

EDITORIAL

Oh What FUN We've Had! Reflections on the Past and a Look to the Future

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In 2011 FUN celebrated 20 years of training tomorrow's neuroscientists today. Over the past two decades we've become an international organization of members dedicated to excellence in teaching and research at the undergraduate level. FUN has enacted its mission through our flagship journal JUNE, student travel awards, faculty awards, education workshops, and regional conferences. More recent initiatives include the equipment loan program, department/program consulting service, the honor society

Nu Rho Psi, and neuroscience study abroad opportunities. FUN is poised to continue enhancing undergraduate neuroscience education and research over the next 20 years.

Key words: student travel awards, neuroscience education workshops, JUNE, equipment loan program, regional conferences, program and department consultants, neuroscience study abroad, Nu Rho Psi

In 2011 the Faculty for Undergraduate Neuroscience (FUN) celebrated 20 years of training tomorrow's neuroscientists today. By any measure used, those 20 years have been spectacular. In this essay I will hit some of the highlights of the last decade. Much excellent information on the history, philosophy and goals of FUN has already been written (e.g., Ramirez and Normansell, 2003; Hardwick et al., 2006; Wiertelak et al., 2011). It is inspiring to see how far we've come.

One metric of the success of an organization is the number of people who participate in its functions. The Faculty for Undergraduate Neuroscience was created at the first "undergraduate neuroscience education" social at the Society for Neuroscience meeting in New Orleans in 1991, where 67 people gathered. As the field of neuroscience has grown, so too has FUN. Our organization now has more than 500 members from around the world. The FUN social and poster session has become the best-attended social of the SfN meeting program – in 2011, over 600 individuals attended the FUN social in Washington, DC.

Broadly speaking, the mission of FUN is to enhance undergraduate neuroscience education and research by supporting faculty and their students. Below I'll briefly touch on the ways we accomplish our mission.

ENHANCING UNDERGRADUATE PARTICIPATION IN RESEARCH AND DISSEMINATION

From the beginning, FUN members have recognized the importance of student participation in the annual meeting of the Society for Neuroscience. Exposure to the wide range of research questions being asked by neuroscientists and exposure to over 30,000 people who "like brains" is often a transformative experience for undergraduates. To this end, FUN members regularly have their research students present posters on the floor of the main SfN meeting. However, since much undergraduate research is conducted over the summer, many students are unable to submit abstracts by the late

spring SfN deadline. The FUN poster session, held as part of the FUN social, offers students an alternative opportunity to present their work to a national audience, with an early fall abstract deadline. As FUN has grown, so has the poster session; over 150 student posters were presented at the 2011 social. The FUN poster session has also become recognized as a valuable presentation venue by the larger scientific community; at least one program officer has suggested that all grantees encourage their students to present their work at this session, and awardees of the SOMAS-URM grants (described below) also present their work at this venue. In addition, graduate program representatives use this opportunity to recruit motivated and talented undergraduates.

Not surprisingly, we've experienced some growing pains as the FUN poster session has swelled to its current numbers. We are at the upper limit of room sizes the society normally assigns for socials, and it is likely we'll need to explore creative options for our poster session and social in the coming years. Conversations with the SfN program committee and society staff have begun, and will continue as we pursue the best ways to provide our students with the chance to disseminate their work.

Travel awards

To support students presenting on the floor of the meeting, FUN offers a competitive travel award program with awards of up to \$750 to help defray expenses associated with attendance at SfN. In 2011 over 40 FUN members sponsored travel award applications from their students and more than \$12,000 was given to support the 19 students who ultimately received awards. Since 1992, FUN has provided more than 190 students with travel awards. In 2011 the Society took a page from our playbook, and is now offering an Undergraduate travel award through the auspices of the Committee on Neuroscience Departments and Programs (formerly the Association of Neuroscience Departments and Programs).

Raising funds for the travel awards has become one of the major responsibilities of the FUN president. In a tight

economy, we have been fortunate for the support of a number of generous corporations, foundations, institutions and individuals (a complete list of travel award sponsors, student winners and their mentors can be seen at www.funfaculty.org under "Past Travel Award Winners"). As we move forward, the creative minds on the Executive Committee will be looking at ways to enhance our ability to offer travel awards.

