

The state of the community: JGP in 2017

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Amid a difficult year for science and scientists, *The Journal of General Physiology* is thriving and gearing up for its 100th anniversary celebrations.

2016 was a rough year for science as well as for many scientists. Recent events have brought to prominence individuals who downplay the role that evidence and facts should play in decision making in the public sphere (Davies, 2016). In much of the world, funding for science is in decline (FASEB, 2016; The Guardian, 2016). Increasing retractions shake community trust (Steen et al., 2013). Scientists in training face the worst situation, in which they are framed as “lost” if they pursue scientific careers outside of academia, invalidating their legitimate career goals (Taylor et al., 2016), while institutions do little to prepare them for nonacademic careers (Sauermann and Roach, 2012).

As a community-based enterprise, JGP can help to create a space for celebrating our achievements and providing clarity amid the chaos. We do this by living our shared values: holding rigorous, careful science in high regard; mentoring junior scientists as authors and reviewers; collaborating with authors, reviewers, and readers alike to better identify and serve the needs of the community; and building trust by offering a fair, timely, and constructive review process. We continue to invest in JGP because we need JGP, and other journals like it, and we find inspiration and purpose in being part of a community that cares about the future of scientists and the science they create.

We could not achieve this without the support of our Editorial Advisory Board. The new cohort of Board members, whose short biographies and photos follow, reflect three major areas of focus that we wish to strengthen in the journal. Computational physiology has already received an important boost with the addition of José Faraldo-Gómez as Associate Editor. This effort will be reinforced in 2017 by the addition of computational physiologists Doug Tobias, Régis Pomès, Avner Schlessinger, Jochen S. Hub, Lucie Delemotte, and D. Peter Tieleman to the Board. A second priority is to strengthen the membrane physiology tradition of JGP by adding members working at the apex of membrane physical chemistry and physiology: Lukas Tamm, Sarah Veatch, and Janice Robertson. Outreach to our colleagues in Asia is our third area of focus, and I am pleased to have recruited top Asia-Pacific scientists

to our group: Ru-Chi Shieh, Jianhong Luo, Hailin Zhang, Renae Ryan, and KeWei Wang. We also add Tim Jegla as our expert in evolution of membrane proteins, helping us to remember that we should learn from the past in order to move forward.

Editorial Advisory Board members are not just glorified reviewers. We depend on them to tell us what is going on in their fields, recommend meetings that we should attend or sponsor, identify authors whose work we should recruit, recommend postdoctoral fellows to join our postdoc reviewer program (<http://jgp.rupress.org/about#postdocs>), point out areas in which review articles are needed, participate in focus groups, submit their work to the journal, and, most importantly, act as ambassadors for JGP to broaden and strengthen our community. Our Editorial Advisory Board members are, of course, our eyes and ears in the community, but they are also our brain and our heart. We welcome all of our new members and thank them for believing we can, together, change the world.

As we continue to grow, we also continue to improve our services. During 2016 we streamlined the user interface to our manuscript tracking service and made several improvements to the submission process, including accepting manuscripts from bioRxiv and other preprint servers, allowing format-neutral first submissions, seamlessly transferring manuscripts between RUP journals, and considering reviewer reports from other journals (while allowing our reports to be ported to other journals). We also implemented enhancements to the review and decision-making processes, creating a 2-d window for reviewers to view each other's reports, including an option to edit their own and improving decision letters to give customized, specific guidance to authors.

Have you noticed our new website design? It is cleaner and more modern, and it loads much faster than before. In addition, we have reorganized and rewritten our Information for Authors to be clearer and to reflect current policies and procedures. Accepted papers are now published daily, decreasing time from acceptance to

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publication. To increase transparency, we now provide statistics on turnaround times for decisions and publication on our website.

2016 was a great year for JGP, and 2017 looks even better! This issue includes the first installment of Research News (see Sedwick), a new feature that highlights interesting research in a brief and accessible format. We are also gearing up for our 100th anniversary. The first issue of JGP was published on September 20, 1918, and the official announcement began, “*The Journal of General Physiology* is intended to serve as an organ of publication for papers devoted to the investigation of life processes from a physiochemical view-point. As the constitution of matter is the main problem of physics and physical chemistry so the constitution of living matter is the main problem of general physiology, and in both cases the method of quantitative experimentation is required.” I could not better describe the scope of JGP today. We are planning a year of celebrations to recognize our history, its contribution to our present, and the bright future ahead for our community.

