Introducing the new members of the JGP Editorial Advisory Board

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In this issue, we welcome 11 new members to our Editorial Advisory Board. The Board serves a vital function for the Journal. They are a board of reviewers who are particularly dedicated to the Journal; we rely on them heavily. We ask their advice and recommendation about whether to send out for full review submitted manuscripts that are outside our recognized scope. They act as guest editors who handle the review process when the editor or associate editors submit a manuscript of their own work, maintaining objectivity and fairness for everyone.

The publishing landscape is changing rapidly. We face challenging issues such as open access, multimedia content, and the proliferation of for-profit journals. The Editorial Advisory Board guides the Journal with integrity, vision, and generosity. JGP is a journal run by scientists for scientists. With no stockholders, we answer only to our authors, reviewers, and readers. The Board is a sampling of these groups that is dedicated to the Journal and to our mission of service.

Members of the Editorial Advisory Board are the best ambassadors for the Journal one could hope for. In addition to submitting their own work to JGP, they spread our message of fair, fast, constructive, and consistent review, recruiting their colleagues to submit to JGP and increasing the diversity of the work we publish. Each year we welcome a handful of new members who are chosen for their dedication to the Journal, excellent judgment, and their high scientific values. In addition, our choice of new members may help us to cover new or expanding research areas within our community.

In summary, members of our Editorial Advisory Board are the real heroes of JGP. To our newest members, we are proud to have you among us. To our long-serving members, thank you for everything you do for our community. YOU are JGP.

Robert S. Balaban
Bob received his BS degrees in chemistry and biology at the University of Miami in 1975. After completing the membrane transport course at the Duke Marine Labs, he became fascinated with the membrane transport processes and entered graduate school in the Department of Physiology and Pharmacology at Duke, where he initiated his studies on the energetic support of ion transport in epithelia with Lazaro Mandel. After completing his thesis in 1979, Bob was awarded a NATO Fellowship to the University of Oxford to work with George Radda on the newly reported NMR spectroscopy techniques to noninvasively monitor tissue metabolites, in vivo, to complement his optical approaches. He secured his staff position at the Laboratory of Kidney and Electrolyte Metabolism at the National Heart, Lung, and Blood Institutes (NHLBI) at the National Institutes of Health (NIH) with Jack Orloff and Moe Burg before taking the Oxford position. Upon returning to the States, Bob set up in vivo NMR programs at the NIH. Bob was elected the president of the two major international societies in MRI, the International Society for Magnetic Resonance in Medicine and the Society for Cardiovascular Magnetic Resonance. Recently, Bob’s primary interests have returned to the study of the regulation of the mitochondrial function. He is taking a systems biology approach to the problem, including classical biochemical approaches, multi-parameter optical spectroscopy, as well as numerous proteomic approaches. A major effort is in intra-vital high resolution multi-photon excitation microscopy to monitor mitochondrial function complementing the lower resolution NMR studies work. In parallel to his laboratory activities, Bob became the Scientific Director of the Basic Laboratory programs at the NIH in 1999. The position was expanded to include oversight of the clinical programs in 2005. In this role, he oversees and evaluates scientific programs ranging from basic structural biology and cell biology to clinical research.

Photo courtesy of R. S. Balaban
Olga Boudker

Olga has substantial experience in the structure and function of membrane transporters. Her main contributions have been in understanding the mechanism of sodium-coupled aspartate transporter, a bacterial homologue of the mammalian glutamate transporters. For this transporter, her group has determined the crystal structures of several functional states, revealing an unusual and novel mechanism of transport. Furthermore, they have captured crystallographically a transport intermediate, demonstrating that such intermediates may acquire additional functions, such as mediating anionic fluxes. Recently, they have determined a series of new structures revealing the mechanism of the transporter gating and coupling between the substrate and coupled ions binding (unpublished data). They are currently also actively involved in the analysis of the transporter energetics and dynamics. An extensive thermodynamic study has revealed the mechanism by which sodium ions drive the uptake of the substrate, showing that the chemical potential of ions drives substrate binding and not translocation. Using EPR spectroscopy, Olga’s group has examined the relative energies of the key functional states, showing that the states in which the substrate-binding site is accessible from the opposite sides of the membrane are nearly iso-energetic. Using single-molecule fluorescence imaging methods, they have investigated the dynamics of the conformational transitions, revealing unexpected complexity. Efforts toward the determination of the crystal structures of other as yet structurally uncharacterized membrane proteins are under way. Photo courtesy of O. Boudker.

