Our area of most immediate concern is the advising and mentoring of our majors, especially those not bound for graduate training. Fortuitously, our college also happens to be in the early phases of an advising initiative. As part of that initiative the college has developed goals for its graduates in general and these include many of the things you might expect: disciplinary knowledge, critical thinking, information and quantitative literacy, collaborative leadership, intercultural competency, creative thinking, and intellectual curiosity. As a smaller program that is just about to graduate its third class, we are now working to clarify our program and student learning outcomes, to reconsider our curriculum in light of those outcomes, and to determine how best to move our students toward satisfying those outcomes through teaching, advising, and mentoring. Even with a common core of classes, however, the declaration of a neuroscience major means very different things to different students. In practice, our students’ majors are the products of a negotiation between our curriculum and their ambitions. They’re not all destined to earn a PhD in neuroscience and we want a program that serves all of our students, not just the ones who will make the same choices we did. Are there resources others have used when advising students about career options with undergraduate training in neuroscience? As a subordinate, yet related, goal we have identified promoting student cohesion and developing a stronger program identity. As an interdisciplinary program with required and elective coursework distributed across five academic departments, and through which our students tend not move in lock-step, we have found that many of our majors (most of whom are double or even triple majors) tend not to identify themselves, first and foremost, as neuroscience majors. As was mentioned above, because our students do not have the same expectations of the program, this is not altogether surprising. Nevertheless, even for those students who do identify themselves primarily as neuroscience majors, it is often not until later in the program that many come to know one another, and the faculty, well (e.g., while attending conferences, working in labs, or completing their capstone research projects). We would like to consider practices—curricular and extra-curricular—that might promote this kind of program identification and sense of community earlier. Finally, and perhaps most generally, we are interested in learning how others are assessing the effectiveness of their programs. As we’ve begun to consider this question we’ve come to realize how many of the accountant-style options available (e.g., percentage of students going to graduate school) fall well short of our aspirations.
Baldwin Wallace University
Jacqueline Morris

In the past two years the Neuroscience program has been through a transition in leadership, hired two faculty and sustained our enrollment between 70-80 majors. In 2015-16 we will conduct a 5-year program review and begin preparation for the Institution’s HLC accreditation visit. Many of our goals at this workshop will be to streamline our program for the increased growth in the last 5 years as well as maintain the educational experience for the students. The peer mentoring program pioneered by Dr. Andy Mickley has provided a foundation for training and student involvement in the last ten years. However with the growth of the program and the addition of new faculty, we would like to learn about mechanisms to expand our peer mentoring program. In addition learn creative mechanisms other institutions have used for their capstone experience in the Neuroscience major. Our goals for the conference: 1) To discuss and revise current undergraduate learning outcomes. 2) Develop new assessment mechanisms that provide formative feedback to program improvement. 3) To identify innovative mechanisms for mentoring undergraduate research projects. [i.e. How do other institutions fund UG research? How do team projects work? What solutions have other institutions used to expand the hands on training for UG Neuroscience students?] 4) To identify government and private funding sources to support UG research in a PUI. 5) Network with other UG Neuroscience programs for support. 6) To identify training and support needed for new neuroscience faculty to transition into the program.
My immediate goal for attending the FUN workshop is to improve the laboratory exercises in the behavioral neuroscience course that I often teach. I have used the Neurons in Action program in this course and have mixed results with this teaching tool. I would like to hear from others on their experience with this guide and to learn about other techniques and methods I could use for this course. I am looking forward to learning more hands-on techniques that I could implement in the behavioral neuroscience, clinical neuroscience, and learning and behavior courses that I teach. I believe these additional techniques will be beneficial to the students in my class. For instance, I would like more information on neurophysiological techniques I could include in my courses. I have less training in this area, so learning a few basic techniques in neurophysiology would be greatly appreciated. Along with the specific goal of improving the behavioral neuroscience lab course, I would like more information on other types of neuroscience curricula and program management. All of the courses I teach involve different areas of neuroscience so this additional curriculum would be valuable for the range of courses I teach. A long-term goal that I would like to be able to address with this workshop is how I could publish the neuroscience techniques and scientific teaching I conduct in my courses. I have used some of the techniques in the Journal of Undergraduate Neuroscience Education. I would like more information on how I could publish some of my techniques and data in this journal. This will allow for me to disseminate the information we have learned and would also allow for me to apply for grant applications to support our neuroscience education programs. Along with these goals, I am interested to learn more about the opportunities for undergraduates to study abroad and on facilities planning for neuroscience education. I have a strong interest in recruiting and mentoring underrepresented groups in neuroscience so I am looking forward to the information for this area.
We are both untenured assistant professors affiliated with Bucknell University's Neuroscience Program. Dr. Stevenson has an appointment in Psychology, while Dr. Marin has an appointment in Biology. Following a recent visit by external consultant Dr. Julio Ramirez, we are hoping to talk with other faculty about strategies for re-structuring and strengthening our program. We are especially interested in suggestions for implementing low-cost lab exercises. In addition, as junior faculty, we hope to attend workshops on pedagogy, mentoring, and obtaining external funding for neuroscience research programs at primarily undergraduate institutions.
Christopher Newport University
Andrew Velkey and Katie Wiens

