SEARLE CENTER FOR ADVANCING LEARNING & TEACHING

ANNUAL REPORT 2012–2013
CONTENTS

Introduction .................................................................................................................................2

I. Programs .................................................................................................................................4
   Faculty Programs
   Graduate Student and Postdoctoral Fellow Programs
   Undergraduate Programs

II. Research and Evaluation .......................................................................................................16
   Ongoing Projects
   New Grant Projects
   New Projects

III. Services ................................................................................................................................23
   For Faculty and Instructors
   For the University and Broader Community

IV. Dissemination .......................................................................................................................26
   Publications
   Talks/Paper Presentations
   University Contributions/Outreach and Professional Development
   Committee Work
   Consulting
   Teaching
   Reviewing
   Professional Development

V. People ....................................................................................................................................30
   Center Staff
   Program participants
   Advisory Board

VI. Appendix: Program Data ........................................................................................................32
INTRODUCTION

Through its wide range of programs, services, research and scholarship, the Searle Center for Advancing Learning and Teaching seeks to assist all members of the Northwestern community who are engaged in the promotion and facilitation of “cutting edge” learning of their students and colleagues – including faculty, post-docs, graduate TAs and instructors, and undergraduate peer mentors, clinicians, and administrators. Through its research and publications, the Center also engages in broad national and international conversations about what constitutes excellence in learning and teaching, and seeks to share new knowledge with those who teach and facilitate learning in higher education.

The Searle Center is composed of four major spheres of activity: Faculty Programs, Graduate Student Programs, Undergraduate Programs, and Research & Evaluation projects, with an Associate Director leading each of these areas. In each of the first three spheres we provide seminars, talks & workshops, designed to provide information and practical guidance on specific topics of learning and teaching, as well as long-term programs designed to prompt more profound changes in participants, such as our year-long Searle Fellows faculty program, our Graduate Teaching Certificate program, and our Gateway Science Workshop program. We also provide a wide variety of linked services, including individual consultation and classroom analysis, as well as resources, including an extensive collection of books on teaching and learning housed in our Center Library. In the research and evaluation sphere, we collaborate with faculty and on a wide variety of disciplinary and cross-disciplinary projects. These range from smaller projects with individual faculty experimenting with new teaching techniques, to evaluation of large NSF- and NIH-funded programs.

2012–2013 Highlights

In the past academic year we continued to extend the work arising from the strategic plan we developed in 2010 and began implementing the several funded projects we had won in the previous year. As a result we have, once again, seen innovation in our programs and projects, and growth in participation of faculty and graduate and undergraduate students and postdocs in them.

- After celebrating 20 years as the Searle Center for Teaching Excellence, we have changed our name to the Searle Center for Advancing Learning and Teaching. We believe this name better encapsulates our ever-expanding scope and reach.
- In our faculty programs area, we used our new technology-enhanced library to offer our first workshops online to better reach out to our community. We offered a range of sessions on issues related to diversity, allowing participants to explore questions about race and gender in a meaningful and productive way.
- In the graduate programs area, our collaboration with The Graduate School resulted in strong campus participation (273 grad students) in the New TA Conference and 63 graduate students from over 30 disciplines in the Teaching Certificate program. We created a collaboration with Evanston Township High School and graduate students who taught college prep courses for the AVID program, and launched CIRTL at Northwestern.
- In the Undergraduate Programs area, we continued to develop the Academic Mentoring Program (AMP), adding new courses, and were funded to create a partner program also targeting underprepared students, which we will focus on during the 2013–14 academic year. We ran GSW in the new biology sequence, with more than 1,000 registrations across disciplines. We were also able to leverage the Science Research Workshop (SRW) program to streamline our work with the NuBioscientist program, with approximately 50 students funded for summer research.
• In our funded projects, in addition to having successfully implemented projects on critical thinking (funded by the National Science Foundation), and curriculum redesign and faculty development in the Introductory Biology course sequence (funded by the Howard Hughes Medical Institute), we currently have 16 research/evaluation projects. A further 3 projects are currently under review for external funding.
• We also published a new book by Harvard University Press on the Gateway Science Workshop program.

In addition our staff have taken leadership roles in a range of new university wide strategic ventures, including the university diversity curriculum initiative, MOOC course development, and Learning Management System review. But these are just a few of the activities that the Center has engaged with over the past year. I encourage readers to learn more for themselves!

— Greg Light, Director
The Searle Center provides a variety of programs for faculty, graduate students, and undergraduate students. These range from one-off workshop sessions to your-long programs designed to change participants’ approach to teaching.
Faculty Programs
Substantial, longer-term programs

Critical Thinking in STEM (CTIS)
(NSF: Course, Curriculum and Laboratory Improvement (CCLI) award $227,000 over 3 years). This project is a collaboration between the Searle Center and the City Colleges of Chicago (CCC) to design, pilot, and study a Science, Technology, Engineering, and Mathematics (STEM) faculty development program focused on improving higher order learning outcomes of STEM students. Nineteen faculty – 10 faculty from CCC and 8 from Northwestern are participating in the project and are aiming to improve the critical thinking of students in one undergraduate STEM class that they teach. The Critical Thinking Assessment Test (CAT) was administered to students at the beginning and end of the quarter/semester to measure the gains that students typically make in critical thinking. Gains in critical thinking were also assessed using course specific questions developed by faculty. Faculty developed new activities to enhance critical thinking over the summer and implemented them in their classes this year. They then reviewed their data to see if larger gains on the CAT test and course specific measures of critical thinking.

nuViBE Faculty Development Project
Intro BioSci Faculty members teaching the large introductory biology classes (~500 students per year) met at the end of each quarter to discuss the revised Intro BioSci curriculum. These discussions are facilitated by Searle Center staff and are forums for continuing improvements for the curriculum. All seven new courses (BioSci 215-218, 220-222) were offered in 2012-2013, with BioSci 215 offered for the second time. Lecture courses incorporated various active-learning methods, and laboratory courses changed from cookbook exercises to open-ended, exploratory research projects. Two of the 10 faculty members in the faculty and curriculum development project presented posters at the Society for the Advancement of Biology Education Research in July 2013. The Searle Center will continue to work with this faculty group, as new members are rotated into teaching the introductory biology sequence.

