Newsletter
December 2024

SIBPA
Società Italiana di Biofisica Pura e Applicata
fondata nel 1973

Comunicazioni dalla SIBPA

Auguri e EBSA 2025

Care Socie, cari Soci,

auguro a tutti voi un sereno periodo festivo e un felice e stimolante 2025!

Colgo l'occasione per segnalarvi che sono ufficialmente aperte le iscrizioni al congresso EBSA2025, che si terrà a Roma dal 30 giugno al 4 luglio.

Tutte le informazioni, in costante aggiornamento, sono disponibili sul sito del congresso www.ebsa2025.eu

Tanti auguri di Buone Feste e di un Sereno 2025!

Velia

Biophysics Week

Care socie e cari soci,

siamo lieti di annunciare che anche quest'anno la SIBPA parteciperà con entusiasmo alla Biophysics Week, promossa dalla Biophysical Society (https://www.biophysics.org/biophysics-week#/), che si terrà dal 24 al 28 marzo 2025.

L'obiettivo dell'iniziativa è promuovere e diffondere la conoscenza della biofisica in ogni ambito: dalla divulgazione scientifica al mondo della scuola, fino alla ricerca accademica.

Invitiamo tutti voi a organizzare eventi, grandi o piccoli, per celebrare questa settimana speciale. Saremo lieti di:

promuovere le vostre iniziative,
condividere informazioni con tutti i soci,
pubblicare gli eventi sulla pagina web ufficiale della SIBPA.

Vi chiediamo di informarci sugli eventi che avete in programma: insieme possiamo contribuire a far crescere l'interesse e la consapevolezza intorno alla biofisica!

Grazie per il vostro contributo,
Un caro saluto,

il Consiglio Direttivo SIBPA

Call for positions

Research fellowship - Conceptual modeling of plants and plant organs as antennas for transmitting and receiving electromagnetic waves.

N. 1 research fellowship - Duration years 1 – Annual pre-tax amount: € 23.250,00 (D.R. n. 6331 del 20.12.2024 Programma n. 14)

Scientific coordinator: Prof. Armando CARPANETO

Funding: EIC Pathfinder OPEN EcoSentinel GAP - 101186925

Title: Conceptual modeling of plants and plant organs as antennas for transmitting and receiving electromagnetic waves.

Description: The research fellow will conduct a theoretical study, possibly developing mathematical models and integrating functional data, to determine the characteristics of a plant or one of its organs, particularly the leaf, that enable the plant or organ to propagate or receive an electromagnetic wave, effectively functioning as a true (organic) antenna.

Required skills: interdisciplinary expertise in biology and physics.

Scientific disciplinary sector: BIO/04 FISIOLOGIA VEGETALE now BIOS-02/A Fisiologia vegetale

Place: Dipartimento di Scienze della Terra, Dell'Ambiente e della Vita (DISTAV), Università di Genova

Required degree: Laurea Magistrale delle classi LM-6 Biologia, LM-7 Biotecnologie agrarie, LM-8 Biotecnologie industriali, LM-9 Biotecnologie mediche, veterinarie e farmaceutiche, LM-21 Ingegneria biomedica, LM-29 Ingegneria elettronica, LM-17 Fisica.

Subjects of the interview: Electrical properties of plant cells: membrane potential, Nernst potential, ion channels, and electrogenic transporters. Basic elements of electromagnetism: definition of resistance and capacitance, electric field, magnetic field, propagation, and reception of electromagnetic waves.

Please see:
https://concorsi.unige.it/home?ufficio=Assegnisti
https://concorsi.unige.it/home/procedure/5117

Deadline for applications: 07 January 2025

For further information, please contact

Prof. Armando Carpaneto at armando.carpaneto@unige.it

Call for papers

European Biophysics Journal - Special issue on protein-ligand binding

I invite you to submit a manuscript for the European Biophysics Journal special issue on protein-ligand binding. Together with Prof. Helgi B. Schioth, we serve as associate editors for this journal.

Please see https://link.springer.com/collections/ebdgdjhihi for more information. The European Biophysics Journal is the main journal and supporter of the European Biophysical Societies Association and we could support this journal by publishing there.

The Special Issue on Protein-Ligand Binding:

We are excited to announce a new Special Issue of the European Biophysics Journal. This issue will focus on ligand binding to proteins and translation toward drug design. This interdisciplinary research area is at the interface of biophysical chemistry, molecular biophysics, biothermodynamics, structural biology, and medicinal chemistry. The issue is planned to cover a wide range of techniques including but not limited to isothermal titration calorimetry, thermal shift assay (DSF), differential scanning calorimetry, inhibition of enzymatic activity, surface plasmon resonance, microscale thermophoresis, X-ray crystallography, NMR, Cryo-EM, and other techniques that determine the thermodynamics, kinetics, or structure of the protein-ligand complex. All manuscripts addressing experimental, computational, or combined approaches to advance our understanding of small molecule recognition and specific binding by proteins toward better drug design are welcome.

Please consider submitting your research manuscript by the suggested

March 31, 2025 deadline.

Courses and Schools

KINETICS2025 advanced-level course

The advanced-level course on biophysical methods for the real-time characterization of biomolecular interactions (Kinetics2025) will take place in Institut Pasteur (Paris, France) on March31-April4 2025.

