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Biophysicists Awarded the 2026 Nobel Prize for Physiology or Medicine

The German biophysicists Peter Hegemann (left), Humboldt-University Berlin, and Georg Nagel (right), University of Würzburg, together with the US neuroscientist and psychiatrist Karl Deisseroth, Stanford University, have been awarded the 2026 Nobel Prize for Physiology or Medicine for their discoveries concerning light-activated ion channels and optogenetics.

Peter Hegemann and Georg Nagel discovered the retinal protein channelrhodopsin in a single-celled alga, which allows the production of electrical impulses across the cell's membrane, analogous to the action potential of a mammalian neuron, when illuminated by light. As in a neuron, the electrical impulses are caused by the opening of the protein's channel which allows ions to flow down a concentration gradient across the membrane. Karl Deisseroth was the first person to express channelrhodopsin into an mammalian neuron and show that the cell could be activated by light. He invented the term *optogenetics* for this new field of study, which offers great protential both in fundamental research in how the brain works and in the medical treatment of neurological disorders.

Peter Hegerman was a speaker at the IUPAB-supported International Conference on Retinal Proteins, reported later in the newsletter.

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Nominations Open for the 2027 Avanti Polar Lipids - EBSA - IUPAB Prize

Avanti Polar Lipids, Incorporated, the European Biophysical Societies Association (EBSA) and IUPAB award the Avanti Polar Lipids Prize. The prize will be presented at the biennial EBSA Congress and the triennial IUPAB Congress, which in 2027 will be held jointly in Berlin, Germany, September 5-9. The prize will be given to an investigator for outstanding contributions to lipid or related membrane biophysics without limit of age. The winner receives an honorarium of USD$3,000, and a medal. Registration, 2 nights' accommodation and the congress banquet cost will be paid for the awardee. The IUPAB and EBSA Councils will constitute a Jury that will award the prize. Details can be found on the IUPAB and EBSA websites at iupab.org/avanti-iupab-prize/ and ebsa.org/avanti-polar-lipids-ebsa-award/. The nomination packet, in PDF format, should be emailed to the address award-nominations@ebsa.org before **January 8th, 2027**. Download the application form from the EBSA website.

Nominations Open for the 2027 IUPAB Young Investigator Prize

IUPAB invites all biophysicists to nominate candidates for the IUPAB Young Investigator Medal and Prize to be awarded at the 2027 IUPAB Biophysics Congress, in Berlin, Germany. The award will be given to a young investigator for outstanding contributions to the field of biophysics. The winner receives an honorarium of US$2,000 and a medal. Two nights' accommodation, registration and the congress banquet cost will be paid for the awardee, but no other travel costs.The IUPAB Council will constitute a Jury that will make the award. Details can be found on the IUPAB website at https://iupab.org/iupab-young-investigator-prize/. The deadline for nominations is the 2**8th of February, 2027**.

Nominations for the 2027 Michèle Auger Award

Nomination deadline — **31 October 2026**

Eligibility criteria and all information concerning nomination submission can be found on the IUPAB website at https://iupab.org/michele-auger-award/.

11th Regional Biophysics Conference (RBC2026), Belgrade, Serbia

The IUPAB-Sponsored RBC2026 Conference was held in Belgrade, Serbia, at the Serbian Academy of Sciences and Arts, from 1-4 June 2026. The conference brought together researchers, students, and professionals working in biophysics and related disciplines. Participants came from Serbia, Croatia, Slovenia, Hungary, Italy, Slovakia, Austria, as well as other countries beyond the RBC region: Switzerland, Portugal, Spain, Russia, Bosnia and Herzegovina, USA. The scientific program included keynote lectures, invited talks, oral presentations, poster sessions, and discussions. The scientific program included sessions on molecular and cellular biophysics, biophysical methods and instrumentation, structural biology, and biophysical approaches to complex biological systems. Additional focus was placed on advanced spectroscopic and imaging techniques, computational and theoretical biophysics, and interdisciplinary applications in biomedicine and life sciences. Keynote and invited lectures, oral communications, and poster presentations provided a comprehensive overview of recent advances in the field. The program was designed to encourage interaction between established scientists and early-career researchers, fostering scientific exchange, discussion, and collaboration.