Searle (Junior/Early Career) Fellows Program
The Searle Fellows program is a comprehensive, year-long (eight month) faculty development program for pre-tenure, early career faculty. The program seeks to provide faculty with the expertise and knowledge to critically assess and solve problems in their courses. To participate in the program, applicants must provide a description of a teaching project related to a course they teach. In most cases, faculty are nominated for the program by deans or department chairs and self-select in or out according to their ability to participate in all program events.

The program has two main objectives: (1) to strengthen the participants’ knowledge, understanding, and expertise in learning and teaching; and (2) to help them develop a project that will foster deep student learning. These projects usually focus on the development of a new course or curriculum, the revision of an existing course or curriculum, or the revision of a key assessment strategy in a course, curriculum, or other learning context. During the year, faculty participate in 4 dinner meetings, an overnight retreat in fall, a full-day retreat in spring, 3-4workshops, 3 project meetings, evaluation activities (small group analysis of their class etc.), development of a project related to a course they are teaching. Fellows must communicate their project findings and reflections through a written critical account, a group poster, and presentation at the final celebratory dinner. Rick McGee, associate dean for faculty affairs in the medical school, helps facilitate the program. The Feinberg Academy of Medical Educators (FAME), led by Jon Lomasney, also participated in the
This year, 17 early-career tenure-line faculty completed the full program. Sixteen senior faculty served as their mentors. Of these, 5 were returning mentors, and 1 was a former Fellow. We built a “capacity-building” element to the program, where faculty (especially those in FSM) met to develop roundtables and workshops for their home departments. Jyothy Puthomana, from Cardiology, was the first to offer a session for colleagues in his department.

**Shorter, One-Off Sessions**

**Faculty Workshop Series**
We offered 12 workshops this year, focusing on a range of topics including promoting critical thinking, assessment and grading, and course evaluation. Two of these workshops (Course Design) were offered online, to improve access for instructors who find it challenging to come to our workshops in person.

**New Faculty Workshop**
This year, we returned to our customary format to introduce new faculty to teaching and learning at Northwestern. This full-day interactive session featured an overview of designing learning objectives, promoting active learning, and assessing student learning. During the sessions we incorporated “clickers” to engage the participants more fully. We also offered a session with Academic Research and Technologies staff, one resource panel with undergraduates, and one with representatives from various campus divisions (CAPS, Athletics, disabilities, and academic integrity), and a student panel. 53 new faculty participated in the program.

**Special Topics Roundtables**
We offered 3 roundtables to promote dialogue about three special topics, collaborating with different units to connect with faculty and graduate students and postdocs with whom we might not otherwise contact.

- Teaching Difference: Bringing diversity and social inequality into classroom
- Recognizing and Responding to Students in Distress (with CAPS)
- Twitter in the classroom? Using Online Communication to enhance learning

**Teaching, Learning & Technology (TLT) workshops**
In collaboration with Academic and Research Technologies, we offered the Clickers Learning Forum, a half day event designed for instructors to effectively incorporate personal response systems (“clickers”) into their teaching. We also offered two workshops on “Using Rubrics to Enhance Learning,” which focused on both the pedagogy surrounding the use of rubrics, focusing on the new rubric function in Blackboard.

**University Teaching Roundtables (UTR)**
The UTRs are sponsored by the provost and hosted by the Searle Center. Each roundtable–meant to be an interdisciplinary forum exploring current topics in teaching and learning–is led by a Charles Deering McCormick Professor of Teaching Excellence, a McCormick Distinguished Lecturer, or an Alumnae of Northwestern Teaching Professor, the highest awards for teaching offered by the university. Recipients are appointed as fellows of the Searle Center and contribute to Searle events.¹

¹ Please see Appendix for details.
Specialized Workshops and Sessions
We also conducted specialized workshops and sessions for FSM, WCAS and Theater, tailored to the needs of individual departments and programs. We offered an orientation for new Calculus faculty (WCAS); a workshop on ‘getting beyond CTECs’ for the Spanish Department (WCAS), a roundtable on teaching sensitive topics for the theatre department (Theatre), and a workshop on lecturing in a medical school context (FSM).

Graduate Students and Postdoctoral Fellows Programs
The Center runs a number of programs that support graduate students in their professional development at various levels throughout their career.

New TA Conference
This one-day conference is held every September the week before classes begin, and prepares graduate students for their first teaching experience. This year the conference included 18 discipline-specific workshops to orient TAs to their roles and responsibilities in their department, as well as 16 sessions on topics such as preparing for the first day of class and leading discussions. All workshops are developed and facilitated by trained graduate students, known as Teaching Assistant Fellows and Graduate Teaching Fellows.

At the New TA Conference we train graduate students as new TAs, offer continuing support as they develop their approach to and practice of teaching, and provide extensive preparation for teaching at the college and university level. Please see the Appendix for more detailed information on participation in and evaluation of these programs. 312 new TAs registered for the event in September 2012. On a 5-point scale, the average evaluation rating for the conference sessions was 4.2.

Graduate Workshop Series
To provide continuing support to graduate students in their teaching, we offer interactive workshops throughout the year. Workshops are developed and facilitated by Center staff as well as trained Graduate Teaching Fellows. This year we offered 11 workshops on topics such as “Teaching Tough Texts” and “Pedagogy in the Digital Age.” We had a total of 260 graduate students attend our workshops throughout the year, with a range of 13-47 students at each session. On a 5-point scale, the evaluation average for this series was 4.31.

Teaching Assistant Fellows and Teaching Consultants
The Searle Center provides four days of training for the Teaching Assistant Fellows to develop and implement workshops at the New TA Conference. They are trained for two days in June on developing workshops on teaching and learning in their discipline, and again in August to develop their sessions. This year, we had 18 Teaching Assistant Fellows participate in the program. Outstanding Fellows can be appointed as Teaching Consultants, where they receive further training in classroom practice and observation. They conduct Small
Group Analyses (SGAs) for faculty and graduate students. We employed 10 Teaching Consultants this year.