The neuroscience program at Christopher Newport University is in its fourth year and currently has 103 majors served by nine faculty members from the Departments of Psychology and Molecular Biology & Chemistry. In addition to sourcing faculty from two departments, the curriculum is also interdisciplinary---the major requires coursework in biology, chemistry, mathematics, neuroscience, and physics with electives in psychology as well as computer science. Our primary goal for the FUN workshop is to plan refinements to the current curriculum in order to produce well-trained neuroscience undergraduates who are well-prepared for post-graduate positions. Our three most urgent needs are as follows: 1) developing a sustainable, meaningful capstone course for our majors, 2) revamping our original curriculum to incorporate our current needs and strengthen the neuroscience-specific training of our graduates, and 3) transitioning from a major within the Interdisciplinary Studies program to a “stand alone” neuroscience major. We are also interested in expanding community-outreach projects to involve more of our students in service projects related to neuroscience. Our long-term goals are to create a neuroscience department and develop a neuroscience minor.
Our goals are to: 1. Produce a more cohesive and less repetitive Neuroscience major, 2. Learn how to navigate supporting a program that is at times at odds with your home department. 1. Our Neuroscience program has been taught by one tenure-track faculty and visitors over the last 3 years, leading to inconsistency and repetition in the coursework. We have now hired additional tenure-track faculty and have a more stable constellation of teachers in the program. We need to look at the content of our core courses: Introduction to Neuroscience, Human Neuropsychology, Behavioral Neuroscience, Cognitive Neuroscience, and Cellular Neuroscience, to be sure we have a sequence of scaffolded information without excessive overlap. However, we have challenges in that Biology and Psychology majors can come to particular upper level courses without first having Introduction to Neuro as a prerequisite.2. As in most small colleges, Neuroscience is an interdisciplinary major, not a stand-alone department. Therefore the associated faculty wind up with multiple allegiances, which sometimes conflict. In addition, the home department can make promotion and tenure decisions without formal input from the chair of the Neuroscience program. We would like to increase meaningful connections and decrease feelings of possession and competition between the program and associated departments.
As an undergraduate, I had the privilege to attend Gustavus Adolphus College, a small liberal arts college in southern Minnesota. I enjoyed the benefits of both excellent pedagogy and excellent undergraduate research experiences. Now, as I complete my postdoctoral training and prepare for a faculty career in academia, learning how to be an excellent teacher and mentor are just as important to me as research and scholarship. As I look forward to attending this workshop, I anticipate meeting like-minded neuroscientists from other institutions, at different career stages, and I am excited to share our experiences, challenges, and ideas about providing the best possible neuroscience education to undergraduate learners. In addition, I will be teaching my first course in neuroscience in spring 2015, and I will use this workshop as an opportunity to consider innovative ways to present material and engage students.
I have been at DePaul as a professor for 14 years. During this time, an increasing amount of students have become interested in Neuroscience. A few years ago we developed concentrations in Neuroscience in Biology and Psychology departments that help students focus their curriculum and have created courses such as Cognitive Neuroscience. We now have a total of 110 students who have declared neuroscience a concentration. I think that DePaul is ready to consider the development of Neuroscience as a major or perhaps an interdisciplinary program. I would like to learn more about the experiences of others who have built their majors at other institutions so that I may put together a plan for the development of this major at DePaul. The goal will be to gather ideas at the workshop. Create a potential framework for the major in August and approach the Dean to begin discussions in the Fall 2014.
Davidson College
Rachid El Bejjani

Current situation: I am a new faculty member at Davidson College. I am designing a Cell and Molecular Neuroscience course with a lab for spring 2015 (Bio333). The “lecture” component of this class will be taught in a flexible learning environment. The teaching lab will be a semester-long research project complemented with short term experiments. I use *C. elegans* as a model organism in my research and teaching.

Learning goals for Bio333 Cell and Molecular Neuroscience: 1) Learn basic concepts about the cell and molecular biology of neurons and glia, 2) Learn to analyze data and to design approaches using molecular and cellular methods to ask questions about neuroscience, 3) Learn to communicate concepts about cellular and molecular neuroscience in writing and with oral presentation 4) Understand how research in molecular and cellular neuroscience is done by reading and analyzing primary literature 5) Perform a semester-long “real” research project using forward and reverse genetics in *C. elegans* to study the potential role of the intracellular domain of APP in neuronal development.

Goals: I aim to design a class that relies on group activities to solve problems, interpret data and propose testable hypotheses. When used in combination with some traditional lecturing and individual homework, these techniques should enhance higher order learning and skill building and help reduce the learning gap between students. The flexible environment should facilitate active learning by providing movable furniture, ample working space and technological resources.

The strategies I will use include: 1) Guided analysis of selected experiments from original scientific articles in groups and class discussions 2) Problem solving (well and ill-structured problems) in groups in class to review material covered in lecture. 3) Group discussions about ideas for utilizing methods learned in class to answer questions experimentally. 4) Reading, critique and discussion of primary literature. 5) Design and completion of a laboratory research project done in groups of two.

Plans for the future: I plan on refining my strategies for Bio333 and other classes I teach by assessing student learning early and modifying my approach based on student performance. Specifically, I will ask the following questions. 1) Which active learning strategies do students prefer and does this reflect activities that best enhance learning? 2) Does group work in a flexible environment reduce the learning gap? 3) Does the flexible environment enhance student confidence and participation? 4) Does my strategy motivate students to learn and read outside of the classroom? 5) Are students better prepared to solve novel problems as a result of my strategies? 6) Do in-class analysis of primary literature data and a research based teaching lab enhance student appreciation of how science is done? 7) How will students respond to a long-term self-designed project in the teaching lab and do they prefer this approach to shorter, previously designed but innovative labs?