See : https://www.mosbri.eu/training/advanced-level-schools/als2/

Several top-level scientists and instrument manufacturers will take part in this exciting theoretical/practical course organized in the frame of the European project MOSBRI (Molecular-Scale Biophysics Research Infrastructure: www.mosbri.eu).

Applications are now open (deadline January 17th 2025) : only 20 trainees will be selected, so don't wait!

For any question, contact als2@mosbri.eu

MOSBRI
Molecular-Scale Biophysics Research Infrastructure

Advanced Level School

Biophysical methods for the real-time characterization of biomolecular interactions (Kinetics 2025)

31st March - 4th April 2025
Institut Pasteur, Paris, France (Pasteur-PFBMI)

The real-time monitoring of binding kinetics provides a much more accurate representation of biological processes than end-point « equilibrium » measurements. Knowing how fast interaction partners associate and what is the time stability of biomolecular assemblies is crucial to understand the dynamics of living systems.

The objective of the theoretical/practical "Kinetics2025" course is to illustrate the

large diversity of biophysical methods that have been developed over the years for the determination of rates of association (k_{on}) and dissociation (k_{off}) in a variety of contexts, and to provide an invaluable opportunity to assess hands-on the strong points of a number of commercially available instruments.

The course will cover different techniques such as:

- Surface-based methods: SPR, BLI, GCI, SwitchSense, QCM,…
- Real-time cell-binding assays
- In-solution methods: stopped-flow, FIDA, kinetic ITC
- Single molecule/particle methods: AFM, magnetic tweezers, mass photometry

Time will also be dedicated to data analysis and FAIR database deposition.

Other details: The course is aimed at scientists with experience in at least one method of kinetic characterization of biomolecular interactions, who wish to deepen their knowledge of the field and acquire new scientific and technical skills. Applicants can be graduate or PhD students, postdoctoral fellows, technicians or engineers, early career or more senior researchers, working in whatever academic or industrial context. The applicants should show that the outcome of the course will be used directly in their projects and activities.

Registration to the course will be free of charge. Daily lunches and coffee breaks will be provided to all participants. Candidates can also apply for travel bursaries of up to €500 upon proof of expenses (reimbursed after the course).

Visit the website to find out more and to apply to take part in the school.

https://www.mosbri.eu/training/advanced-level-schools/als2/

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 101004806

Conferences

XXII GEM MEETING: Diving into the Secrets of Cellular Membranes

We are pleased to announce the next international congress of the Membrane Study Group of the French Biophysical Society, to be held at Nausicaá, the National Sea Centre and the largest aquarium in Europe, located in Boulogne-sur-Mer, from the from the 1st to the 4th of April 2025. The meeting will bring together international scientists working in the very vast field of biological membranes in an inspiring environment of scientific exchange and discussion.
Participants will have the opportunity to submit a contribution to the special issue of Biochimica et Biophysica Acta (BBA) - Biomembranes. This special issue will delve into the pivotal role of cellular membranes in biological processes, spanning from bacteria to animals. We encourage submissions from a broad range of disciplines, including biochemistry, biophysics, physics, bioinformatics, and

chemistry, to foster a comprehensive understanding of membrane structure, dynamics, and function.

Early bird discounts are valid until March 16th, 2025. However, due to the maximum allowed occupancies of the conference room and dining/social areas, registrations will be limited to 100 attendants. Make sure to register as soon as possible!

For fees, invited speakers and additional information, please check the webpage at https://gem-2025.sciencesconf.org

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News from EBSA

IMPRS-CBP doctoral training program

We are pleased to announce that the new application cycle of the International Max Planck Research School on Cellular Biophysics (IMPRS-CBP) is now open! We are looking for excellent students in natural sciences to apply for fully funded PhD positions in Frankfurt and Mainz, Germany.

IMPRS-CBP is a doctoral training program jointly hosted by the Max Planck Institute of Biophysics, Goethe University Frankfurt am Main, Johannes Gutenberg University Mainz, and the Frankfurt Institute of Advanced Studies. Our mission is to train graduate students to tackle one of the ultimate biological challenges: gain an atomic- and molecular-level understanding of the cell and its functions.

We offer:

A wide range of state-of-the-art techniques in biophysics, e.g. cryo-electron microscopy, NMR, mass spectrometry, high-resolution light microscopy, and large-scale computing

An interdisciplinary research environment connecting biological sciences (structural biology, cell biology, neurobiology, molecular biology, microbiology, biochemistry, computational biology) with physics, mathematics, and chemistry

Excellent working conditions with fully funded PhD positions and assistance in all organizational matters

An outstanding supervision concept with multiple experienced and engaged supervisors

The opportunity to build lasting networks in a collaborative research environment with ~40 internationally renowned PIs from the participating institutions

An attractive living environment with the Rhine-Main region around Frankfurt/Mainz being an international scientific, financial, and cultural hub in Germany

A strong community of PhD students jointly attending graduate courses

An innovative teaching concept with professional and transferable skills workshops

We are excited to welcome a new cohort of talented individuals to our program and look forward to receiving their applications until February 7, 2025.

For more information on our program and our faculty, please visit :

https://imprs-cbp.mpg.de/

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