Graduate Teaching Certificate Program
This twelve-month program prepares graduate students to teach at the university level through a series of workshops, seminars, and small-group discussions. Over the course of the year, participants develop a course design project, a strong teaching philosophy, and a teaching portfolio. It is the only program at the Center that offers a Certificate of Achievement to acknowledge that work is evaluated by Center staff. The Searle Center and The Graduate School jointly funded 6 part-time Graduate Teaching Mentors who assisted the Associate Director by running discipline-specific, small-group discussion, providing feedback and guidance to participants, and helping with program coordination. This year there were 65 graduate student participants.

Our primary goals for the coming year are to:

- Accommodate another large cohort while maintaining the same level of mentorship and a format that allows for productive discussions.
- Revise the curriculum to reflect Northwestern’s participation in the Center for the Integration of Research, Teaching, and Learning (CIRTL) Network by developing a STEM-focused “track” within the program.
- Strengthen the program component that focuses on the importance of recognizing diversity in the classroom and require students develop a diversity statement for their teaching portfolio.

Graduate Teaching Fellows Program
The Graduate Teaching Fellows are group of eight graduate students with a demonstrated commitment to teaching excellence who wish to further develop their teaching and professional skills and contribute to the pedagogical development of their fellow graduate students. Appointed for a full academic year, they work with the Searle Center staff to develop programming and resources to improve graduate student teaching at Northwestern. Selected in the spring via a competitive application process, the Fellowship comes with a stipend of $3000, funded by The Graduate School.

This was the third year for the program. Among other activities, the Graduate Teaching Fellows developed workshops for the New TA Conference and the Graduate Workshop Series; conducted teaching observations to provide feedback to graduate students on their teaching; and developed discipline-specific projects aimed at providing mentorship and improving the teaching of graduate students in their home departments.

CIRTL at Northwestern
The Center for the Integration of Teaching Research and Learning (CIRTL) is a national NSF-funded teaching and learning center in which member institutions work to advance the teaching of science, technology, engineering, and mathematics (STEM) disciplines in higher education, particularly by providing programs for future faculty professional development. The program will emphasize the three CIRTL core ideas: Learning-Through-Diversity, Learning Communities, and Teaching-as-Research.

In collaboration with Rob Linsenmeier (Biomedical Engineering), we have initiated the CIRTL at Northwestern program, which includes three components: Mentored Discussions of Teaching, a STEM-focused track of the Certificate Program, and a series of STEM-specific workshops. Mentored Discussions of Teaching was initiated in spring 2013, and connected 22 graduate students and postdocs across Weinberg, Feinberg, and McCormick with 10 faculty members to observe classes and discuss teaching. The program attracted more than twice as many graduate students and postdocs as we could place. We expect to accommodate future applicants this fall and strengthen the program with clearer expectations for the participants.
We have recruited a graduate assistant (supported by the NSF grant) to assist with growing CIRTL at Northwestern in 2013–2014. She will assist with the implementation and evaluation of the three component programs.

**Departmental Workshops and Other Interventions**

In addition to our regular programs, we collaborated with several departments and programs to provide workshops aimed specifically at their particular interests. These included a session on how to develop teaching practices as a graduate student for the School of Music, a workshop on developing a statement of teaching philosophy for the Department of Political Science, and a session on the job search in the Department of English. We also provided individual consultations to numerous graduate students and post-docs on issues such as classroom management for TAs and course design. We are also working with the Department of History to implement a graduate professional development project funded by the Teagle Foundation to help students learn the discipline.
Undergraduate Students Programs

STEM Programs

Gateway Science Workshop (GSW) program
The Gateway Science Workshop (GSW) is a peer-led program designed to promote performance and retention of students in introductory “gateway” course sequences in chemistry, biology, math, physics, and engineering. Students attend weekly sessions in groups of 5 to 7, in which they tackle challenging course-related problems, which are developed by course faculty. They are led by a student facilitator who has previously done well in the course. They are led by a student facilitator who has previously done well in the course. Workshops are offered for Biology 215, 216, 217, and 218, Chemistry 101-102-103, Engineering Analysis, Math 211, 220-224-230 and 212-213-214, and Physics 130 & 135. During 2012-2013, we had 1028 registrations, served 108 individual classes, and worked with 62 faculty members and 4 graduate students. (See Appendix for a breakdown of student registrations by discipline.) In the past year, we have engaged in the following activities to enhance the GSW program:

- We continued to develop a problem database, which will allow faculty to easily find appropriate worksheet problems for the GSW weekly sessions.
- We enhanced training for GSW facilitators by offering several “in-service” opportunities, including a discussion with Lesley Ann Brown, Director of Campus Inclusion and Diversity.
- In an effort to increase the number of underrepresented minority (URM) students who participate in GSW workshops, the program participated in “meet and greet” events with students from EXCEL, BioEXCEL, SAW, Society of Black Engineers, Society of Women Engineers, the Society of Hispanic Professional Engineers and One Step Before (minority premedical society). Members of these organizations were given priority registration in GSW throughout the academic year.

GSW Facilitator Training Program (SESP 291)
SESP 291 is a one-credit course taken over three academic quarters, offered through the School of Education and Social Policy. All first-year GSW facilitators are required to enroll. The course is designed to provide facilitators an opportunity to develop their knowledge, understanding, and practical skills in mentoring and in facilitating groups within the practical requirements of the GSW program. Course goals are to introduce facilitators to the literature on learning and teaching; to familiarize facilitators with pedagogical methods relevant to mentoring and small-group facilitation; to provide them with the opportunity to discuss, reflect on, and enrich their facilitation experience in a way that enhances their workshop practice; and to encourage them to establish a supportive community among their students and fellow facilitators. SESP 291 students also engage in a group research project, investigating a genuine pedagogical problem related to GSW. At the end of the year, students present their projects and findings at a poster fair. 79 students enrolled in SESP 291 during 2012–2013.

Science Research Workshop (SRW) program
The Science Research Workshop (SRW) Program is an apprenticeship-style program designed to encourage undergraduates to major in science by engaging them in authentic scientific research during their early years at Northwestern. There are 12 total workshops; 3 in the fall to help students find laboratories, and 9 in the Winter to help student develop independent research proposals. The workshops consist of two main sections: 1) a faculty-led “science café” and 2) a peer-led workshop. During the science café, academic faculty share motivational and education stories about their careers as undergraduates, graduate students, and young professionals. The workshops are led by upperclassmen who have participated with undergraduate research,
received training in small group management, and have written successful proposals. These workshops help participants develop their independent research proposals step by step.