Lucy R. Forrest

Lucy studied chemistry at the University of Surrey, UK, with a minor in computing. She was introduced to the world of molecular modeling during a year-long industrial placement at Eli Lilly’s research site in Windlesham, Surrey, attempting to identify replacements for Prozac, though, sadly, in the absence of structural information about its target, the serotonin transporter. After obtaining her BSc in 1997, she moved to Oxford to simulate and model membrane proteins in lipid bilayers, trying to understand proton channels, and to predict the number of subunits in the ATP-synthase c-ring, supervised by Mark Sansom. Lucy received her PhD in 2000 and was awarded a Fulbright/Royal Society Fellowship that she spent as a postdoc in Tom Woolf’s laboratory at Johns Hopkins School of Medicine, where she focused on methods to model protein structure. After a second brief postdoc with John E. Walker in Cambridge, predicting aspects of Complex I structure, she moved to New York City in 2003, to work at Columbia University Medical School with Barry Honig on membrane protein structure prediction methods. By coincidence, in 2005, a laboratory in the same department solved the structure of a homologue of serotonin transporter, giving Lucy an exciting opportunity to think again about neurotransmitter transport. Since then, Lucy’s independent research has focused on secondary transport mechanisms, starting in 2007 in Frankfurt at the Max Planck Institute of Biophysics, and moving to the National Institutes of Health in 2013, where she is currently an Investigator with the National Institute of Neurological Disorders and Stroke. One of her particular interests is in the role of (pseudo-)symmetry in transport mechanisms, although she uses computational modeling and simulation methods to address a range of other questions relating to secondary transport. Photo courtesy of L.R. Forrest.

Claudio F. Grosman

Claudio received his BS and MS in biochemistry from the University of Buenos Aires, Argentina. In 1996, he received his PhD in biophysics from the same institution, working with Ignacio Reisin on ion channels from syncytial epithelia (that is, epithelia that lack intercellular membranes, and hence, paracellular pathways).
Soon thereafter, Claudio joined Tony Auerbach’s laboratory at the University at Buffalo for postdoctoral work on the muscle nicotinic acetylcholine receptor; it was from this interaction that the notion of ion channel gating occurring as a “wave” of conformational change emerged. In 2002, Claudio joined the faculty of the University of Illinois at Urbana-Champaign where he has continued working with neurotransmitter-gated ion channels with an emphasis on quantitative and creative electrophysiological approaches, and more recently, x-ray crystallography. He became Professor of Molecular & Integrative Physiology, Biophysics and Neuroscience in 2012. Photo courtesy of C. Grosman

Johannes Reisert
Johannes never quite finished his degree in physics at Siegen University, Germany, but instead headed to Cambridge University, UK, to begin (and actually finish) a PhD in the Department of Physiology. Thrown into a field Johannes had never heard of before by his courageous PhD supervisor Dr. H.R. Matthews, a man with a vision, he began to study how mouse and frog olfactory receptor neurons (ORNs) code for odorant stimulation. Because he was having too much fun with olfaction, this extended into a postdoc with a focus on Ca2+ homeostasis mechanisms in ORNs by simultaneously recording odorant-induced electrical responses and Ca2+ transients in tiny olfactory cilia, the actively odorant-transducing cellular compartment in ORNs. After a quick detour via Germany to work with Dr. S. Frings at Juelich, Johannes joined the laboratory of Dr. K.-W. Yau at Johns Hopkins University School of Medicine in Baltimore to focus on Cl− homeostasis mechanisms in ORNs. As not only sitcom fans might know, it is always sunny in Philadelphia, so he joined the faculty of the Monell Chemical Senses Center in 2005, where he still does not quite understand how ORNs actually work.

Timothy A. Ryan
Tim, a native of Canada, received his BSc and MSc in physics at McGill University in 1983 before heading south for the balmier climate of Ithaca, NY, where he performed his PhD in the physics department at Cornell University in the laboratory of Watt W. Webb. He then discovered that even nicer weather could be found in Palo Alto, CA, where he joined the laboratory of Stephen J. Smith at Stanford University and developed approaches for characterizing various aspects of the presynaptic vesicle cycle. He started his own laboratory in 1997 in the biochemistry department at the Weill Cornell Medical College in New York City, where he is a Rockefeller/Sloan-Kettering/Cornell Tri-Institutional Professor. He was named a Sloan Fellow in neuroscience and has twice received the McKnight Technological Innovations in Neuroscience Award (in 2000 and 2010). His laboratory develops quantitative tools and approaches for studying the biology of presynaptic terminals and recently appreciated the importance of ion channels in this system (who knew?)). Photo courtesy of T.A. Ryan

