

## EDITORIAL

# Articulating the Dual Role of Undergraduate Neuroscience Education: What FUN and the Society for Neuroscience Can Do

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The growth of the Faculty for Undergraduate Neuroscience Education has been phenomenal. Just using the annual SfN social as a metric, the quantity, scope and sheer energy of the student presentations is a source of tremendous joy for us veterans of the organization. I take tremendous pride in the organization, but I do have a criticism. Through its achievements, FUN is playing a role in creating the job description of a neuroscientist who specializes in undergraduate education. But those of us in this role know that many of our institutions, particularly the smaller ones, have expectations for us that go beyond instructing, training and doing research in our specializations. At liberal arts schools, at least, we also have a role in working with our colleagues in all disciplines to nurture generations of citizens who understand what science contributes and the methodologies that it necessitates. We are also expected to make understood what neuroscience contributes to the understanding of our humanity. As an organization for neuroscientists who play major roles in undergraduate education, I wonder if FUN could do more to assist us in our complete responsibilities. Having served on the Public Education and Communication Committee (PECC) of SfN, a committee which recognizes the obligation that neuroscience has to shape a well informed citizenry, I can envision more avenues of cooperative endeavors between PECC and FUN if more could be done to articulate the dual responsibilities of neuroscientists in undergraduate settings.

Already well articulated is our role in providing our students with the technical and intellectual skills for neuroscience careers. Since the Society for Neuroscience is a wonderfully effective scientific society, the synergistic activities of the Faculty for Undergraduate Neuroscience have naturally gravitated to the training needs of the science. We provide the foundational training for the well-prepared graduate students that our training programs desire. But SfN recognizes, through PECC, that neuroscience needs not only competent scientists but also a comprehending and supportive public. Because FUN and its membership have focused more on our roles in training future scientists rather than our role in creating an informed citizenry, potential cooperative ventures between what we do as neuroscience educators and the activities of PECC have not been fully explored. The cooperative potential between the FUN and PECC was displayed at the last SfN meeting in Chicago with the awarding of the first SfN-FUN travel award for student initiated Brain Awareness projects. Developed collaboratively by the two groups, the award fits squarely within PECC's public education mission and activities FUN's undergraduate students are well prepared to do. I suggest we can do

more in the arena of public education. Doing more to spell out our complete roles in our institutions will help. I have a few recommendations to help FUN in this mission and also recommendations to the Society that would enhance the synergy between the two organizations in promoting neuroscience literacy.

## WHAT FUN CAN DO

1) Organize conferences and workshops exploring ways to extend Neuroscience's presence in and impact upon the liberal arts curriculum. Creative and visionary FUN faculty have organized PKAL workshops that have been highly successful (Johnson et al., 2009), but except for some notable exceptions (Wichlinski, 2009; Lafer-Sousa and Conway, 2009), the lion-share of the workshop activities deal with teaching and resources for our courses in the major. I argue that we need a workshop, some sort of a "summit," to better articulate the two distinct roles of undergraduate neuroscience education. There would be much to discuss at such a gathering including neuroscience positioning among the more traditional majors, the expansion of placement opportunities for neuroscientists, etc. But of particular relevance for creating synergies with PECC, such a workshop would explore what neuroscientists can do to expand science literacy, educate the public about scientific methodologies and to explore the social and ethical implications of our work. Such a workshop could also encourage the development of proposals to NSF's newly conceptualized CCLI program - Transforming Undergraduate Education in Science, Technology, Engineering and Mathematics- which places particular emphasis on undergraduate educational initiatives which have broad interdisciplinary and curricular implications.

2) Provide direct assistance to its membership in the development of neuroscience clubs and Nu Rho Psi chapters. The by-laws of student organizations generally include civic engagement activities. Brain Awareness projects work very well here. I have found that undergraduates can shoulder the primary responsibility for such events with much better skill sets for the task than their faculty mentors (Gittis, 2009, 2010). Students have arts and crafts skills, fundraising experience, contacts with area schools and pure energy. By simply directing them to the web resources developed by PECC for Brain Awareness projects my students have hosted an extremely successful, well-attended Brain Awareness event that quite frankly has been one of the most satisfying experiences I have had as an educator. I can envision more collaborative efforts, beyond Brain Awareness activities,

that can promote cooperative projects between PECC, FUN and our undergraduate students in creating an informed citizenry.

## WHAT SfN CAN DO

1) If neuroscientists in undergraduate education did a more effective job in defining our role in creating an informed public, the charter of the Public Education and Communication Committee could and should be changed to contain language that would extend its purview to the public education that occurs on our campuses. At the annual meeting FUN members can often be heard grouching about a purported blind spot SfN seems to have for undergraduate education, a point captured in a prior JUNE editorial (Stuart, 2007). If that blind spot were to have a neuroanatomical location, it might be located in PECC's charter which explicitly restricts its activities to K-12. Since a dual role for neuroscience education has not been explicitly delineated, this restriction is quite understandable. With the role of neuroscience education at undergraduate institutions seen as focused on professional training, modifying PECC's charter to include undergraduate curricula would muddy its responsibilities. However, with the recognition that neuroscientists in undergraduate education have an equally important role in public education, a modification of PECC's charter would logically follow. For the past three years I have served as FUN liaison to PECC. I understand their mission well. I also know that neuroscience educators at undergraduate institutions are actively and intensively doing things that PECC wants to promote. A modification of PECC's charter to include undergraduate education would lead to more cooperative ventures between SfN and FUN.

2) SfN's commitment to public education is evident through the support provided to sustain PECC and its staff in its oversight of activities and publications that promote the public awareness of the contributions of our field. It would be entirely compatible with SfN's commitment to restore the traditional Theme H format that was in place prior to the 2008 meeting. Just as undergraduate neuroscience education's role in public education has become overshadowed by its training role, the public education responsibilities of the Society also become easily overshadowed. The traditional Theme H format, in which teaching and public outreach activities were displayed for the entire conference, was a potent statement of the imperative that scientific societies have to promote public literacy. The Society invests substantial resources in public education and the reduction and marginalization of Theme H contributions works counter to this mission. I am eager to see increased initiatives by neuroscientists in the promotion of science literacy, particularly in undergraduate curricular settings. I fear the necessary momentum to do this is being lost through the down-sizing of Theme H at the annual meeting.

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