

## The Biophysicist: Introductory Editorial

Sam Safran (Weizman Institute of Science)

Editor-in-Chief

Together with our entire Editorial Board, I am very happy to welcome you, the readership, to the first issue of the new Biophysical Society publication on biophysics education, *The Biophysicist*. The journal focuses on all levels at which biophysics learning and teaching take place—formally or informally: secondary education and community colleges, 4-year colleges, and university settings (including undergraduate, graduate, and postgraduate learners) as well as active researchers in the field. Scholarly communities in chemistry, physics, and biology education are well established. However, the uniquely interdisciplinary, pedagogical challenges of biophysics—for both students and teachers—have not yet been addressed from an academic point of view in today's publication landscape. One important goal of our journal is to provide resources and research studies that will help nurture and develop both practices and concepts to delineate the field of biophysics education. Research Articles, such as those included in this introductory issue, provide new theoretical, lab-based, or computational teaching materials and methods. Articles will also include studies of biophysics teaching and student learning based on empirical learning research and educational scholarship. Another aim of the journal is to focus on the people involved in biophysics education. Brief Reports of student-oriented conferences and workshops, first-person essays on teaching and mentoring, outreach to young students and the public, and a student forum will add an additional dimension to education in our field. We invite you to take an active part in our journal by submitting Research Articles and Reports in your respective areas of expertise and to participate in peer review if you are asked to referee submissions. Many in the biophysics research community may not previously have thought of writing about their educational experiences; however, your collective wisdom and knowledge of classroom teaching and mentoring students and young researchers in lab, computational, or community settings will contribute to our journal and a growing awareness of best practices and research in biophysics education. Indeed, our outstanding Editorial Board represents the diversity I have mentioned. It is my privilege to share some of their thoughts with you.

*Gundula Bosch (Johns Hopkins University, Bloomberg School of Public Health):* Every science practitioner in the wide arena of biophysics and related disciplines is an educator. Just as we apply rigor to our research approaches, we aim to apply high standards to our educational activities as we support the next generation of scientists to enter the workforce and communicate research findings to the public. By sharing our methods and experiences in biophysics

education with the community in the field and beyond, we enable our colleagues, as well as our students and trainees, to learn about novel teaching strategies and to innovate educational portfolios, collaboratively advancing and expanding the field of biophysics education. As a trained biochemist and graduate science program director, I experience, on a daily basis, how much my research methodology advances through a structured and informed approach to teaching and writing about my teaching. I encourage all our colleagues and particularly our students, trainees, and fellows to become authors and help grow our mutually supportive community of biophysics education enthusiasts!

*Andrew Feig (Research Corporation for Science Advancement):* Biophysics lies at a crossroad of physics, biology, chemistry, and mathematics, encompassing elements from these disciplines and more. For that reason, in many programs, students don't encounter biophysics itself until late in the undergraduate curriculum. This structure is unfortunate because it outsources the foundational curriculum to other departments and prevents the field from fully shaping student perspectives. As biophysicists, we must work harder to interact with the faculty who teach foundational courses in all these fields to help instill the core thought processes and skills of our field into the foundational curriculum. I am thrilled to be part of this exciting new project because *The Biophysicist* provides us with a forum to discuss not just advanced biophysics courses but also to provide examples of educational activities and the study of student learning; modules that complement each of our partner disciplines can be incorporated into courses that span these areas. I hope this dialogue will draw in not just biophysicists, but also our chemistry, physics, and biology colleagues interested in promoting collaboration and interdisciplinarity among the next generation of scientists.

*Wolfgang Losert (University of Maryland):* I am delighted to contribute to the start of this exciting new journal. Research at the forefront of biophysics leverages an amazingly broad and interdisciplinary range of new experimental, numerical, and theoretical tools. While this rapid adaptation of new tools enables biophysicists to shed new light on the rules of life, it also requires lifelong learning from the biophysics community. I look forward to being a part of *The Biophysicist* both as an educator, contributing my expertise in the dynamics of living systems, and as a student of the new areas of biophysics.

*Phil Nelson (University of Pennsylvania):* As educators, we all strive to keep our students engaged and excited with illustrations of recent research and new techniques, while also giving them the solid grounding in the classic scientific foundations needed to understand recent developments. I'm excited to be joining a new enterprise that will offer an exchange of ideas about how to address what works for various kinds of audiences. I look forward to learning about things I can say to undergraduates, to graduate students, to primary and secondary students, and to the public at large.

*Les Satin (University of Michigan, Medical School):* I would like to add my personal welcome to that of our Editor-in-Chief. My particular interests are concerned with ion channel biophysics and the calcium signaling mechanisms of cells. As an experimentalist who collaborates with theoreticians and as a long-time graduate school educator in a medical school, I especially welcome articles about classic biophysics experiments, as well as discussions of new research approaches and techniques. Our scope is very broad!

*Patricia Soto (Creighton University):* I envision *The Biophysicist* as a venue that will merge our understanding of "doing biophysics" with the research-based scholarship of teaching and learning at the interface of the physical and life sciences. As faculty at a primarily undergraduate institution, I am eager to share, learn about, and implement best practices in training and mentoring research undergraduates and in curricular development that transforms the learning of biophysics. I foresee that the contributions to *The Biophysicist* will scaffold the educational experience I offer my students to respond to the scientific and cultural competence demands of the biophysical community and the science, technology, engineering, and math workforce.