Jon T. Sack
Jon earned his BA in biochemistry and molecular biology from Reed College in 1997. He subsequently pursued his PhD with William Gilly at the Hopkins Marine Station of Stanford University, where he investigated how ion channel voltage sensing is modified by a gastropod’s defensive mucus. Jon next moved to Richard Aldrich’s laboratory at Stanford proper and enjoyed a wonderful opportunity to conduct ion channel gating research. In 2006 he went overseas as Fulbright Scholar of the Marine Institute of Ireland, where he searched for neuroactive substances in the ocean. He stayed on as faculty of Dublin City University and investigated the potential of dendrotoxins to selectively target ion channel heteromers. Having helped bring snake toxins back to Ireland, he returned to America and joined the Department of Physiology and Membrane Biology at the University of California, Davis, as an Assistant Professor in 2011. Jon has also been on the faculty of the neurobiology summer course at the Marine Biological Laboratory in Woods Hole since 2008. Research in the Sack laboratory focuses on developing novel means of controlling and visualizing ion channel function. Photo courtesy of J.T. Sack

R. John Solaro
John received his PhD in physiology from the University of Pittsburgh in 1971. In 1972, he was appointed Assistant Professor of Physiology at the Medical College of Virginia. As a British-American Heart Fellow in 1975–1976, he worked with S.V. Perry at the University of Birmingham in England. He moved to the University of Cincinnati in 1977 and then to University of Illinois at Chicago in 1988, where he has been Distinguished University Professor and Head of Physiology and Biophysics. John was the holder of an NHLBI Merit Award still funded as an RO1, is MPI on another RO1, and is PI of an NIH Training Grant and a program project grant on Maladaptation in Heart Failure. He has served as a chartered member of the NIH Physiology Study Section and chaired two other study sections. He is past Secretary General of the International Society for Heart Research and past president of the Cardiac Muscle Society.
and the Association of Chairs of Physiology. John’s research aims at integrating molecular and cellular mechanisms at the level of sarcomeres into mechanisms controlling cardiac dynamics. His work addresses how these mechanisms are altered by pathological conditions leading to heart failure and by pharmacological interventions. A focus of the research is on signaling cascades to sarcomeric proteins inducing posttranslational modifications. Z-disk signaling from the sarcomeres is another area of interest. His seminal studies on sarcomeric proteins as targets for small molecules acting as inotropic agents generated work in biotech in the successful development of sarcomeric activators useful in heart failure.

Sergei Sukharev
Born and raised in Moscow, Russia (then USSR), Dr. Sukharev received a BS/MS degree in biology/bio-physics from Moscow State University in 1980. Beginning his doctorate studies, he was a research fellow at the Laboratory of Bioelectrochemistry at the Frumkin Institute of Electrochemistry of the Academy of Sciences. Under the guidance of Professor Yuri A. Chizmadzhev, he completed a graduate project on Electromechanical Stability of Membranes and in 1987 received his PhD in biophysics from Moscow State University. Between 1991 and 1997, Dr. Sukharev continued his postdoctoral training at the University of Wisconsin-Madison with Professor Ching Kung where he succeeded in the isolation and characterization of the first bacterial mechanosensitive channel, MscL. Since 1997, he has been a faculty member of the Department of Biology, University of Maryland-College Park, where he conducts interdisciplinary research focused on the biophysics of mechanosensitive channels, membrane biophysics, and bacterial osmoregulation. He is also the co-director of the Biophysics Graduate Program at UMD.

Jie Zheng
After completing BS and MS degrees in physiology and biophysics at Peking University, Beijing, China, Jie worked with Fred Sigworth at Yale University. He completed his PhD in 1998 and then spent four years as a postdoctoral fellow with Bill Zagotta at the University of Washington. He is now Professor of Physiology and Membrane Biology at UC-Davis. The research focus of his laboratory in recent years has been the activation mechanisms of temperature-sensitive TRP (thermoTRP) channels, in particular TRPV1. Jie’s approach has been multidisciplinary, including patch-clamp electrophysiology, optical methods including patch fluorometry, FRET, and Ca$^{2+}$ imaging, and in the last two years, Rosetta-based structural prediction (in collaboration with Dr. Vladimir Yarov-Yarovoy). Jie has studied ion channels for over 20 years on the activation mechanisms of voltage-gated potassium channels, ligand-gated CNG channels, and thermoTRP channels.