During this workshop, I hope to meet others who are successfully implementing active learning and inquiry-based labs into their teaching. I hope to exchange ideas to improve my teaching in Cell and Molecular Neuroscience and other classes.
Dominican University
Irina Calin-Jageman and Bob Calin-Jageman

Our program was founded in 2007 and now graduates 1-5 students a year. While we are happy with our progress some of our challenges are: a) Assessment and program review – how do we start collecting data that will help us evaluate the major and improve it? What instruments are useful? How do we deal with the very large sampling error that comes from a small sample size? b) Curricular collaboration. Our majors take 3-4 neuroscience-specific courses in conjunction with coursework in bio, psych, and chemistry. Each neuroscience course, however, is housed in a different department and needs to be open to non-majors from these departments. We struggle, then, with the providing accessibility in these courses without too much repetition for neuroscience majors. c) Career planning. How should our curriculum integrate career planning to help students envision and prepare for their life after graduation?
Goals for the FUN workshop 2014
Neuroscience and Behavioral Biology (NBB) is an interdisciplinary program comprised of faculty from the Biology, Psychology, and Anthropology departments. It also has a staff of lecture-track faculty, belonging to the program itself rather than to any department, who teach many of the required courses and electives. Starting with 12 majors at its inception in 1999, NBB now has nearly 650 majors. The growth of our program has brought certain challenges:

- Resources from the College have not kept pace with enrollment growth.
- Maintaining quality of courses while accommodating more students.
- Assessing the effectiveness of the program.
- Few lab courses outside the introductory biology and chemistry requirements.
- No graduate students for TAs, since we are not a department.
- Identifying and filling gaps in our course offerings.

Kristen has been in NBB since 2006 and teaches two of the required courses and a non-majors’ course that meets general education requirements. She is interested in implementing evidence-based pedagogies in all courses and flipping the classroom in her larger courses. Bob came to Emory in 2013 in part to address the lack of lab courses in NBB. He has developed and taught a neurophysiology lab course with a limited number of students. He wants to find ways to bring lab experiences to more students in non-lab courses, as well as ways to manage the faculty workload in full lab courses. Together, Kristen and Bob want to bring back ideas that address the challenges mentioned above. Specifically, we want to learn how other programs assess the effectiveness of their curricula, learn how others have implemented new pedagogies, and network with leaders of other neuroscience programs.
Fordham University
Robert Madden

Fordham recently implemented a Neuroscience major. This will likely create the opportunity for me to mount an undergraduate neurobiology laboratory. I presently teach a general physiology course with lab. Because of my background and interest, I have incorporated a variety of neurophysiology exercises into the lab. However, I have not previously had the opportunity to teach a full neurobiology lab. In anticipation that I will get to do so in the future, I am looking for ideas.
Many of the goals addressed on the FUN Summer Workshop 2014 website are relevant to Gustavus Adolphus College.

Goal 1: Identifying the next steps for our program: finding a direction that fits our institutional context. As gauged by many indicators the first eight years of the neuroscience program at Gustavus has been very successful. Our graduates are routinely admitted to high-caliber graduate and professional schools, our classes are in high demand, the research labs are busy with activity and the program is becoming a successful marketing tool for admissions. There is a palpable energy and engagement in the field across campus. While we are poised to move forward, doing so during a time when our institution is tightening its belt will likely constrain what we hope to accomplish. In the meantime, increasing enrollment pressures are making it difficult for the two primary faculty members to meet the demands on teaching, program administration and research while preserving the quality of the student experience, especially in the laboratory. We are now at a point when diversification and expansion of the program needs to be seriously discussed, ideally among representatives from all corners of the campus. Navigating through this landscape will require skillful leadership and careful planning. I look forward to suggestions from the many proven leaders attending this workshop who have successfully undergone similar transitions in program development.

Goal 2: Understanding effective assessment of neuroscience curriculum. Our institution continues to codify and strengthen its effort to assess all elements of the academic program, yet our faculty have not been trained to develop and implement effectual assessment tools. It would be valuable to learn how colleagues with experience and expertise in the area of assessment quantify and evaluate the success of educational practices in neuroscience in order to identify potential areas of improvement.

Goal 3: Integrating new experiences into the teaching laboratory. All of the courses in our program with the exception of the senior capstone have accompanying laboratories that offer students experience in collecting and analyzing results from electrophysiologic, anatomic and behavioral experiments. The FUN workshop presents a great opportunity to draw from colleagues who have been creative in introducing newer technologies or adapting well established tools to an undergraduate laboratory setting.
I am a currently a post-doc, but am very interested in teaching and doing research at a primarily undergraduate institution in the future. I mentor a number of high school students in Loudon County’s Academy of Science program. In addition, I developed and taught a neuroscience unit for the program’s AP biology class which incorporated a lab using the SpikerBox (Backyard Brains). My goal for this workshop is to gain new ideas that could be implemented in my advanced high school neuroscience unit. In addition, I would like to gain knowledge about undergraduate neuroscience education that would be useful to someone who hopes to start a faculty position in the not too distant future.
La Sierra University  
Suzanne Mallery  