IUPAB support enabled the invitation of two plenary speakers and travel bursaries for 10 early career researchers.

Cell and Molecular Biophysical Techniques Course, Campinas, Brazil

The 2nd edition of the postgraduate course “Cellular and Molecular Biophysical Techniques” was organized by the Biophysics Disciplinary Core of the Asociación de Universidades Grupo Montevideo. The course's primary objective was to provide students with a comprehensive introduction to biophysical methodologies available within the region. The program promoted scientific exchange and strengthened collaborative networks among students from South American research groups. The course was structured in two parts: a virtual theoretical and an applied module, held from March 17 to June 30, 2025, and from October 27-28, 2025, respectively.

The theoretical part included: protein purification, X-Ray crystallography, NMR, CD, fluorescence, probes and microscopy, atomic force spectroscopy, computational biology, SAXS, XPCS, cryo-EM, optical tweezers and IR spectroscopy. Each technique was in charge of an expert (professors belonging to different South American Universities and Research Centers). The virtual (theoretical) course was academically supported by 3 universities from Argentina, Brazil, and Chile: the Universidad Nacional del Litoral, Unicamp, and the Universidade Chile. Each institution confered academic credits to the enrolled graduate students.

99 participants (91 PhD, 3 undergraduate students and 5 postdoctoral researchers from Argentina, Brazil, Chile, Colombia, and Uruguay) attended the course. 20 students were selected from among those who passed the theoretical module to participate in the practical component, which was held at CNPEM / Brazil. The practical lessons included hands-on sessions in protein purification and crystallization, X-ray crystallography, FTIR spectroscopy, X-ray correlation spectroscopy, small-angle X-ray scattering and circular dichroism. The 20 selected students also participated in the 49th Annual Meeting of the Brazilian Biophysical Society (SBBf), held at UNICAMP from 28-31 October 2025. The SBBf kindly waived the registration fees for these students to attend the congress.

Furthermore, the course aimed to promote access to the synchrotron facilities at CNPEM, Brazil — a globally recognized center of excellence in structural biology — for students and research groups from across Latin America. Financial support from IUPAB allowed the course organisers to unite Latin American graduate students, offer practical biophysics training, and promote open access to CNPEM/Brazil's internationally recognized synchrotron facilities in structural biology.

21st International Conference on Retinal Proteins, Siena, Italy

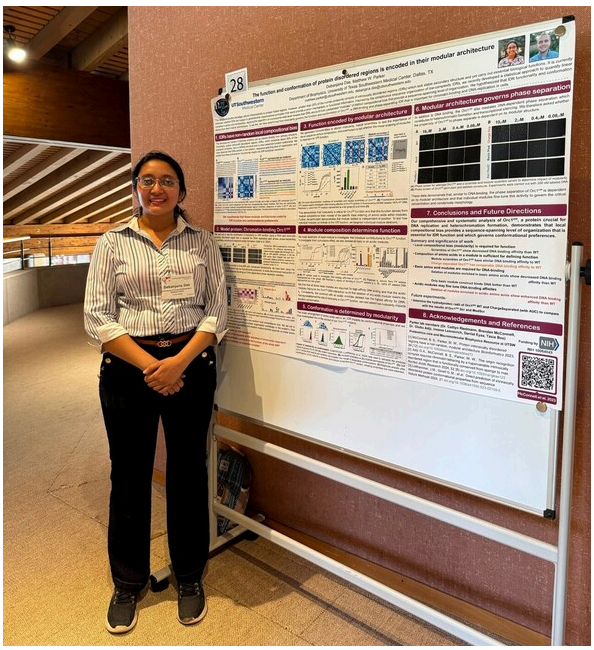
Participants from 21 countries attended the 21st International Conference on Retinal Proteins in September organised by Massimo Olivucci (Chair, Siena, Italy) and Kwang-Hwang Jung (co-chair, Sogang, Korea).

