

## Feature Meeting Report

# Northeast Under/graduate Research Organization for Neuroscience (NEURON): Our 13th Conference for Neuroscience Trainees and Educators

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## INTRODUCTION

The Northeast Under/Graduate Research Organization for Neuroscience (NEURON; [www.albany.edu/neuron/conference/index.html](http://www.albany.edu/neuron/conference/index.html)) was established 12 years ago to foster the training, education, and research of both undergraduate and graduate neuroscience students. NEURON hosts two annual conferences (Boston in the fall; New York City in the spring) to promote and support neuroscience training, education, and research. For 12 years, these conferences have promoted neuroscience by exposing neuroscience trainees to research and educational perspectives (Edinger *et al.*, 2003, 2004, 2005; Frye and Edinger, 2004; Goyette *et al.*, 2009; Rhodes *et al.*, 2006, 2007, 2009). Conferences are supported by a National Institutes of Health R13 grant and serve as a valuable experience for both students and mentors with a passion for neuroscience.

## MEETING OVERVIEW

This report describes the proceedings of the fall 2007 meeting at Northeastern University. A morning poster session provided a forum for students to present, discuss, and gain feedback on their current research. Overlapping with the poster session, high school students attended a "Brain Primer" workshop. Later in the morning, Dr. William Carlezon delivered the keynote address, which was followed by lunch and professional development workshops. The meeting concluded with an awards ceremony to honor outstanding student and faculty work. There were 355 total registrants: 217 (61%) undergraduates, 57 (16%) graduate students, 14 high school students (4%), and 67 (19%) faculty members. At the

end of the meeting, attendees were requested to fill out a survey regarding their experience. According to the survey, 67% women made up 68% of respondents and almost 50% represented minorities (Tables 1–3).

## KEYNOTE ADDRESS

At each conference, a distinguished neuroscientist is invited to deliver a keynote address to conference participants ([www.albany.edu/neuron/conference/index.html](http://www.albany.edu/neuron/conference/index.html)). This address serves to expose young neuroscientists to the breadth of the field and provides an opportunity for them to interact with an established leader in the field. The keynote speaker, Dr. William Carlezon of Harvard Medical School, McLean Hospital, discussed the "Role of Nucleus Accumbens CREB in Motivated Behavior: Implication for Comorbidity of Addiction and Depression." A highlight of Dr. Carlezon's talk was a YouTube.com video that examined Salvinorin A, a powerful psychoactive drug, through the lens of popular culture that left students intrigued and engaged. Many stayed after the talk to ask Dr. Carlezon questions individually, whereas others adjourned to watch the video again or to converse with fellow attendees. Before his talk, Dr. Carlezon attended the student poster sessions, interacting one-on-one with students, providing them with feedback on their original research projects and presentations.

## POSTER SESSION/AWARDS

There were 44 poster presentations given by both graduate and undergraduate students during the 2-h session. According to the survey, 67% of respondents rated the poster session as "very useful." Furthermore, 61% of undergradu-

DOI: 10.1187/cbe.08-08-0050

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**Table 1.** Attendance statistics (gender) from survey

Gender	Count
Male	41 (32)
Female	88 (68)
Total	129

Numbers in parentheses indicate percentages.

ates surveyed indicated that this was their first scientific conference, and 49% reported that this was their first poster presentation.

The Suzannah Bliss Tieman Research Award and the Suzannah Bliss Tieman Award for Exemplary Mentorship recognize extraordinary efforts of students and faculty members, respectively ([www.albany.edu/neuron/conference/index.html](http://www.albany.edu/neuron/conference/index.html)). Dr. Tieman was an invaluable member of the NEURON Steering Committee and was instrumental in developing the organization. Kassandra O'Brien (Northeastern University) received the undergraduate award for her presentation, "Alteration in Dopamine and Dopamine D2 Receptors Correlates with Adolescent, Anabolic Androgenic Steroid Treated Hamsters;" Angela Seliga (Boston University) received the graduate award for "Mating Induces Phosphorylation and Nuclear Translocation of Mitogen-activated Protein Kinase (pMAPK) in Female Rats." The faculty award went to Dr. Sharon Ramos-Goyette (Stonehill College) for her contribution, "A Panel Discussion of Neuroscience Outreach and Opportunities." Recognizing faculty members in the presence of students promotes professional development and reinforces excellence among trainees (Frantz *et al.*, 2006; Zardetto-Smith *et al.*, 2006).

## CONFERENCE WORKSHOPS

The Brain Primer workshop guided 14 high school students through a simple introduction to basic neuroscience, so that they could participate actively later in the conference. Immediately after the workshop, each student was paired with a graduate student docent. Angela Seliga supervised the docent program, which aimed to further enhance the experience of the younger students in both empowering them and engaging them in neuroscience. Students reported that the morning workshop and mentoring programs were very helpful in facilitating to learn more from the poster session

**Table 2.** Attendance statistics (academic status) from survey

Academic status	Count
High school	2 (1)
Undergraduate	86 (67)
Graduate	27 (21)
Faculty	14 (11)
Total	129

Numbers in parentheses indicate percentages.