We have just completed the third year of our undergraduate neuroscience program and have grown to 50 majors in an institution of about 2500 students (both undergraduate and graduate). At the last FUN Workshop we were tackling the problems associated with launching a new program, and this year we are ready to focus on expanding and developing that program. One of our goals for this year is to consult with colleagues from other institutions about how interdisciplinary programs work within a traditional academic environment that is still oriented toward individual disciplines. Neuroscience is the first truly interdisciplinary program within our institution, but disciplinary boundaries can be significant barriers to gaining access to faculty time, pursuing interdisciplinary research, and creating research opportunities for students. We hope to get ideas and concrete suggestions for interdisciplinary structures that work in other contexts. Another goal for us is to gain a better understanding of opportunities and creative avenues for faculty development. Running an interdisciplinary program has pushed us to stretch beyond the boundaries of our disciplines and to create bridges to other areas. This requires an understanding of what others are doing and demands that we learn each other’s languages and to some extent the methods of other disciplines. A third goal for the workshop is to strengthen collegial relationships with other programs and faculty. We are finding it invaluable as our program grows to be able to compare notes and share ideas, and the collegial relationships and shared information from the previous workshops have already made a tremendous difference in our program. We are hoping that by the next FUN workshop in 2017 we will have more of our own experience to contribute to the discussion.
The Neuroscience Program at Lafayette College offers a B.S. degree in Neuroscience. The major consists of 17 required courses including introductory courses in Psychology, Biology, General Chemistry, Organic Chemistry, and Physics, as well as an introductory and capstone course in Neuroscience and upper level courses in Biology and Psychology. Approximately 30 students graduate with a B.S. in Neuroscience each year, with an expected increase in the number of majors within the next few years, based on rising interest Neuroscience among the matriculating students. We currently have four faculty within Biology and Psychology which contribute to the core and foundation courses within the major, but we will be hiring a fifth faculty member for the 2015-2016 AY. The members of the Neuroscience Advisory Committee have discussed plans for both a minor and an A.B. major in Neuroscience with a number of concerns for the implementation of both. The committee has drafted a proposal for both the major and the minor, but these proposals are still being vetted by the members of the departments of Psychology and Biology which are the major contributors to the program. Pedagogical and staffing concerns surround both the A.B. degree and the minor in Neuroscience; however we are hopeful that the development of new courses and the increase in staffing that we will be able to address these issues. In addition, we continue to face the challenge of coordinating enrollments and scheduling across all departments contributing to the major, but have managed to make the appropriate adjustments to meet the needs of our students. In the future we hope to further increase staffing as well as the number of courses which span multiple disciplines. We currently offer two team-taught courses which are cross-listed with the Humanities, and hope to offer additional courses which will demonstrate the interplay with the Social Sciences and Engineering. Overall the members of the Neuroscience Advisory Committee at Lafayette College have been pleased with the upward trajectory of the program.
Lycoming College
Mary Morrison

Goal 1: To expand the range of neuroscience lab activities I can do with undergrads
Goal 2: To learn about requirements for neuroscience majors and minors at other institutions
Goal 3: To share challenges and opportunities for research using mice with others at PUIs
Goal 4: To learn more about funding opportunities for Goals 1-3
Goal 5: To learn more about hybrid classroom management and assessment
Goal 6: To have fun with FUN leadership!
North Central College
Maggie Gill

The 2014 Faculty for Undergraduate Neuroscience Workshop entitled “Challenges and Solutions in Creating and Sustaining Programs” is quite timely as I have recently completed my first year as an Assistant Professor at North Central College, where I am charged with developing the neuroscience minor, and expanding this minor into a major in the coming years. As such, my major goal for the meeting is to network with colleagues at peer institutions who have developed neuroscience programs, and learn about successes and pitfalls along the way. Specifically, were there steps you took outside the classroom reaching beyond courses & research that were pertinent to program growth? Were there courses/requirements in your major that enabled/inhibited growth and success? I believe that learning from others early on will be instrumental in the success of a new neuroscience program. Additionally, I am interested in finding out how others are assessing their neuroscience programs as they grow and develop. A secondary goal of mine is to speak with others about active learning strategies that have been successful in their classrooms, and learn more about others’ laboratory offerings. Being at a liberal arts college, we have the distinct advantage of smaller courses, allowing us to incorporate active learning into most lectures. I have incorporated active learning into many of my lectures, however, am still challenged by some topics. I am interested in finding out what methods others are using in order to expand lectures further.
Ohio Wesleyan University
Jennifer Yates, Chris Fink, and Suren Ambegaokar

Ohio Wesleyan University has had a neuroscience program since 1994, though it has been populated, in the past, by only one or two neuroscientists at a time. We’ve recently had the good fortune to receive a large donation to expand the program. So far, two of four new faculty members have been added to the program. With that expansion come several new projects, including those that we are planning to get underway at the FUN 2014 workshop.

- DEVELOP AN INTRODUCTORY NEUROSCIENCE COURSE
  The first goal that we have is to develop an Introductory Neuroscience course with a lab component. We will be attending both the FUN workshop and the pre-workshop with a particular eye for designing this course that will be new to our curriculum. We will be discussing this course with others who have implemented similar courses in their curricula.

- REVISE THE NEUROSCIENCE MAJOR AT OWU
  Our second goal is the re-design of our neuroscience major. The neuroscience major at OWU has undergone only one major revision in the past. With the addition of new faculty members and new courses, it’s time for another. We will be working on determining whether we prefer a depth model, a breadth model, or some combination of those goals. In addition, we’ll be deliberating on whether we will add a second major to the program in computational neuroscience. Two of the four total new faculty positions are in the subfield of computational neuroscience and the higher level courses in that field will require more physics and math than will likely fit in the “general” neuroscience major.