In 2012-2013, the SRW Program helped 19 undergraduate students (9 freshmen, 5 sophomores, 5 juniors) find laboratories and develop independent research proposals. For the first time this year, the SRW program was designated as a zero-credit General Liberal Arts course (GEN LA 190-0) that appeared as a notation on the student transcripts. 15 of the 19 students involved with the program chose to enroll in the course officially, while the other four decide to participate without registering. The program also had 15 student facilitators that were shared with the NU Bioscientist program. These students were a combination of former SRW and NU Bioscientist students.

12 out of the 19 SRW students were awarded a summer Undergraduate Research Grants through the Provost office. 6 SRW students received total or partial funding from either Weinberg College or the Program in Biological Sciences. 1 student chose not to pursue research in the summer after not receiving the Summer URG but plans to conduct research in 2013–2014.

Future Plans: In 2012–2013 the SRW program was run in the same workshops as the NU Bioscientist program. Next year, the two programs will be run separately because the students from the two programs did not always work effectively together. Feedback from the students revealed that the students felt the goals and stakes for the two programs are somewhat different and they would prefer separate sessions for the two programs. Separating the two programs will allow for more flexibility in the presentation of course material and more one-on-one time with the instructor.

**NU Bioscientist Program**

The purpose of the NU Bioscientist program is similar to the SRW program, however this program is restricted to incoming freshmen who have to apply for admission. In 2012-2013 the NU Bioscientist Program invited 30 incoming freshmen out of 120 applicants to participate in our year-long research preparation program. These students took two specially designed freshmen seminars, Biological Thought and Action which was taught by Drs. Heather Pinkett and Tania Munz in the fall quarter, and Science Research Preparation which was taught by Drs. Luke Flores and Christina Russin. Biological Thought and Action provides an introduction to inquiry-based science, places biological research in a societal and historical context, and communicate the nature of science. In Science Research Preparation the students learn basic research skills in a laboratory setting and develop an independent research proposal in workshops that were run together with the SRW students.

Out of the initial 30 invitees, 27 were able to secure laboratory placement and performed satisfactorily in their two seminar courses to be awarded their summer research grants, which were awarded through the HHMI-funded nuViBE program. 2 students chose to leave the program for academic reasons; the other failed to secure a laboratory placement after 5 months and was asked to drop the program. Mentoring: The program also worked with 24 graduate student and post-doc mentors in a series of 6 workshops designed to help them develop their mentoring skills. These mentors We are also tracking the 2011-2012 cohort of students to gauge how many are continuing with research one year after their initial research experience.

12 NU Bioscientist students applied to be student facilitators for the program in 2013-2014, including 10 first year students. As of July 29th, 30 incoming freshmen have accepted their invitation to be part of the program in
2013-2014. All are Weinberg students, except for 3: 1 is McCormick School of Engineering and Applied Sciences, 1 is School of Education and Social Policy, and 1 is Integrated Science Program.

This is the final year of support from the HHMI grant; our goal is to secure the program will be sustained by the University after grant support.

BioEXCEL Summer Bridge Program
The BioEXCEL program is a summer bridge program that promotes academic preparation, leadership, and community building with a special emphasis on students from underrepresented populations. BioEXCEL welcomed its third class in the summer of 2013. 18 students (10 female, 8 male) participated in our intensive 5 week program in which they took courses in Chemistry, Calculus, Biological Research Highlights, and Leadership. The program also features guest speakers and site visits to provide the students with role models and resources that will be useful to them during their four years here at Northwestern. The students lived together in a residential hall on-campus and participated in community building activities under the guidance of 6 upperclassman counselors, many of whom are former participants of the BioEXCEL program themselves.

An unprecedented 16 undergraduate students applied to be counselors for the program this summer. As the program continues to grow, this number of applicants should be expected if not more so. 5 graduate students in the Chemistry and Math departments were hired to teach calculus and chemistry courses for the BioEXCEL participants. The program offers 2 levels of Chemistry and 3 levels of Calculus at vary levels of expertise. The 2 Chemistry instructors were returning from last year’s program, whereas the 3 Calculus instructors were all new to the program this year. Survey and focus group data will be gathered to determine instructor effectiveness and whether or not to rehire next year.

Future Directions: The BioEXCEL program has been supported by the Howard Hughes Medical Institute (HHMI) since 2011, but funding is set to expire after this summer. The BioEXCEL program was able to secure 3 years of funding from Weinberg College of Arts and Sciences ensuring that the program will continue at least until the summer of 2016. The BioEXCEL program also began exploring the possibility of expanding by inviting 5 chemistry majors to participate in our program. We invited 8 chemistry majors this year, but were not able to convince any to participate. Next year, we will work in closer coordination with the Chemistry Department to identify and recruit potential students to join the program.

Gateway Program in Biology Labs
The Searle Center is working in collaboration with the WCAS Program in Biological Sciences (PBS) to revamp the GSW program in line with the goals of the HHMI grant awarded to the University. In keeping with the goals of the grant to promote active learning in introductory biology courses, the GSW format moved to lab courses in 2012–2013. Undergraduate peer leaders guided small groups of their peers through lab sessions designed to engage students in active, conceptual thinking, rather than taking a more traditional “cookbook” approach to lab work. These small-group discussions focused on the process of science, including structuring testable hypotheses, designing controlled experiments, analyzing data, and drawing conclusions from them. The Searle Center will continue to work closely with PBS faculty over the coming year to ensure that the program gets off the ground successfully and meets the goals of the larger initiative.
Multidisciplinary Programs

Academic Mentoring Program (AMP)
The Searle Center took on management of the Academic Mentoring Program (AMP), in 2012-2013. AMP provides academic support for undergraduates enrolled in introductory courses known to be difficult for many students. Mentors – fellow undergraduates who have taken and done well in the course – meet weekly with a group of students to discuss and work through questions and problems the students have about their coursework. Mentors participate in training and regular meetings with AMP staff, and provide regular feedback to faculty about their groups’ progress. Students are required to commit for the full quarter, so that the groups have an opportunity to build a sense of community, and so that the students and mentor become comfortable with one another. The groups meet at a set time and location each week for one hour. Students are expected to attend all sessions and prepare for each session in advance.