In addition to awards for research, FUN co-sponsors a Brain Awareness Week travel award in conjunction with the Society for Neuroscience. This award is given during the Brain Awareness Week session at the SfN meeting to a student who has engaged in meaningful neuroscience outreach activity.

SOMAS-URM

The Support Of Mentors And their Students from UnderRepresented Minorities (SOMAS-URM) program is an innovative grants program conceived and directed by Julio Ramirez. The program is designed to promote the development of junior faculty and to provide research experiences for the undergraduate students of those faculty (www.somasprogram.org). FUN has been a strong supporter of SOMAS since its inception in 2005 and nine SOMAS awardees have subsequently served on the Executive Committee of FUN.

Through SOMAS, faculty from under-represented minorities or those with URM students receive financial support to help facilitate student research projects and travel to the SfN meeting. More importantly, perhaps, both faculty and students receive support in the form of mentoring. Students and faculty alike are uniformly positive in their assessment of this program.

DISSEMINATING INNOVATIONS IN UNDERGRADUATE NEUROSCIENCE EDUCATION

JUNE

The Journal of Undergraduate Neuroscience Education (*JUNE*; www.funjournal.org) is FUN's flagship journal (for a full history see Dunbar et al., 2008). The first issue of *JUNE* was published in the fall of 2002 with Barbara Lom as Editor-in-Chief and copy editor extraordinaire (Lom, 2002). Gary Dunbar took over the reins of *JUNE* in 2007 and Bill Grisham became Editor-in-Chief in 2011. Quoting Barbara Lom, "it's amazing to think that we are approaching our tenth anniversary.....those first years I remember thinking (as I copy edited every word on every article myself) that if I got hit by a bus there would never be another issue of *JUNE*.....one of the things that I am most proud of is how enthusiastically FUN has supported *JUNE*, how so many people volunteer to make the journal succeed, and how it has matured under the leadership of subsequent editors."

As we arrive at the 10th anniversary of *JUNE*, it is clear that the journal is thriving. Thanks to a host of innovative faculty who submit their work, there are 20 online issues full of stimulating articles on laboratory exercises and

pedagogical strategies, interesting curricular and programmatic ideas, and inspiring editorials.

A major goal for *JUNE* is to be indexed in PubMed. Currently *JUNE* is indexed in PsycINFO, the National Science Digital Library, and the Directory of Open Access Journals, and listed on SCOPUS (Grisham, 2012) and is well on the way to being included in PubMed, thanks to the hard work of Gary Dunbar, Eric Wiertelak, Robert Calin-Jageman, Raddy Ramos and others. FUN is committed to the continued excellence of this fantastic resource; with a dedicated editorial board and talented authors *JUNE*'s continued success is assured.

Neuroscience Education Workshops

Since 1995, six summer workshops on neuroscience education have taken place, with the enduring support of PKAL and the various hosting institutions (Table 1). Workshop session topics have included hands-on work with laboratory activities, pedagogical strategies for the classroom and tips on grant writing.

At the 1995 workshop, participants developed four curricular blueprints for undergraduate neuroscience programs (Ramirez et al., 1998). At Macalester in 2005 a fifth blueprint, neuroscience studies, was added to the original four: neuroscience as a major, as a minor, nested in psychology, or nested in biology (Wiertelak and Ramirez, 2008). These blueprints have been of great help to faculty and administrators across the country as new neuroscience programs are created and existing programs are revisited. As pointed out by Mike Kerchner (2005), a future charge for FUN is to lead the way in determining methods of assessment for the curricula developed using these blueprints.

To enhance dissemination of ideas exchanged at the 2008 Macalester workshop, a special issue of *JUNE* was published [2009, issue 8, vol 1]. The current volume contains articles by presenters at the 2011 Pomona workshop. These special issues are a marvelous way to broaden the impact of the FUN workshops.