- IN CONJUNCTION WITH THE NEW MAJOR, DEVELOP A COMPREHENSIVE ASSESSMENT PLAN
  The third goal is intimately tied to the curriculum development goal and is focused on designing the assessment of the new curriculum. We are planning to develop the major and the corresponding assessment based on the “Core Concepts” of neuroscience developed by the Society for Neuroscience. This format provides a framework to ensure that our curriculum addresses each of these core concepts and that student learning is taking place in these domains.
The Neuroscience major at Pomona College began as individually-submitted student petitions for special majors in the 1980s. By 1994, in response to being the most frequently requested “special major,” Neuroscience was formalized into an interdisciplinary program, offering its own formal major. Faculty participated in this program at the will of their home departments. Neuroscience is now consistently among the three most popular majors in the college. By the late 1990s, it became clear that the Neuroscience Program had outgrown the structural support that could be adequately offered by status as a program at the College. Specific problems were: (1) the lack of curricular control due to faculty needing to first meet the needs of their home departments; (2) inability to independently hire new faculty to meet increased demand; (3) lack of consideration for dedicated resources (e.g. planning future space, allocating equipment funds); (4) lack of support staff; and (5) structural inefficiency as every curricular decision made by Neuroscience had to be approved by at least one department. We became a Department in July 2011. Since then we have enjoyed being on more equal footing with our colleagues in negotiation for resources and curricular design. Our Neuroscience curriculum takes a three-tier approach to helping our students meet our objectives of developing scientific literacy, critical thinking, and the ability to identify, ask and answer a research question and present the results of this work. The first tier consists of a newly designed one-semester lecture/lab introductory course that provides a basic understanding of some of the founding principles of the discipline and its breadth. This course has been taught five times and we are still working on the best design for its lecture-lab sequences. We have also debated the level at which the course should be pitched. Currently the course pre-requisites are one year of introductory biology (genetics, cell biology, and biochemistry) and one year of general chemistry. Though the course is open to non-majors who have taken these necessary science pre-reqs, this does not allow much flexibility for other non-majors, such as those in the humanities, social sciences, or physical sciences, to explore neuroscience. We have been happy though that the course does provide the necessary foundation for our upper-level courses in Neuroscience and the rigor that our students enjoy. The second tier in our major requires one core lecture-lab course in each of three areas- cell & molecular neuroscience (e.g. neurobiology or Genes and Behavior), comparative systems neuroscience (e.g. neuroethology or vertebrate sensory systems) and human neuroscience. Students also take one elective (e.g. Neuropharmacology, Social Brain, Biological Basis of Psychopathology, etc.).The final tier in the major is the senior seminar and senior thesis. The senior seminar engages students in the examination and discussion of current literature. To meet the thesis requirement, students can spend one semester developing an NSF-style grant proposal, one semester doing a community-based project, or a full year conducting experiments to answer a question of their choosing. Our recent review of theses caused us to require a literature review before the final thesis is written in order to enhance critical thinking and writing skills. However, the overall thesis demand on faculty, in the face of rising numbers of majors, has caused us to re-examine the entire senior capstone experience. Goals for FUN Meeting:1. Discuss the efforts made by other institutions in implementing programs to incorporate, recruit and retain URM students in the sciences.2. Discuss potential laboratory exercises for introductory level neuroscience courses and active learning activities.
Quinnipiac University
Lise Thomas

I’m attending as a neurobiology educator, not a University representative per se. I’m particularly interested in how to provide deep-learning experiences in neurobiology in a classroom setting without accompanying wet labs.
The Neuroscience Concentration at Roanoke College has now existed for 3 years and was built around a common multidisciplinary core with 4 courses including existing introductory Biology and Chemistry courses and a newly designed Principles of Neuroscience course and Research Seminar in Neuroscience course, taught within the Psychology Department, and includes an additional 2 elective courses selected from five different departments. The number of faculty who can teach in the concentration has grown as departments have kept the neuroscience program in mind when making hiring decisions. The number of students graduating with the concentration has grown steadily from 5 to 12, though we expect to see a decline due to unrelated circumstances before continued growth now that the program is in place. It is the only concentration on campus with a required empirical research component which most graduates have completed through the Research Seminar course, which can double count for a requirement within the Psychology Major, but some students have been completing Independent Study in Neuroscience projects as well. Equipment was purchased through a generous contribution from the Academic Dean though the Psychology Department does not currently have the budget to replace existing equipment in the upcoming years. Our goals for the Neuroscience Concentration are to improve the core neuroscience courses, increase the number of neuroscience related courses taught on campus, grow the number of students participating in it, increase the engagement of the students within it, and increase funds to support the program. Specific goals: 1) Improve existing laboratory exercises for the Principles and Research Seminar course, 2) Add Topics in Neuroscience courses from 1-2 other departments, 3) Graduate between 12 and 17 neuroscience concentration students per year, 4) Present 3-5 neuroscience posters per year at regional or international conferences, 5) Establish a mechanism for $5000-$7000 per year of program support. Plans for the future include maintaining a Neuroscience Concentration option while also building a Neuroscience Major within the next 7-9 years that is housed within the Psychology Department. This will likely require the addition of a new tenure track faculty line and strategic hiring for replacement faculty within existing tenure track faculty lines following retirements and therefore requires significant support from the Administration.
(1) Type of Degree? Across the 14 universities of the State System, serving over 110,000 students, no degree program offerings in Neuroscience exist, not as a major, minor, or even as a concentration in Chemistry, Biology, or Psychology departments. This contrasts with the rapid growth in demand for and development of undergraduate degree programs in Neuroscience seen in the United States over the last two decades. Currently there are over 100 academic departments in the US offering undergraduate degree programs in Neuroscience, with more being developed each year (Ramos et al., 2011). Undergraduate degrees awarded in Neuroscience have dramatically increased from approximately 250 in 1995 to over 2,100 in 2012, with no leveling off in sight (Ramos et al., 2011).