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New JGP Editorial Advisory Board members



Lucie Delemotte

Lucie Delemotte is assistant professor in computational biophysics at the Royal Institute of Technology KTH in Stockholm, Sweden. She joined as a Science for Life Laboratory Fellow in February 2016, after receiving a PhD in Computational Chemistry from the Université de Lorraine, Nancy, France in 2011 and was a Marie Curie postdoc fellow at the Institute for Computational Molecular Science of Temple University, Philadelphia, PA and at the Laboratory of Computational Biochemistry and Chemistry of the École Polytechnique Fédérale de Lausanne, Switzerland. She mainly works on shedding light onto the molecular details of ion channel function and modulation using computational methods. In particular, using large-scale molecular dynamics simulations, she has focused on characterizing the thermodynamics and kinetics of processes of several ion channel superfamilies, with a particular focus on voltage-gated channels. A major theme of her research focuses on allosteric regulation of ion channels and how to efficiently study processes that take place over time and length scales that are currently beyond the reach of traditional all-atom simulations. She enjoys working in collaboration with scientists from diverse experimental backgrounds and strives to build bridges across theoretical, computational, and experimental disciplines. Photo courtesy of SciLifeLab.



Jochen S. Hub

Jochen received a degree in physics at the University of Stuttgart (Germany) in 2004. He did his doctoral studies with Bert de Groot at the Max Planck Institute for Biophysical Chemistry in Göttingen, working on molecular dynamics simulations of aquaporin channels. He did postdoctoral training with David Van der Spoel at Uppsala University (Sweden), with a focus on solvation of ions, yet keeping interest in membrane channels. Jochen established his own group at Georg August University Göttingen in 2012, funded by the Emmy-Noether program of the German Research Foundation. His group develops and applies computational methods related to molecular dynamics simulations. His research interests include various aspects of membrane biophysics, as well as methods for the interpretation of experimental data based on molecular dynamics. Photo courtesy of Jochen S. Hub.



Tim Jegla

Tim Jegla is an Associate Professor of Biology at Penn State University in State College, PA. He received his PhD in Anatomy and Neurobiology at Washington University in St. Louis where he studied ion channel evolution under Dr. Larry Salkoff and did postdoctoral training under Dr. Richard Aldrich at Stanford University. He spent a few years in the pharmaceutical industry working on ion channel drug discovery before returning to academia. In his position at Penn State, his focus has returned to the evolution of ion channels and neuronal signaling. Current projects center on the functional evolution of neuronal ion channels and on the evolution of key neuronal structures such as dendrites and axons. His lab also maintains an interest in ion channel biophysics, looking at how cellular factors influence gating across the breadth of the eukaryotic kingdom. Model systems currently used by his lab include plants, flies, and sea anemones. Photo courtesy of Tim Jegla.



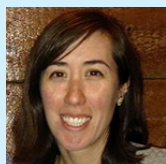
Jianhong Luo

Jianhong received his PhD in Pathophysiology from Zhejiang Medical University and did his postdoctoral training at Georgetown University in Washington, DC. Since 2000, he has been a professor in the Department of Neurobiology at Zhejiang University School of Medicine in Hangzhou, China. He has worked on ionotropic glutamate receptors, especially NMDA receptors, including molecular mechanism for subunit assembly, membrane trafficking, regulation of synaptic function, and pathological relevance. Photo courtesy of Yongze Zhou.



Régis Pomès

Régis studied chemistry at École Supérieure de Chimie Industrielle de Lyon, France, where it became apparent that the only chemistry safe enough for his hands was computational. He then moved to Texas to pursue a PhD in Theoretical Chemistry at the University of Houston, training in biomolecular simulations with Andy McCammon. He continued his training as a postdoctoral fellow, first at Université de Montréal with Benoît Roux and subsequently at Los Alamos National Laboratory with Ángel García. In late 1999, he relocated to Toronto, where he established his lab at the Hospital for Sick Children with a cross appointment at the University of Toronto. He received a Canada Research Chair in Physical Chemistry in 2001. His group is developing and applying computational methods to study biomolecular systems. His research interests include the solvation, folding, non-folding, binding, and aggregation of proteins, with a special focus on the structure and function of ion channels and other membrane proteins. Photo courtesy of Hospital for Sick Children.