RECOGNIZING EXCELLENCE IN UNDERGRADUATE NEUROSCIENCE EDUCATION

Faculty Awards

To recognize faculty who have made outstanding contributions to undergraduate neuroscience education FUN gives a number of awards at the social during the joint meetings of the SfN and FUN. The FUN Educator of the Year award is given annually, while the Lifetime and Career Achievement Awards are given periodically (Table 2). Service and Mentor Awards are also given from time to time, to honor faculty who have made significant contributions in these areas. Visit www.funfaculty.org for a complete list of award winners and more information on each award category.

Nu Rho Psi

The national neuroscience honor society *Nu Rho Psi*

was founded by FUN in 2006, thanks to the organizing efforts of Andy Mickley. The purpose of *Nu Rho Psi* is to: encourage professional interest and excellence in scholarship, particularly in neuroscience; award recognition to students who have achieved such excellence in scholarship; advance the discipline of neuroscience; encourage intellectual and social interaction between students, faculty, and professionals in neuroscience and related fields; promote career development in neuroscience and related fields; increase public awareness of neuroscience and its benefits for the individual and society; and encourage service to the community.

In the past year, *Nu Rho Psi* has become an independent organization, with an elected National Board and its own tax exempt identity. There are currently 25 chapters across the country, with over 900 members. Visit www.nurhopsi.org for information on this great organization. In addition to being an honor, membership in *Nu Rho Psi* makes students eligible for a named travel award through FUN.

ENHANCING UNDERGRADUATE NEUROSCIENCE EDUCATION AND FACULTY DEVELOPMENT

Regional Groups

While presenting at the FUN poster session or on the floor of the annual SfN meeting is a great opportunity, not all students are able to do this. To give students the chance to present their work, and to provide faculty with an opportunity to come together with local colleagues, four regional undergraduate neuroscience conferences have been created. N.E.U.R.O.N. (NorthEast Under/graduate Research Organization for Neuroscience) was established in 1996 and currently meets twice per year, typically in New York and in Boston (Frye and Edinger, 2004). The Symposium for Young Neuroscientists and Professors of the Southeast (SYNAPSE) was created in 2003 and hosting duties rotate among the various institutions in the region (Hurd et al., 2011). MidBrains, a regional

| | Title | Institution |
|-------|--|--------------------|
| 2011* | The Undergraduate Neuroscience Education: Resourcing the Curriculum, Improving Pedagogy and Programs and Expanding our Disciplinary Horizons | Pomona College |
| 2008* | The Undergraduate Neuroscience Education: Interactions, Interdisciplines and Curricular Best Practices | Macalester College |
| 2005 | Leadership, Laboratories, and a Curriculum for the 21 st Century | Macalester College |
| 2001 | From the Enchanted Loom to the World Wide Web | Trinity College |
| 1998 | Interdisciplinary Connections: Blueprints for Reform in Undergraduate Neuroscience | Oberlin College |
| 1995 | Interdisciplinary Connections: Undergraduate Neuroscience Education | Davidson College |

Table 1. Six undergraduate neuroscience education workshops have been held since 1995. Ithaca College will host the 2014 workshop. * Many sessions from these workshops have been re-created in special issues of *JUNE*.

| | Educator of the Year Award | Career Achievement Award | Lifetime Achievement Award |
|------|--|--------------------------|-------------------------------|
| 2011 | Dorothy Kozlowski | | Andy Mickley |
| 2010 | Amanda Clinton | Michael Kinder | Alan Gittis |
| 2009 | Mark Bradford | | Andy Sinauer |
| 2008 | Alan Gittis | | Jeanne Narum |
| 2007 | Ann E. Stuart & Andrew Mickley | Eric Wiertelak | |
| 2006 | Robert Wytttenbach | Eric Chudler | Ron Hoy |
| 2005 | Richard Olivo | Felix Schweizer | |
| 2004 | Mary Lou Caspers | Debbie Colbern | Jeff Wilson |
| 2003 | Cheryl Frye | | Gary Dunbar |
| 2002 | Barbara Lom | | Dennison Smith & Jack Boitano |
| 2001 | Bruce Johnson, Carol Ann Paul & JoAnn Berger-Sweeney | Julio Ramirez | |

Table 2. Recipients of FUN's Educator of the Year, Lifetime and Career Achievement Awards.

organization representing the Midwest, started in 2005, and after three years at Macalester College has also moved to a rotating host model. The newest regional group is MGluRS (Midwest/Great Lakes Undergraduate Research Symposium in Neuroscience) for “states touching Ohio”, which first met in 2009. There has been talk of a west coast group, and we are anxiously awaiting word of a new, clever acronym to add to the list.