(2) Course development or use of existing courses across departments? Needs to be a truly interdisciplinary program for resource reasons. The BS in Neuroscience courses largely or entirely need to be drawn from the existing curriculum of the departments of Chemistry, Biology, and Psychology, and taught from a Neuroscience perspective by participating faculty in those departments as well as by visiting professors who have expertise in Neuroscience.

(3) Each department, to be willing to participate, requires that involvement be “resource positive” for the department. This is against a difficult financial background for the university and college.

(4) Assessment and Accreditation will need to be rigorous, and fit within the framework of our Middle States review (Mission statement; goals and objectives) and the university’s academic master plan.
The growth of both the NS major and the sciences at Skidmore have prompted our NS-affiliated faculty to consider the following questions as we continue to develop. Curriculum review: Our program has historically suffered an identity crises as it has tried to differentiate from a “biological psychology” major to a “neuroscience” major. As a result we are interested in: 1) developing laboratory sessions, 2) integral techniques in NS, 3) NS curriculum development and maintenance. Facilities planning: We are also in the late stages of building planning and would like input on how to best guide this process for our program. Diversity: As a program, and with support of the institution, we seek guidance in 1) serving underrepresented groups and 2) improving study abroad for undergraduate NS students. Faculty support: We would also benefit from discussions about 1) balancing home department and interdisciplinary program needs, 2) securing tenure and 3) grant writing support.
The Psychology Department at Slippery Rock University is currently working to create a new interdisciplinary track in Neuroscience. The goal of the track is to address the needs of students who are interested in research careers in the life sciences, neuropsychology, and medical school. The concept for the track is based on the developmental approach proposed by the FUN/PKAL Blueprint (2008). In the last year, a number of initial goals were met including 1) designing and obtaining approval to add a laboratory component to the Introductory Behavioral Neuroscience course in Psychology, 2) verbal approval from the Biology, Chemistry, Physics, Exercise Science, and Computer Science departments to support the interdisciplinary nature of the track, 3) the development of a draft for the curriculum and sequencing of courses, and 4) verbal approval for the track from both the College Dean and University Provost. Within the next year, our goals are to submit the curricular paperwork for the Neuroscience track for approval at the College and University levels. To gain approval for the track, a number of intermediate goals will need to be met including 1) written confirmation from all departments indicating support for the track, 2) creation of two new courses/labs in Developmental Neuroscience and Clinical Neuroscience, 3) documentation of the goals, objectives, and competencies of the new program, 4) methods for assessment of the new program, 5) a listing of all campus resources to support students in the track, and 6) a compilation of curriculum vitae for all faculty associated with the new program. The University also requires that the new program is justified, needed, and will lead to jobs or additional educational opportunities for students. The justification must be evidence-based (data!) and must demonstrate that the track curriculum is in-line with national standards. The goals for the 2014 FUN workshop is for us to network and gather information from experienced Neuroscience program leaders about the resources, data, and mentoring opportunities for new program development. We would also benefit from opportunities to learn from successes and failures experienced by other developed and developing neuroscience programs, exposure to state of the art teaching and program practices, and exposure to future directions in the field of undergraduate neuroscience education.
Susquehanna University approved an interdisciplinary Neuroscience major this past academic year. There are 26 current students in the program, and the number of incoming freshman Neuroscience majors is currently unknown. I am currently working to establish this nascent Neuroscience program as a truly interdisciplinary, vibrant undergraduate major with active collaboration between the Biology, Chemistry and Psychology Departments. This new program offers a tremendous opportunity to foster collaboration across scientific disciplines and highlights one of Susquehanna University’s major strengths, the opportunity for all students to conduct an original research project in direct collaboration with a faculty member. Dr. Erin Keen-Rhinehart (Biology) is a neuroscientist who has been on the faculty for 5 years and has been the driving force for the neuroscience curriculum; she also advises students interested in neuroscience and conducts research in behavioral neuroendocrinology. One major goal for attending the conference would be to learn what successful predominantly undergraduate institutions are incorporating into their neuroscience programs and how Susquehanna University might ensure the success of this nascent program in a liberal arts setting. I am teaching the first Introduction to Neuroscience course for the new major this fall. Therefore, I am hoping to get ideas about how to make this an active and engaging course, for first year students, distinct from the following, more advanced courses in the Neuroscience major sequence. I am also highly interested in service learning pedagogy, and I am hoping to get ideas on how to incorporate service learning into the introductory course. Finally, I am hoping to garner information about how to overcome the philosophical and logistical obstacles that arise when directing an interdisciplinary Neuroscience program, requiring multiple distinct departments to work together.
UCLA
William (Bill) Grisham

The UCLA team has five goals for this conference:
1) Find out state-of-the art laboratory and pedagogical experiences that are tried-and true and field-tested,
2) Disseminate successful laboratory experiences that we have developed,
3) Promote teaching techniques in line with NSF's Vision and Change report,
4) Promote both the use of and contribution to Educational Resources in Neuroscience,
5) Enjoy the support of like-minded colleagues involved in neuroscience education.