Janice Robertson

Janice Robertson is an Assistant Professor in the Department of Molecular Physiology and Biophysics at the University of Iowa. She received her Honours Bachelor of Science degree from the University of Toronto in the subject of Theoretical Physiology, the study of math and physics applied to physiological systems. She then joined the laboratories of Benoît Roux and Larry Palmer at the Weill Cornell Graduate School of Medical Sciences to carry out her PhD research studying ion channels using computational approaches. From there, she joined the laboratory of Christopher Miller at HHMI, Brandeis University and dove into the study of membrane protein biochemistry from an entirely experimental approach. Now, in her own lab, she integrates both experiments and theory to study the physical forces that drive membrane protein folding and oligomeric assemblies within cell membranes. To do this, her laboratory integrates a variety of experimental techniques, including membrane protein reconstitution and single-molecule TIRF microscopy together with theoretical computational modeling. Photo courtesy of Kiran Sah.



Renae Ryan

Renae Ryan received her BSc (Hons I) and PhD from the University of Sydney, Australia. Her doctoral work focused on understanding the dual transport and channel properties of human members of the glutamate transporter family. In 2004, she moved to the USA as a postdoctoral fellow, where she worked with Eric Gouaux (Columbia University) and Joe Mindell (NINDS/NIH) on the structure and function of a prokaryotic homologue of the human glutamate transporter family (Glt_{pr}). In 2007, Renae returned to Australia and, in 2010, was appointed as Associate Professor in the Sydney Medical School. Her work in Sydney is focused on understanding the molecular mechanisms of a range of neurotransmitter and amino acid transporters. She is also developing new therapeutics that target these transporters to treat diseases such as chronic pain and cancer. Photo courtesy of the University of Sydney.



Avner Schlessinger

Dr. Avner Schlessinger is an Assistant Professor of Pharmacological Sciences at the Icahn School of Medicine at Mount Sinai (ISMMS) in New York City. Dr. Schlessinger obtained his BSc in Chemistry and Biology from Tel Aviv University in Israel. Following his undergraduate studies, he moved to New York to pursue his PhD in Dr. Burkhard Rost's lab in the Department of Biochemistry and Molecular Biophysics at Columbia University. As a PhD student, he developed programs predicting disordered regions in proteins from their amino acid sequence, using machine-learning algorithms such as artificial neural networks, and applied these methods to analyze big data (e.g., proteomes). Dr. Schlessinger then became an NIH NRSA postdoctoral fellow with Dr. Andrej Sali at the Department of Bioengineering and Therapeutic Sciences, University of California, San Francisco (UCSF), where he advanced methods for protein structure prediction and structure-based drug design and utilized these methods to characterize a variety of biomedically important human solute carrier (SLC) transporters. In January 2013, Dr. Schlessinger joined the faculty at the ISMMS. The two major objectives of his laboratory are to improve and automate the structure-based drug discovery process by developing and applying computational approaches and to collaborate with experimental labs to characterize disease related pathways, with a long-term goal of designing novel drugs. Photo courtesy of Mount Sinai Health System.



Ru-Chi Shieh

Ru-Chi Shieh is a Research Fellow of the Institute of Biomedical Sciences at Academia Sinica, Taiwan. She received her Bachelor's Degree in Physics from National Taiwan University and her PhD in Pharmacology from the University of Rochester. After her postdoctoral training at UCLA, she was appointed as an Assistant Research Fellow at Academia Sinica. Her research interests are ion permeation in K⁺ channels, membrane fluorescence, and interactions of ion channels with membrane receptors and PIP₂. Photo courtesy of Fang-Bi Chang.



Lukas Tamm

Lukas Tamm is the Harrison Distinguished Professor and Vice-Chair in the Department of Molecular Physiology and Biological Physics at the University of Virginia. He received his undergraduate and graduate training at the Biocenter of the University of Basel, Switzerland and did postdoctoral work at Stanford University with Harden McConnell. After five years as a junior faculty member at the Biocenter in Switzerland, he moved in 1990 to his current position at the University of Virginia. Lukas works on membrane protein structure and lipid-protein interactions using NMR and single molecule fluorescence techniques. As a post-doc, he was the inventor of supported membranes, and as a faculty member, he was the first to solve the structure of a larger membrane protein by NMR. Current interests include membrane fusion in virus entry and SNARE-mediated exocytosis, as well as function and antibiotic resistance of bacterial outer membrane transporters. In 2017/18, he serves as President of the Biophysical Society. Photo courtesy of the University of Virginia Health System.