In 2012–2013, AMP ran in Macroeconomics (Econ 201), Microeconomics (Econ 202) Introduction to Statistics for the Social Sciences (Stat 210), Introduction to Psychology (Psy 110), and Finite Math (Math 202), with 414 student registrations and 24 student mentors participating.

This year, we requested and received approval to list AMP on CAESAR, so that next year students will be able to register through the main CAESAR system, and will have a notation on their transcripts indicating they have participated in AMP.

Goals for next year include
- Expanding the program to additional courses
- Continuing to review evaluation data and make program adjustments as appropriate
- Develop a newly funded expansion program, tentatively called UPAL (Undergraduate Program for Advancing Learning), with the goal of supporting students with nontraditional academic backgrounds throughout the first year.
Student-Organized Seminars (SOS) Leader Development Program
This program supports undergraduates who lead student-organized seminars (SOSs). These seminars are student-created, student-led, credit-bearing courses, sponsored by a faculty member in the relevant department, and offered through the School of Communication, the School of Education and Social Policy, and the Weinberg College of Arts and Sciences. Undergraduate SOS leaders gain depth of knowledge of their seminar topic, as well as valuable leadership, organizational, and mentoring experience.

The Searle Center program focuses on developing leaders’ understanding of teaching and learning concepts, ability to effectively facilitate learning for individuals and groups, and skill in using reflection and feedback for continuous improvement.

Eighteen undergraduate leaders took part in the program during 2011–2012.

Goals for next year include
- Developing a guidebook for student leaders.
- Bringing former leaders into the program as mentors for current leaders.

Undergraduate Teaching and Learning Committee
The Searle Center launched its Undergraduate Teaching and Learning Committee in spring 2011. Composed of undergraduates from a variety of Northwestern schools, majors, and academic years, the Committee exists to
- give undergraduates an informed voice in the larger teaching and learning discussion at Northwestern
- provide responsible undergraduate feedback to faculty and graduate students and postdocs about teaching
- create a dialogue among undergraduates about teaching and learning
- include an undergraduate perspective in Searle Center programs
- develop undergraduate-driven teaching-and-learning resources to benefit the University community
- help create a University culture in which undergraduates are both learners and facilitators of learning

During 2012–2013, the Committee had 8 student members, working in three project groups. One group focused on investigating possible enhancements to the CTEC, and worked in collaboration with the CTEC office to develop surveys for faculty and students, with the goal of learning how CTECs are perceived and used by different audiences. A second group focused on grading practices, surveying faculty and students about their practices and perceptions around grading. The third group focused on identifying excellent teaching practices, and has developed a survey to gather student testimonials about excellent teachers. These groups will continue their projects during the next academic year.

Goals for 2013–2014 include
• Continue to create a sense of community: Increase communication among members, increase number of meetings.
• Introduce subgroup coordinators to improve communication within subgroups and to larger group.
• Provide more structure to help groups develop project ideas.

Student-Organized Seminars (SOS) Leader Training Program
This program supports undergraduates who lead student-organized seminars (SOSs). These seminars are student-created, student-led, credit-bearing courses, sponsored by a faculty member in the relevant
department, and offered through the School of Communication, the School of Education and Social Policy, and the Weinberg College of Arts and Sciences. Undergraduate SOS leaders gain depth of knowledge of their seminar topic, as well as valuable leadership, organizational, and mentoring experience.

The Searle Center program focuses on developing leaders’ understanding of teaching and learning concepts, ability to effectively facilitate learning for individuals and groups, and skill in using reflection and feedback for continuous improvement. Eighteen undergraduate leaders took part in the program during 2011–2012.

Goals for next year include
- Developing a guidebook for student leaders.
- Bringing former leaders into the program as mentors for current leaders.

**Undergraduate Teaching and Learning Committee**

The Searle Center launched its Undergraduate Teaching and Learning Committee in spring 2011. Composed of undergraduates from a variety of Northwestern schools, majors, and academic years, the Committee exists to
- give undergraduates an informed voice in the larger teaching and learning discussion at Northwestern
- provide responsible undergraduate feedback to faculty and graduate students and postdocs about teaching
- create a dialogue among undergraduates about teaching and learning
- include an undergraduate perspective in Searle Center programs
- develop undergraduate-driven teaching-and-learning resources to benefit the University community
- help create a University culture in which undergraduates are both learners and facilitators of learning

During 2012–2013, the Committee had 8 student members, working in three project groups. One group focused on investigating possible enhancements to the CTEC, and worked in collaboration with the CTEC office to develop surveys for faculty and students, with the goal of learning how CTECs are perceived and used by different audiences. A second group focused on grading practices, surveying faculty and students about their practices and perceptions around grading. The third group focused on identifying excellent teaching practices, and has developed a survey to gather student testimonials about excellent teachers. These groups will continue their projects during the next academic year.

**Goals for 2013–2014 include**
- Continue to create a sense of community: Increase communication among members, increase number of meetings.
- Introduce subgroup coordinators to improve communication within subgroups and to larger group.
- Provide more structure to help groups develop project ideas.
RESEARCH AND EVALUATION PROJECTS

The Searle Center is involved in a variety of research and evaluation projects on teaching and learning in higher and professional education. While some of the projects are undertaken independently by the Searle Center, the majority involve collaborations with faculty, often across multiple departments. Activities in this area include conducting research studies, evaluating programs and assisting faculty with writing of the pedagogical components of grant proposals to funders such as the National Science Foundation (NFS), the Howard Hughes Medical Institute (HHMI) and the National Institutes of Health (NIH).
Ongoing Projects

Academic Mentor Program (AMP) Evaluation
AMP is a small-group, peer-led tutoring program which was piloted in 2011-12 in Economics, Statistics, and Psychology, developed jointly by Searle and the University Academic Advising Center. We evaluated the program throughout the academic year, using a waitlisted control group, and examining grades as well as student motivation and approaches to the coursework, as well as student and mentor satisfaction. Results suggested a positive impact of the Program. Findings were presented to the Undergraduate Council and used to make mid-course changes in program policies and practices in order to continue improving quality. Evaluation will continue in the third year of the program.