1) Find out state-of-the art laboratory and pedagogical experiences that are tried-and true and field-tested. UCLA has two undergraduate neuroscience majors: students may enroll in the Interdepartmental Neuroscience Major and the Psychobiology Major. Both of these majors have experienced rapid growth, which has created a tension as faculty strive to maintain quality educational programs. Historically, we have learned promising pedagogical techniques via participating in this conference.

2) Disseminate successful laboratory experiences that we have developed. To meet the increasing demands and growing student interest in neuroscience, we have developed extremely low-cost but effective inquiry-based digital labs. We plan on disseminating these in the pre-conference and also at the poster session.

3) Promote teaching techniques in line with NSF's Vision and Change report. We have adopted some of the approaches advocated in the AAAS/NSF Vision and Change report, which have proven to be extremely effective. We plan on sharing these experiences with others.

4) Promote both the use of and contribution to Educational Resources in Neuroscience. One of our team members, Dr. Bill Grisham, was one of the founding editors of ERIN. This resource is a valuable aid to neuroscience educators seeking good quality resources that have been reviewed by a panel of experts.

5) Enjoy the support of like-minded colleagues involved in neuroscience education. This conference has historically inspired collaborations and also inspired our team to reach out to funding agencies to achieve common goals. In short this conference has provided mentorship, congenial fellowship, and FUN.
Goal and interests: (1) Assessment: different types, different approaches to the semester (many small exams instead of a couple hourly exams, for example), different types of test questions (understanding rather than memorization), (2) Hands on learning: in lab section and in a large classroom, (3) Class/Face-time: how best to spend it, how to make it as valuable as possible for students to come to class.
The University of Evansville offers a BS Major in Neuroscience. The program is managed by a Director who is part of the Psychology Department. Required courses are in Psychology (some cross-listed as Neuroscience courses) Biology, Chemistry, Mathematics and Philosophy. As such, we are struggling with ‘sharing students’ or providing adequate space in the classroom for cross-disciplinary course requirements. Our first goal is to find a way to work with colleagues across the sciences so that students have a seamless progression through their degree without interdepartmental strife (course schedules, egos, etc). Another goal is to revise the curriculum offered by faculty in the Psychology Department so that students have more than four courses exclusively in Neuroscience topics. Other departments do not have interest, time and/or expertise to teach courses that focus on Neuroscience (e.g. Neurobiology, Neurochemistry). Finally, the Indiana University Medical School is expanding their campus in Evansville from a 2-year placement to a 4-year placement, along with building a health science education and research center. We want to be ready to forge relationships with the center to provide the best experiences for our Neuroscience Majors considering the wide career options at the intersection of Neuroscience and Medicine.
I have two goals for this year’s FUN workshop. First, I would like to redesign our current capstone course for the Neuroscience Minor, which I teach. I am very interested in seeing other peoples’ syllabi, talking with folks about their favorite textbooks, and getting some general input about what has worked for folks and what has not! I’m also interested in learning whether other institutions require students to take a capstone course for a minor, and what their and/or their department’s “vision” is for such as course? I’ve gone back and forth between wanting to provide a broad overview of the field and alternatively, pushing my students to focus on a few selected topics and really “dig in” to them. Learning to critically read the scientific literature is also a major focus. Because this course also counts toward the Biology major, I teach it from a cellular perspective so it will fulfill a departmental requirement that every student take a cellular or molecular course. Our neuroscience minor attracts biology, psychology, nursing and engineering majors, which results in vastly different levels of biological knowledge, and I’ve found it quite a challenge to develop a method of covering topics that can simultaneously captivate the attention of the most prepared biology major seeking to enhance their cellular and molecular knowledge while not overwhelming a less extensively prepared nursing student or psychology major who isn’t as well versed in the inner workings of the cell. I’d welcome feedback on how to approach this issue! My second goal is to leave the meeting with ideas for an upper division Neurobiology lab that I am responsible for developing. I’d love to leave with a rough outline of techniques I’d cover in such a lab. Once again, this lab would be fulfilling a “cellular” niche for the Biology department, and thus would need to include experiments that approach neurobiology from that perspective. I must admit I’d also love to have a conversation with anyone who might want to play devil’s advocate and suggest that in order to truly experience neurobiology one must approach their research questions from every possible biological level. For my department this would mean spanning cell, organismal, and population biology. Thoughts about how that might be accomplished would be appreciated too!
Ursinus College  
Ellen Dawley, Carlita Favero, and Jennifer Round

CURRENT SITUATION, GOALS, PLANS FOR FUTURE  Our Neuroscience program is just over 10 years old, and we have grown tremendously to about 75 majors served by 6 full-time faculty. We have just completed a program self-study (Fall 2013) and external review (Spring 2014). At this time we have identified the following three goals: 1) Enhanced cohesion and collaboration within the faculty of the Neuroscience program, 2) Curricular reform, and 3) Increased career development opportunities for current students. To accomplish these goals, we plan to 1) Establish monthly meetings and an annual retreat for Neuroscience faculty. 2) Enact curricular reforms in Spring 2015 that include revising our optional 100-level Neuroscience course into a required foundations course for majors containing a recitation rather than a lab, removing the 4-credit research requirement for majors, and increasing scientific rigor for Neuroscience minors. 3) Work with Nu Rho Psi students to foster connections with our alumni and develop more programs to highlight post-graduate careers. We will also increase our visibility by becoming an institutional member of SFN. Our longer term plans include pursuing hiring lines for an animal care technician and a behavioral neuroscientist.