D. Peter Tieleman

Peter studied chemistry and philosophy at the University of Groningen where he was a PhD student with Herman Berendsen. He was an EMBO postdoctoral fellow with Mark Sansom in Oxford before joining the University of Calgary in 2000, where he is currently a professor in Biological Sciences and Director of the Centre for Molecular Simulation. His research interests include problems related to membrane structure and dynamics, lipids, membrane proteins, biomolecular simulation methods, and multiscale methods to link structure and function in biomolecules. Photo courtesy of Chris Bolin.



Doug Tobias

Doug Tobias is Professor of Chemistry at the University of California, Irvine. He obtained his PhD in Chemistry and Biophysics from Carnegie Mellon University in 1991, under the supervision of Charles L. Brooks III, and he did postdoctoral research in the laboratory of Michael L. Klein in the Department of Chemistry at the University of Pennsylvania from 1991 to 1995. After spending two years as a Guest Researcher in the NIST Center for Neutron Research at the National Institute for Standards and Technology, he was appointed to the faculty at UC Irvine in 1997. Doug's research involves using atomistic and coarse-grained computer simulation techniques based on classical and quantum mechanics to model the structural, dynamical, and thermodynamic aspects of biomolecular function. A substantial portion of his work is devoted to the development and implementation of novel simulation methodology and analysis tools. His current research interests include membranes and membrane proteins, with an emphasis on water channels and voltage-sensitive ion channels. Photo courtesy of Donald Dabdub.



Sarah Veatch

Sarah Veatch received her Bachelor's Degree in Physics from MIT and PhD in Physics from the University of Washington and is currently an Assistant Professor of Biophysics and Physics at the University of Michigan. In her PhD and postdoctoral work, she mapped miscibility phase diagrams of ternary lipid mixtures and characterized critical fluctuations in both purified membranes and compositionally complex isolated plasma membrane vesicles. Her current research centers around how mammalian cells exploit the mixing behavior of lipids to accomplish biological functions at the plasma membrane. Current research projects include studies on how lipid domains sort proteins involved in immunoreceptor activation and how some ion channels are allosterically regulated by the availability of local lipid environments. Photo courtesy of Melissa Squires.



KeWei Wang

KeWei Wang graduated with an MD in Medicine and obtained his PhD in Neurophysiology from Peking University Medical School in 1988. From 1988 to 1997, he went to the University of Cambridge and then Yale University for postgraduate studies/training in the disciplines of pharmacology, biophysics, and physiology. From 1997 to 2005 as a principal scientist/team leader at Wyeth Neuroscience, Princeton, he worked on ion channel targets related to drug discovery/research for pain and pain-related neurological disorders. In 2005–2014, KeWei Wang became as an endowed ChangJiang Professor of Medical School and Chair of the Department of Molecular and Cellular Pharmacology at Peking University. In 2014, he moved to Qingdao University and currently serves as the Dean of the School of Pharmacy. His overall research in the lab is directed toward understanding structure and molecular mechanisms of ion channels and identifying and validating ion channel targets that are helpful for proving therapeutic potential for neuropsychiatric disorders. Currently, two classes of ion channels, voltage-gated potassium (Kv) and ligand-gated TRP channels, are investigated for their roles in neurophysiology and pathology in the brain using cutting-edge technologies such as patch clamping electrophysiology and confocal Ca^{2+} /FRET imaging with a combination of molecular biology and in vivo pharmacology.



Hailin Zhang

Hailin is currently a professor at the Department of Pharmacology, Hebei Medical University, China. He was medically qualified in China and then did his graduate work and got his PhD degree in 1995 in St. George's Hospital Medical School, University of London, supervised by Thomas Bolton. His thesis work was on the K_{ATP} potassium channels in vascular smooth muscle cells. He then moved on and did his postdoctoral training at Mount Sinai School of Medicine, New York, supervised by Bob Margolskee and Diomedes Logothetis at HHMI and Department of Physiology and Biophysics, working on taste signaling mechanism. He then continued his postdoctoral training with Diomedes Logothetis and studied membrane phosphatidylinositol regulation of potassium channels. He moved back to China and took a professor position and later became the Chairman at the Department of Pharmacology, Hebei Medical University. He has also been the Vice Dean of the School of Pharmaceutical Science and Dean of the School of Basic Medical Science and is currently the Vice President of Hebei Medical University. His current major research interests are ion channel modulation and its physiological and pathophysiological significance, with special interest in the role of ion channels in sensory and pain signaling and in neuropsychological disorders. Photo courtesy of H.L. Zhang.