

EDITORIAL

Proceedings of the Faculty for Undergraduate Neuroscience Workshops at Ithaca College, Ithaca, NY, July 30 – Aug 3, 2014

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We dedicate this *JUNE* volume of FUN workshop papers to Carol Ann Paul, who was a Senior Instructor in the Neuroscience Laboratories at Wellesley College. She died in October, 2014 (obituary in the Boston Globe: <http://www.legacy.com/obituaries/bostonglobe/obituary.aspx?pid=172961092>). For more details on Carol Ann and her contributions to Neuroscience, please see the Editorial in this *JUNE* issue.

The Faculty for Undergraduate Neuroscience has sponsored six previous workshops focused on helping faculty develop and sustain neuroscience programs at undergraduate colleges and universities. For our seventh workshop, held at Ithaca College, we focused on a variety of issues that continue to challenge our membership. The world of neuroscience education continues to broaden, and with it, enrollment pressures are increasing across institutions, while budgets are constrained. Alongside discussion and presentation of innovative classroom and laboratory exercises, in a wide range of sessions, participants explored issues focusing on both the profession and the curriculum, including assessment of program effectiveness, incorporation of study abroad into student plans, and development of faculty leadership skills to ensure the sustainability and resilience of our undergraduate education programs in neuroscience for the future.

This *JUNE* volume contains contributions from presentations at the 7th triennial Faculty for Undergraduate Neuroscience (FUN) workshops, hosted by Jean Hardwick (Ithaca College) and Bruce Johnson (Cornell University) in Ithaca, NY, in 2014. Two workshops were held at Ithaca College, a “Preworkshop Intensive Laboratory Experience” co-hosted by the Department of Neurobiology and Behavior at Cornell University, and the main workshop entitled “Undergraduate Neuroscience Education: Challenges and Solutions in Creating and Sustaining Programs.” A full listing of the presentations at the 2014 FUN Workshops can be found at http://www.funfaculty.org/drupal/Conference_2014_Ithaca.

In addition to the presentation articles summarized here, the 2014 workshop included a new event this year; a poster session of presentations by attendees on a variety of topics ranging from laboratory exercises to curricular innovations. A full listing of the abstracts from this session can be found at <http://www.funfaculty.org/drupal/sites/funfaculty.org/files/What%20Works%20Abstract%20listing.pdf>. We hope that many of these will lead to future *JUNE* articles.

The articles in this volume summarize presentations during the two workshops that were submitted for this special *JUNE* workshop edition. Other presentations not appearing in this *JUNE* edition will be encouraged for submission as future *JUNE* articles. The articles for the current issues include several laboratory exercises, curricular and teaching innovations, and faculty development-related topics. For laboratory exercises, we start off with an article on using open software and smartphones or tablets to collect and analyze locomotion data (Conklin, Lee, Schlabach and Woods). The next exercise describes a developmental laboratory using zebrafish and microscopy to create research projects for student laboratories (Marra, Tobias, Cohen, Glover, and Weissman). Next are two electrophysiology labs that use invertebrates to study neurophysiological functions. The first uses optogenetics in *Drosophila* for both behavioral and neurophysiological experiments (Titlow, Johnson, and Pulver) and the second combines ecology with electrophysiology to study the retinal responses among different invertebrates caught in the wild (Stowasser, Mohr, Buschbeck and Vilinsky). Moving up to human physiology, the next article describes a laboratory exercise to monitor postural reflex responses (Colgan). The last laboratory exercise is a free computer model for molecular neuroscience (Gel Scramble) designed by Grisham, Keller, and Schottler at the University of California at Los Angeles. For those looking for resources for teaching, the next article delves into recent developments of the portal ERIN, a source for pre-screened web links and resources related to Neuroscience teaching (Olivo et al.). The next article gives instructions for individuals looking to create their own videos for teaching or research, with detailed information on technology and filming (Wyttenbach). To explore new ideas in classroom teaching, an article by Illig discusses technology and methods to promote critical thinking. Along the theme of teaching innovations, the article by Round and Lom describes fusing labs and lectures in the classroom to enhance teaching scientific research. For those teaching classes to non-science majors, McFarlane and Richeimer describe their technique of using humanities to teach neuroscience.

We have several articles related to best practices in neuroscience, at both the programmatic and faculty development level. The first of these articles summarizes many of the issues discussed in our plenary session on the retention and support of minority faculty. This article includes both historical data and practical suggestions

(Whittaker, Montgomery and Acosta) to help departments and institutions work to improve in this important area. Next, we have two articles focusing on Best Practices in Neuroscience education. These come from two programs chosen as “Undergraduate Programs of the Year” by the Society for Neuroscience Committee on Neuroscience Departments and Programs. The first of this series is from Baldwin Wallace College and discusses programs they’ve developed on peer mentoring and program development within the institution to promote undergraduate neuroscience education (Morris et al.). The next is from Central Michigan University with discussions of undergraduate program and the development of a new graduate program in Neuroscience (Dunbar). The next article describes how one lab at a large research university can successfully incorporate multiple undergraduates into an active research laboratory (Weldon and Reyna). To explore areas of importance to faculty at various points in their career, the next article summarizes the workshop session of career transitions for faculty in undergraduate neuroscience education (Dunbar). In particular, this article

summarizes some key areas of concern for junior faculty and ideas to help these faculty succeed as they proceed in their career trajectory. Another example of program development is the expansion of undergraduate neuroscience to global and international learning (Ruscio, Korey, and Birck). Finally, the last article describes assessment methods for neuroscience programs (Muir).

The 2014 Workshop was made possible by generous support from several organizations and sponsors, including Ithaca College, Cornell University, the Society for Neuroscience, ADInstruments, and Backyard Brains. The Society for Neuroscience provided support to help promote the presentations and articles related to Best Practices in Neuroscience Education as a part of the society’s ongoing mission to enhance and support neuroscience education. This FUN workshop also received significant support from ADInstruments, which has generously supported FUN workshops for many years.