**Table 3.** Attendance statistics (ethnicity) from survey

Ethnicity	Count
Caucasian	63 (51)
African-American	7 (6)
Latino/Hispanic	24 (20)
Asian/Pacific Islander	19 (15)
Other	10 (8)
Total	123

Numbers in parentheses indicate percentages.

and keynote address at a higher level than is available through their high school classrooms. The literature indicates that as students become more involved, they are more likely to enhance their educational experience and become more engaged in their program (Hardwick, 2005; Lopatto, 2007). We are now piloting a similar mentoring program for other NEURON conferences as a means to increase the exposure of high school students to neuroscience.

Angela Seliga, herself a graduate student, and Dr. Sharon Ramos-Goyette (Stonehill College faculty member) also led a panel discussion about research and educational opportunities for students in the Boston area. In this session, they identified 24 programs that may benefit trainees in establishing contacts to guide their future education and training. Sixty percent of survey respondents attended this session, and all rated it as highly beneficial.

Building upon success in previous years, Madeline Rhodes (Smith College) and Jay McLaughlin (Northeastern University) presented, "How to Gain Entrée and Thrive in Your Graduate Program of Choice." Undergraduate trainees learned about the process of applying to graduate school and achieving success once admitted. Drs. Rhodes and McLaughlin emphasized the importance of selecting a program that aligns with one's research interests. They also reviewed academic and funding challenges that admitted students will face. Current graduate students were available to discuss participants' questions.

## SUMMARY

One of the primary objectives of NEURON is to provide an open forum for neuroscience undergraduate and graduate students to present and discuss their work with students and faculty with similar interests. Previous research demonstrates that presenting research at a conference poster session serves as an effective vehicle to meet this objective (Hardwick, 2005). Indeed, as noted earlier the majority of students rated the poster session as "very useful." Moreover, the entire organization of the NEURON meeting, including the keynote speaker, the workshops, and the poster session, is designed to maximize and promote and encourage the development of neuroscientists in training.

## ACKNOWLEDGMENTS

Funding for this conference was made possible in part by grant R13MH060282 from the National Institute of Mental Health. The

views expressed in written conference materials or publications and by speakers and moderators do not necessarily reflect the official policies of the Department of Health and Human Services nor does mention of trade names, commercial practices, or organizations imply endorsement by the U.S. Government. Support was also provided by The University at Albany, Northeastern University, and the Harvard Pilgrim Health Care Association.

## REFERENCES

- Edinger, K. L., Morgan, K., Blasberg, M., and Frye, C. A. (2003). Northeast Under/graduate Research Organization for Neuroscience (N.E.U.R.O.N.): an update on our seventh annual conference for neuroscience trainees and educators. *J. Undergrad. Neurosci. Educ.* 1, 1–8.
- Edinger, K. L., Morgan, K., Kirkpatrick, M., and Frye, C. A. (2004). Northeast Under/graduate Research Organization for Neuroscience (N.E.U.R.O.N.): an update on our Eighth Annual Conference for Neuroscience Trainees and Educators. *J. Behav. Neurosci. Res.* 2, 1–8.
- Edinger, K. L., Young, J., Luine, V., and Frye, C. A. (2005). Northeast Under/graduate Research Organization for Neuroscience (N.E.U.R.O.N.): an update on our ninth annual conference for neuroscience trainees and educators. *J. Behav. Neurosci. Res.* 3, 1–6.
- Frantz, K. J., DeHaan, R. L., Demetrikopoulous, M. K., and Carruth, L. L. (2006). Routes to research for novice undergraduate neuroscientists. *CBE Life Sci. Educ.* 5, 175–187.
- Frye, C. A., and Edinger, K. L. (2004). Northeast Under/graduate Research Organization for Neuroscience (N.E.U.R.O.N.): a regional neuroscience meeting for undergraduates, graduate students, and faculty. *J. Undergrad. Neurosci. Educ.* 2, 36–40.
- Goyette, S. R., Rhodes, M. E., Gray, B., and Frye, C. A. (2009). Northeast Under/graduate Research Organization for Neuroscience (NEURON): an update on our eleventh annual conference for neuroscience trainees and educators. *J. Undergrad. Neurosci. Educ.* (*in press*).
- Hardwick, J. C. (2005). Preparing the next generation of neuroscience educators. *J. Undergrad. Neurosci. Educ.* 2, E3.
- Lopatto, D. (2007). Undergraduate research experiences support science career decisions and active learning. *CBE Life Sci. Educ.* 6, 297–306.
- Rhodes, M. E., Edinger, K. L., Young, J., Luine, V., and Frye, C. A. (2006). Northeast Under/graduate Research Organization for Neuroscience (N.E.U.R.O.N.): an update on our tenth annual conference for neuroscience trainees and educators. *J. Behav. Neurosci. Res.* 4, 1–7.
- Rhodes, M. E., Ramos, S. G., Edinger, K. L., Gray, B., and Frye, C. A. (2007). Northeast Under/graduate Research Organization for Neuroscience (NEURON): the first year of the two-conference model and our eleventh conference for neuroscience trainees and educators. *J. Behav. Neurosci. Res.* 5, 1–8.
- Rhodes, M. E., Ramos, S. G., Young, J., Luine, V., and Frye, C. A. (2009). Northeast Under/graduate Research Organization for Neuroscience (NEURON): an update on our twelfth annual conference for neuroscience trainees and educators. *J. Behav. Neurosci. Res.* (*in press*).
- Zardetto-Smith, A. M., Mu, K., Carruth, L. L., and Frantz, K. J. (2006). Brains rule!: a model program for developing professional stewardship among neuroscientists. *CBE Life Sci. Educ.* 5, 158–166.