Equipment Loan Program

Thanks to the philanthropic mind-set of Michael Kinder of Kinder Scientific, and the efforts of Mike Kerchner, Bruce Johnson and especially Jean Hardwick, in 2009 FUN launched an exciting and innovative equipment loan program for members. Jeff Smith is currently administering the equipment loan program and is busy building relationships with various vendors.

Through this program, faculty can apply for a two-year loan of equipment for use in research and/or teaching. The proposal review committee, drawn from the FUN Executive Committee and members at large, looks at scientific merit of the project and the impact on both research and teaching of the faculty member.

Although some equipment vendors are beginning to lease scientific equipment to researchers, FUN's equipment loan program is the only one of its kind. For the cost of shipping, FUN members can use state-of-the-art equipment for two years. One goal of the program is to facilitate the gathering of pilot data that can then be leveraged into successful grant applications, allowing for the purchase of the equipment.

Program and Department Consultant Service

In 2007, Eric Wiertelak spearheaded the development of the FUN Program and Department Consultation Service (PDCS) through the FUN Committee on Education. Modeled after a similar program available to members of the American Psychological Association, the PDCS maintains a list of consultants available to help undergraduate departments and programs with a variety of topics. Upon request, faculty consultants are available in a broad range of areas, including curriculum, faculty, advising, research facilities, and department/program evaluation. For further information on this program visit <http://www.funfaculty.org>, and see the article by Eric Wiertelak in this volume.

Undergraduate Neuroscience Abroad

At the 2006 SfN meeting in Atlanta, the FUN booth happened to be right across the aisle from the German Graduate Schools of Neuroscience, and FUN was introduced to our fantastic German colleague Lutz Steiner. Since 2008, the German Graduate Schools group has conducted a poster competition at the FUN Poster session and awarded various prizes including a week's trip to various neuroscience hot spots in Germany.

In 2010 a group of FUN faculty (Mary Harrington, Chris Korey, Mike Ruscio, and Eric Wiertelak) went to Germany to explore ways in which US undergraduate institutions and

German neuroscience programs as well as European neuroscience programs could collaborate to provide study abroad courses. In May of 2011, Chris Korey and Mike Ruscio led 8 US undergraduates on a month-long summer study abroad course in Munich and Berlin; the program was so successful they offered it again in May of 2012. The course is organized through College of Charleston and is open to students from across the country. See the article on the summer course by Mike Ruscio in this volume for more information.

In addition to summer study abroad, plans are afoot for the development of independent research opportunities for undergraduates in top European neuroscience labs during semester study abroad courses. While in Germany, the FUN contingent met with the leadership of the Network of European Neuroscience Schools, a committee of the Federation of European Neuroscience Societies (the European version of the SfN) where the idea was born. Watch for information from FUN as this exciting project comes to fruition.

ACCOLADES EARNED

In January of 2011, FUN's own Julio Ramirez (FUN's Founding President) received a Presidential Award for Excellence in Science, Mathematics, and Engineering Mentoring from President Obama. Julio also received the 2011 Award for Education in Neuroscience from SfN and the Committee on Neuroscience Departments and Programs. FUN members, including ten past presidents, filled the CNDP social and award ceremony to watch Julio receive his award (Figure 1).



Figure 1. Past FUN presidents gather to see Julio Ramirez receive the 2011 Educator of the Year award from the CNDP. Back row (l to r): Bruce Johnson, Chris Korey, Mary Harrington, Eric Wiertelak, Jeff Wilson, Mike Kerchner; front row (l to r): Karen Parfitt, Jen Yates, Julio Ramirez, Jean Hardwick, Shelly Dickinson.