Engineering Workshop Program (EWP)
Completed its 11th year. McCormick School of Engineering continues to fund this extension of the GSW program and its evaluation in engineering. Evaluation continues to focus on performance and retention. An analysis of pooled data was also conducted for EWP. As with GSW, positive effects of the program were seen.

Engineering Undergraduate Student Experience Project
In spring 2012, we collaborated with a McCormick faculty member to investigate undergraduates’ experience in their academic programs, with a focus on gender differences in the relationships among motivation, satisfaction, academic fit, and commitment to the discipline. A second set of data was collected in 2013; analysis is ongoing.

Gateway Science Workshop (GSW) Program Impact
This project, investigating the impact of a small-group learning program on performance and retention of undergraduates in STEM disciplines, commenced in 2001 and was originally funded by a 6-year grant from the Andrew W. Mellon Foundation. The program and program evaluation continues through funding from Northwestern and analysis of data on course grades and retention continues. We have continued to build a database, now pooling data from more than 11 years. These pooled analyses revealed an overall positive impact of the program on course grades and retention, with larger retention effect sizes seen for minority students in several courses. The book, “Making Scientists”, which draws on the GSW experience was published in the Spring of 2012 by Harvard Press. A paper presenting the 10-year results has been submitted to the Journal of Educational Research and Evaluation.

Howard Hughes Medical Institute (HHMI) Grant
(Howard Hughes Medical Institute grant SP0008821 $2,000,000 over 4 years.) This project is a collaboration between the Howard Hughes Medical Institute and Northwestern University to undertake a major reform of its undergraduate biological science training program by emphasizing inquiry-based learning and by introducing students early on to the compelling realities of laboratory investigation, providing a research-informed context for scientific learning from the first months of matriculation through graduation. Data have been collected on course grades, course retention, performance on several standardized biology concept inventories, student interest in biology and science and student experience of the new Biology course sequence. Data on experience of faculty, teaching fellows and graduate research mentors in the program have also been collected.
Mellon-Mays Undergraduate Fellowship Program Evaluation
The Searle Center is managing the evaluation of this program, for which Northwestern was awarded $500,000 over 5 years. The program aims to increase the number of minority students who pursue PhDs in the humanities and social sciences. The goals of this primarily qualitative evaluation are to better understand students’ experiences in the program, including their development as academic researchers, their relationships with faculty mentors, and their general satisfaction with the program structure and policies. We have provided findings from the first year of the evaluation to Program directors; recommendations based on these findings have contributed to continued improvement of the Program. Evaluation is ongoing and will continue next year, as the Program has received a renewal of funding.

Extension of GSW Social-Comparison Concern Study
We applied for and were rewarded a $3500 grant from The Alumnae of Northwestern University to extend an experimental study we ran in 2010-11, in which modifications were made to the GSW program in an effort to help reduce student concern over being negatively compared with others in the groups. Results of the preliminary study were encouraging, with a paper currently in press; the extension study was completed in winter 2013.

Student Experience in and Perception of Biology Laboratory Experiences
This project was funded by the Hewlett Fund at Northwestern University for $5189.04 from Spring 2012 to Summer 2013 and is lead by Stanley Lo from the Searle Center. The goal of this project is to identify and compare characteristics of different forms of laboratory experience (traditional, inquiry-based, and independent research) in the biological sciences and to understand how these experiences affect student learning. Specific areas of interest are: 1) sense of community, 2) help-seeking strategies, 3) ability to cope with challenges in scientific inquiry, 4) sense of personal achievement, 5) perception of connections between scientific inquiry and societal issues, and 6) understanding of scientific inquiry. This information is intended to better inform how to design scientific inquiry programs and laboratory experiences that engage students in meaningful learning activities. While the project is focused on the experience of students in the biological sciences, the outcomes should be applicable to other related STEM disciplines that rely on scientific inquiry and have laboratory courses.

Student Conceptions of Chromosome Segregation
Professor Robert Holmgren from the Biology department Stanley Lo from the Searle Center and Su Swarat now at  have collaborated on this project to explore how students conceptualize “chromosome segregation”, an important yet difficult concept in genetics. They are particularly interested in identifying learning obstacles, and the possibility of using this knowledge to inform the design of instructional interventions. Data are currently being analyzed.

Student Conceptions of International Experience (SCIE)
To better understand students’ international experience through study abroad, the Buffett Center for International and Comparative Studies and the Searle Center for Teaching Excellence launched a collaborative project in the summer of 2007 called the Student Conceptions of International Experience (SCIE). Based on results of a phenomenographic study of undergraduate students’ conceptions of international experience, a 70 item survey instrument to assess students’ conceptions of and approaches to international experience was developed. The new 45 item survey was piloted with students from several different universities in the Winter and Spring of 2013. Data analysis is currently underway and expected to be completed at the end of Summer 2013.
This project is a collaboration between Professor Tom Mason from the Department of Materials Science and the Searle Center. Students in Professor Mason’s Modern Materials and Society Course MatSci-101 are randomized to a) interview and shadow a graduate student in an on-campus lab or b) work in a small group lead by a graduate student to design/redesign an in-class demonstration or experiment. We hypothesize that students in the “Shadow a Scientist” group will have more positive attitudes towards, and understanding of the scientific method/engineering design method than students in the “Design a Demonstration” group. Preliminary data partially supporting the hypothesis have been obtained from the first year of the program. A second round of data collection will begin in Spring 2014. The impact of the program on graduate students’ attitudes toward and confidence in communicating science to the general public are also being examined.

NEW: An Interactive Steel Connection Teaching Tool – A Virtual Structure
The Searle Center is providing consultation on this NSF Transforming Undergraduate Education (TUES) funded project. The project is lead by Prof Karen Chou from the department of Civil and Environmental Engineering at Northwestern. To enhance students understanding of steel connections, Prof Chou has created an innovative, web-based interactive version of a steel sculpture. The virtual sculpture shows the close up view of each connection with description of how it may be used, potential failure modes, sample calculations, and field examples. The Searle Center is working with Prof Chou to collect pilot data on student experience interacting with the tool.