WHAT WE PLAN TO ACCOMPLISH BY ATTENDING THIS WORKSHOP  1) Program Cohesion: How do other colleges share the Neuroscience major between departments? Do other colleges see a dichotomy between psychology-oriented students and biology-oriented students, and is this good or bad? 2) Curriculum: do other colleges provide a Neuroscience course that fulfills the lab science requirement for non-majors? How do we resolve the issue of serving our majors and serving the college core? How strong of a biology base do other colleges require of their Neuroscience majors and minors? 3) Career development: are their efficient ways to keep in contact with alums, forge links between alums and current students, keep track of career opportunities and programs for our majors? 4) Budget: What is an appropriately sized budget for our program? 5) Animal Care: How do other programs achieve consistent, high-quality animal care? Along with the lab intensive workshop, this meeting is certain to be beneficial for our faculty individually and collectively!
We have growing interest in neuroscience amongst both students and faculty, but currently have neither a major or minor. We do offer courses in neuroscience, but as electives or part of the psychology major, not in a formal neuroscience package. Currently the two neuroscientists on campus are in the psychology department (Schmitzer-Torbert and Gunther), but there is a new tenure-track neuroscience/cell bio hire starting this year in the biology department (Walsh). One of the psychology department goals for this next year is to develop a neuroscience minor (consisting of at least 5 courses, preferably cross-departmental) – this FUN workshop is one of the first steps in accomplishing that goal.
Washington and Jefferson College
Kelly Weixel and Ron Bayline

Washington & Jefferson College (W&J) started a Neuroscience Program in 2003. The initial program was designed as an Emphasis in Neuroscience for students majoring in either Biology or Psychology. Since that time, a Minor in Neuroscience was added to allow students from all majors to complete the program. Several students have also designed and completed Thematic Majors in Neuroscience. The Thematic Major is a program at W&J that allows students to design their own major with the support of a Thematic Major committee of three faculty members. Since its inception, the Neuroscience Program has graduated 59 students with either an Emphasis, Minor, or Thematic Major in Neuroscience. Given the success of our students, particularly those who pursued the Thematic Major in Neuroscience, the Neuroscience Program has just added a Major in Neuroscience that combines core courses in Neuroscience with foundational courses in Biology, Psychology, Chemistry, Physics and Math, along with elective courses in Biology, Psychology, Biochemistry, and Philosophy. This 14 course major requires a capstone project of a research project, which may be accomplished by either a summer research internship or an on-campus independent study project. With the addition of the new major, we hope to achieve several aims while at the FUN workshop, including: 1) Is the structure of our Neuroscience Major consistent with expectations for Neuroscience Majors at other institutions? With a limited number of faculty available to teach core courses, we want to be sure that we are creating a rigorous and comprehensive program that will allow our students to be competitive for graduate and medical education and employment in the discipline following completion of the major. We would also like to see how other institutions envision the entry point into a Neuroscience degree. 2) Given the BRAIN initiative, what changes might be anticipated for undergraduate Neuroscience offerings? 3) Are there additional courses, exercises, and laboratories that we can add to our curriculum to improve upon our offerings? We hope to learn about new approaches that we can implement in our curriculum to better aid our students. 4) What mechanisms do other institutions use to assess the quality of their Neuroscience Programs? We have been tracking student outcomes following graduation, but are in need of assessment instruments that we can use to evaluate various aspects of our program.
My goal for attending this workshop is to see what other programs are doing to improve students success, and what WORKS. We have a lot of institutional pressure to increase retention and post-baccalaureate success measures. I’m looking for ideas. Also, because we are a small program looking to grow, I’m interested in the growth strategies other departments have employed.
Whitman College
Leena and Thomas Knight

We are developing a new, team-taught course in Neurophysiology (300-level, with lab) at our institution, which does not have a neuroscience program/major. Our goals for this workshop center on the development of this course, but also involve professional development and support for our individual research programs. Specifically, we hope to:

1) build a professional network of fellow neuroscientists at peer institutions that can serve as resources and collaborators to support our research and educational programs.
2) define key curricular components for our 300-level Neurophysiology course that will best equip our undergraduates with a strong foundation in scientific literacy and neuroscience;
3) develop effecting teaching labs that accommodate student-driven investigation and reinforce core concepts;
4) identify neuroscience-specific learning challenges and strategies for overcoming them;
5) acquire resources for developing both a teaching and integrated research program at an undergraduate, liberal arts institution; and
6) participate in the examination and development of undergraduate neuroscience curricula and resources.
Whitehead Institute
Brad Carter

I am an postdoc with long-term interests in undergraduate education. My personal goals at the workshop are focused on meeting FUN colleagues and making contacts for future research/teaching resources and collaborations.
Goals: Strategies for writing or successfully getting NSF and NIH grants, Learning new lab techniques for neuro courses, discussion of how to organize/create new courses not represented in “normal” neuro curriculum

Lauren Williamson

I am a new professor and visiting faculty in the Psychology department at Williams. Neuroscience is a Concentration here with both Psychology and Biology faculty participating in the program, but there is no sense of group cohesion among the students who choose the Concentration. I would like to think of ways to increase student participation in outreach programs or other group activities that would promote their familiarity with each other and the various faculty who teach in the Concentration. I would also like to get to know other faculty who teach Neuroscience and learn some good “tips of the trade” from more seasoned professors.