In March of 2011 the FUN logo received graphic design accolades from a design class: “The minimalism is excellent, the logo is unmistakably three-dimensional, the logo contains a motto built right into it and even tells a little story!” That motto is “building the future since 1991” and it

| | <i>President</i> | <i>President-Elect</i> | <i>Secretary</i> | <i>Treasurer</i> | <i>Treasurer-Elect</i> |
|---------|-------------------|------------------------|------------------|-----------------------|------------------------|
| 2011-12 | Elaine Reynolds | Noah Sandstrom | Jan Thornton | Ron Bayline | David Jewett |
| 2010-11 | Shelly Dickinson | Elaine Reynolds | Jan Thornton | Ron Bayline | David Jewett |
| 2009-10 | Jennifer Yates | Shelly Dickinson | Carol Ann Paul | Sonsoles De Lacalle | Ron Bayline |
| 2008-09 | Christopher Korey | Jennifer Yates | Alexia Pollack | Sonsoles De Lacalle | Ron Bayline |
| 2007-08 | Bruce Johnson | Christopher Korey | Alexia Pollack | Gayle Brosnan-Watters | Sonsoles De Lacalle |
| 2006-07 | Mary Harrington | Bruce Johnson | Mary Lou Caspers | Gayle Brosnan-Watters | |
| 2005-06 | Michael Kerchner | Mary Harrington | Mary Lou Caspers | Gayle Brosnan-Watters | |
| 2004-05 | Jean Hardwick | Michael Kerchner | Mary Lou Caspers | Gayle Brosnan-Watters | |
| 2003-04 | Eric Wiertelak | Jean Hardwick | Mary Lou Caspers | Gayle Brosnan-Watters | |
| 2002-03 | Eric Wiertelak | Michelle Mynlieff* | Jean Hardwick | Gayle Brosnan-Watters | |

Table 3. Faculty for Undergraduate Neuroscience officers 2002-present; the Past-President position is not included but was filled by the previous year's President. *Michelle Mynlieff was unable to serve as President; Eric Wiertelak served for an additional year.

continues to be the goal of our organization. Kudos are due to Jeff Wilson for his enduring creation.

Some of the most meaningful accolades come from within. Andy Mickley, the 2011 Lifetime Achievement Award winner, has this to say: "FUN has been, and continues to be, a linchpin in my professional life. I'm so very proud about the way everyone ... supports our budding neuroscientists and keeps that goal in the forefront of what we do each day." And from Julio Ramirez, on the occasion of receiving the 2011 Educator of the Year Award, "...I have been extraordinarily fortunate to have my friends at the Faculty for Undergraduate Neuroscience with whom I have shared the last 20 years. Their dedication to excellence and their passion to educate the next generation of neuroscientists so these young women and men can make the grand discoveries of the future inspire me to vigorously pursue my own aspirations in the classroom, in the laboratory, and for our community. My friends at the Faculty for Undergraduate Neuroscience have truly made the last 20 years wonderfully FUN!"

One of the great pleasures of being involved in FUN is interacting with the amazing, dedicated people in this organization. It was an honor to represent this group, and to be able to say "I'm the president of FUN".

LOOKING TO THE FUTURE

Since the current organizational structure was adopted in 1993, a strong slate of leaders has kept FUN running smoothly (Table 3; officers from 1993-2002 are given in Ramirez and Normansell, 2003). In 2007 FUN added a Treasurer-Elect position to the Executive Committee to help with the financial tasks associated with our growing organization.

Over the past two decades, FUN has forged important relationships with Project Kaleidoscope, the National Science Foundation and the Society for Neuroscience,

especially the CNDP. With that committee's focus on graduate training and FUN's work in training undergraduates, the time is ripe for an even stronger, mutually beneficial relationship.

As we begin our third decade of FUN, we have much to be proud of, and much to look forward to. Our biggest challenge is likely to come from our biggest strength, the sheer number of innovative, passionate educators who make up the Faculty for Undergraduate Neuroscience. Growing pains are likely – developing from a small, nimble grassroots group with a vision into a powerful organization with a national presence and variety of innovative programs does not happen smoothly or overnight. Through it all, the vision continues and the FUN will go on.

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