Ongoing Research Projects in Faculty/Instructor Development & Learning

Enhancing Critical Thinking in STEM Disciplines: A Faculty Development Model
(NSF: Course, Curriculum and Laboratory Improvement (CCLI) award $227,000 over 3 years). This project is a collaboration between the Searle Center and the City Colleges of Chicago (CCC) to design, pilot and study a Science, Technology, Engineering, and Mathematics (STEM) faculty development program focused on improving higher order learning outcomes of STEM students. Sixteen STEM faculty – 9 faculty from CCC and 7 from Northwestern completed the program. Data on student learning gains on the Critical Thinking Assessment (CAT) test and the course specific assessments of critical thinking developed by faculty are currently being analyzed. Qualitative data on changes in faculty conceptions of critical thinking, teaching and assessment are also being examined.

CTEC Pilot Study
In collaboration with the office of the registrar and the university assessment council, the Searle Center piloted a small study in which we added questions about learning outcomes to the university CTECs. 10 faculty participated in the study in Fall 2012, with another 8 participating in Winter and Spring. While we have not completed the full analysis, our preliminary findings suggest that of the students who understand what learning outcomes mean, most were able to indicate whether they course was successful aligned around learning.
Palestinian Faculty Development Program
(USAID/AMIDEAST/Open Society; $200,000 over 2 years). The Center has partnered with An-Najah University in Nablus in the West Bank over the past 3 years as part of a program to increase the use of student-centered teaching at An-Najah University and in Universities in the West Bank more broadly. An-Najah University has established a Center for Excellence in Learning and Teaching (CELT) and is using a train-the-trainer approach to develop a cadre of faculty who will deliver workshops on teaching and learning to An-Najah faculty. Funding for this project has been extended until December 2014. AMIDEAST have recently asked us to continue our work in learning and teaching with Palestinian Universities through 2014. We are currently discussing what this would consist of.

NEW: Evaluation of the Sierra Community College Critical Thinking Workshop
The Searle Center created and administered pre and post-workshop surveys to assess the short-term impact of the workshop conducted by Susanna Calkins and Denise Drane in June 2013. Faculty participants reported that they had a deeper understanding of critical thinking and greater confidence in developing learning outcomes, learning activities and assessments related to critical thinking as a result of participating in the workshop. A longer-term assessment of the impact of the workshop will be conducted in late 2013.

NEW: Evaluation of online programs (Needs assessment) for School of Continuing Studies (SCS)
The Searle Center designed a needs assessment of the online programs currently being offered through the School of Continuing Studies. Using focus groups, surveys, small group analyses and structured observations, we have begun to collect data which will be more fully analyzed in late 2013.

Searle Fellows Research and Evaluation
Research over the past 8 years has focused on participants’ conceptions of teaching, learning, research and mentoring and on how faculty understand relevance in their teaching. This year, we completed a research project on how medical faculty conceive of teaching; a research project on how senior faculty members mentor their junior colleagues, and how faculty in the program conceive of the academic practice of research and learning.

Ongoing Research Projects in Graduate Education

National Institutes of Health: Mentoring for Success: Developing Fundamental Skills for Biomedical Research
This program aims to increase the number of students from underrepresented backgrounds who are admitted to and retained in doctoral programs in the biological and life sciences at Northwestern. The Center continues to play an important role in both program design and evaluation. Our evaluation results suggest that the program has been extremely successful with substantial increases recorded in the number of underrepresented students admitted to doctoral programs in the biological and life sciences and very high retention rates of CLIMB (Collaborative Learning and Integrated Mentoring in the Biosciences) students. The program was originally funded by NIH for 5 years and a 3 year renewal was awarded in 2011.

National Institutes of Health: T32 Training Grants
The Center is currently involved in evaluation of doctoral and post-doctoral training grant programs in the Cellular and Molecular Basis of Disease (CMBD), Biophysics, Biotechnology, Communication Sciences and Disorders, Endocrinology, Human Cognition, Information Storage, Mechanisms of Aging and Dementia
(MAD), Motor Control and Physical Therapy. In addition the Center designed evaluation plans and developed survey instruments for new proposals and renewals for training programs in Cardiovascular Disease Epidemiology and Prevention and Physical Therapy.

External Review of Duke University T32 Training Grants
Staff from the Center are currently conducting an external review of T32 training grants in the Biomedical and Life Sciences at Duke University. To date 56 surveys have been created and administered to examine the experience of trainees in 14 training programs at Duke. Focus groups with program participants will be conducted in Fall 2013.

New Grant Funded Projects

Preparing Graduate Students in History for Teaching (Teagle Foundation $85,000 over 2 years)
The Searle Center has collaborated with the Graduate School on a proposal to develop a framework for discipline-specific programming aimed at improving the training of graduate students as teachers of undergraduates. The project will be piloted in the History Department. The program includes the following components; 1) Creation of a “community of practice” composed of History graduate students and faculty focused on developing discipline-specific principles and practices aimed at promoting undergraduate student learning in history. 2) Development of a graduate professional development structure in History that includes a series of workshops and reading discussion groups aimed at students in varying stages of their graduate career. 3) Creation of an online curricular resource guide to teaching history that offers advice on developing objectives and assessments in history courses and suggestions for pedagogy in both seminar and lecture settings. The Searle Center will provide consultation both on program development and evaluation.

Center for Integration of Research Teaching and Learning Network (CIRTL Network) (National Science Foundation $142,800 over 3 years)
The Searle Center has collaborated with the Graduate School and 23 research universities across the nation to promote professional develop of graduate students in STEM teaching and learning. The Searle Center will play roles in both program development and evaluation.

Grants Pursued/Under Review

- "Becoming a College Student: Academic and Social Integration in First-Generation Undergraduates.” Submitted to NASPA. Under review.

Grant Writing Assistance
The Center has assisted faculty with the preparation of proposals to external funders over the last year. These include NSF Early Career Grants, NSF IGERT and NIH T32 and T90 proposals. To enhance the grant writing capacity of Northwestern faculty, the Center continues to offer yearly workshops on how to write the pedagogical and evaluation sections of grants. The Center has also collaborated on proposals for educational grants with faculty at Purdue University and Duke University.
Focus Groups:
The Searle Center conducted a focus group in Spring to acquire feedback from students (all PhDs and MDs) in a mentoring research program.
SERVICES

The Searle Center has continued to develop the teaching and learning services it provides for faculty and graduate-student instructors and post-docs across the University.
SERVICES FOR FACULTY & INSTRUCTORS

Small Group Analysis (SGA)
During a Small group analysis, Center staff and trained graduate-student Teaching Consultants (TCs) conduct a structured focus group with students in a class, and provide instructors with detailed and candid feedback during a follow-up meeting. In 2012-2013, we conducted 91 SGAs for faculty and graduate instructors.

