 18th of May 2019. The course is a blend of general lectures related with the roles of metals in biology and lectures on specific methods to study these systems. It incorporates three days of hands-on, practical sessions on selected methods.

The faculty includes: P. Hildebrandt (DE), M. Piccioli (IT), M. Teixeira (PT), A. Casini (UK), S. deBeer (DE), W. Browne (NL), Y. Ozaki (JP) and R. Crichton (BE).

Registration is now open until the end of January. The registration fees are 450 euros including accomodation and dinner. Please visit the course web site to obtain more information:
https://louro98.wixsite.com/biologicalmetals

We look forward to welcoming you in Oeiras
Ricardo Louro

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Assistant Researcher with Habilitation
Coordinator of the Center for Magnetic Resonance António Xavier
Leader of the Inorganic Biochemistry and NMR laboratory
Instituto de Tecnologia Química e Biológica António Xavier
Universidade Nova de Lisboa

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