Lectures (8 Keynote, 43 Invited, 37 Contributed lectures and 68 Posters) presenting the latest research on retinal proteins were presented in the magnificent crypt of the church of San Francesco in Siena. Retinal proteins are among the most abundant proteins on earth and of note at the meeting was the rapid increase in the number of rhodopsins being discovered worldwide. Rhodopsins play a key role in light-driven energy harvesting, ion transport and environmental sensing in many life forms, and at high efficiency. A wide range of biophysics was presented, including computationally driven explanations of the photophysics of light-energy transduction, optogenetics, structural biology and detailed taxonomy of newly discovered rhodopsins. Many talks were focussed on how light is converted into cellular energy, and on spectral tuning to various wavelengths across the visible spectrum and beyond.

IUPAB supported two speakers from Argentina to attend the conference, Virginia Albarracin (Tucuman) and Mario Eduardo Guido (Cordoba), see above with IUPAB President Prof Tony Watts (centre). A Thematic Special Collection for *Biophysical Reviews* is being planned as a result of the conference. IUPAB also supported two poster prizes.

These were assigned to Daishuke Hashimoto and Seiwa Nakamura both from the University of Tokyo but working in different groups.

Debanjana Das - From USA to Switzerland



I participated in the Gordon Research Seminar on Intrinsically Disordered Proteins (IDPs) and presented a 10-minute talk and a poster about the research that I do at the UTSW Medical Center, Dallas, USA. My research aims to understand the relation between the amino acid sequence and function of disordered regions in proteins, that lack a stable structure but comprise almost a third of the human proteome and have many important signalling and other functions in the living system. I was able to obtain critical constructive feedback about my project in the talk and poster sessions. This will help in designing and refining experiments and constructs for my project. The meeting was very close-knit, and I got to know different work and perspectives of scientists who are working in the field of IDPs, both experimental and computational. I have also established connections with potential collaborators for computational assistance of the experimental work that I have done. The IUPAB travel bursary helped me immensely in paying the registration cost for the conference.

Social Media

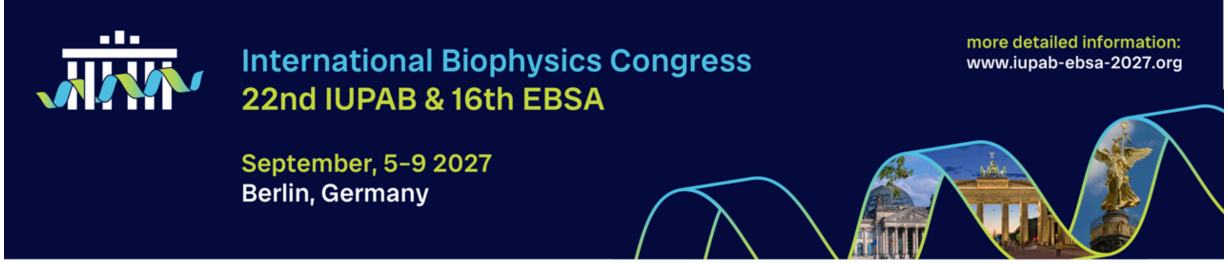
Follow IUPAB on social media platforms! These include Twitter (@IUPAB1), Instagram (IUPAB1) and Facebook (IUPAB2). Please head over to any of these pages to keep up to date on all IUPAB activities. A IUPAB WiKi page has also been created – details here.

Future IUPAB Events

2027 IUPAB Congress (September 5 – 9) Berlin, Germany

Read more on the congress website.

2030 IUPAB Congress (June 17 – 21) Quebec City, Canada



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