Structured Observations (SO)
In structured observations, Center staff and Graduate Teaching Fellows observe an instructor’s teaching, taking detailed notes about key areas, including student engagement, critical thinking, and effectiveness of teaching approaches. Includes follow up consultation; sometimes combined with SGA. In 2012-2013, we conducted 25 structured observations for faculty and 19 for graduate students.

NEW: End-of-Term Focus Group
Since the university does not administer Course and Teacher Evaluations to courses with fewer than 5 students, instructors may request a CTEC-style focus group from the Searle Center. A trained staff member will pose questions drawn from the university CTEC and from Searle’s Small Group Analysis questionnaire, noting points of agreement and disagreement. After grades have been submitted, the staff member will share the student responses with the instructor. This year, we completed 6 end-of-term-focus groups.

Individual Consultations
The Center provides individual consultations to faculty and other instructors at the University, from Evanston, Chicago and NU-Q campuses. These are often carried out in conjunction with either an SGA or structured observation, or in response to end-of-term course evaluations. They can also be stand-alone or ongoing meetings to engage in a variety of teaching, curriculum planning, and grantwriting activities, for individuals or in campus units. Searle Center senior staff worked individually with approximately 130 faculty members this year, consulting on issues of teaching, assessment, and grantwriting.

Innovative Grants for Teaching
The grants are designed to support faculty, staff, post-docs and graduate students who wish to experiment with new ways to help students learn. This year, the Center awarded Chyi Chang and Shannon Millikin, both lecturers in the department of Spanish, a grant designed to enhance the mentoring experience of colleagues in their department.

SERVICES TO THE UNIVERSITY AND BROADER COMMUNITY

Library
The Center continues to add to its holdings (books, articles, journals, and DVD/videos), providing faculty/staff and graduate students with easy access to the rich literature on teaching and learning. We have continued to donate materials to the University Archives (including video recordings of University Teaching Series events, foundational materials, professional correspondence, etc.), so that they may be archived properly. In addition, we have added substantial new technologies to the library (cameras, interactive white board, and other specialized equipment), which enhanced our ability to communicate with our stakeholders and collaborators and to model effective integration of teaching and technology.

northwestern.edu/searle/services_and_resources/center_library.html.
Twitter Account
“The Center’s twitter account (@searleteaching) promotes Center programs and events, disseminates news about our work, and links to compelling articles on teaching and learning in the media and scholarly publications. The Center tweets an average of 3-4 times a week and has garnered 536 followers. The Twitter account can be found at twitter.com/searleteaching.

Website
We are currently in the midst of a major overhaul of our website with the help of the NU Web Communications team. Slated for launch in mid-December, the new website will be a visual and content change from the previous site. The new website will highlight all facets of the Center’s work in advancing learning and teaching, from student learning to teacher development to research, as well as improve accessibility to our programs and provide clearer information on our ongoing work. Last year, our website had 8422 unique visitors, with 24,996 total visits, from 137 countries/territories.

Additional communications:
In addition to the website, we will start three communications-related pieces in September: a monthly e-newsletter, a Center Facebook page, and a Center blog focusing on learning and teaching issues. Much like the new website, this new digital presence for the Center will allow us to expand and improve upon our communication with the faculty, students, and staff about the many opportunities and activities at the Searle Center.
DISSEMINATION

ACADEMIC PUBLICATIONS & PRESENTATIONS

Under Review

In Press
Calkins, S. & Light, G. Conceptions of Mentoring in Formalized Faculty Relationships. Chapter in The Mentoring Continuum: From Graduate School Through Tenure, Syracuse University Press. (Accepted pending revision)


Micari, M., & Pazos, P. (2013). Worrying about what others think: A social-comparison concern intervention in small learning groups. Active Learning in Higher Education. (Accepted pending revision.)

Publications September 2012-August 2013


Talks & Paper Presentations
Presentations September 2012- August 2013


UNIVERSITY CONTRIBUTIONS/OUTREACH

Committee Work

Inside Northwestern

- Assessment Council (Assessment Subcommittee; Assessment Forum subcommittee) (Susanna Calkins)
- Classroom Committee (Susanna Calkins)
- Consolidated Service Center (MOOCs) (Susanna Calkins)
- CTEC Committee (Greg Light; Susanna Calkins, redesign subcommittee)
- Educational Technologies Advisory Committee (Greg Light, chair; Stanley Lo; Susanna Calkins, Learning Outcomes subcommittee)
- Mellon Mays Undergraduate Fellowship review committee – Marina Micari
- Office of Fellowships, Fulbright faculty mentors and applications review committee (Susanna Calkins)
- Prosthetic Orthotic Center Education Program (NUPOC) Advisory Board (Susanna Calkins)
- Semester Online Committee (Susanna Calkins)
- University Diversity Council (Greg Light, Co-Chair: Academics/Education Working Group; Marina Micari, Academics/Education Working Group)
- Undergraduate Research Assistant program Review Committee – Greg Light

Outside Northwestern

- Committee on Institutional Cooperation (CIC) Teaching Center Directors group – Susanna Calkins, Greg Light, Nancy Ruggeri
- NSF External Advisory Committee for KEYSTONE Project, KEYs to Success Through year ONE (Elmhurst College) – Denise Drane
- NSF National Advisory Board: Collaborative Research: Integrating Cognition and Measurement with Conceptual Knowledge: Establishing the validity and diagnostic Capacity of Concept Inventories (Greg Light)
- NSF National Advisory Board: Critical Thinking Assessment (CAT) Tool (Greg Light)
- Professional Organizational Network (POD), History Committee (Susanna Calkins)

Teaching

- Susanna Calkins: MSHE 467 – History and Philosophy of Higher Education (SESP)
- Susanna Calkins: MSHE 405-Learning and Teaching in Higher Education (SESP)
- Denise Drane: CSD 304 – Statistics in Communication Sciences and Disorders (SoC)
- Denise Drane: CSD 446 Evidence-Based Practice
- Stanley Lo: BiolSci 241-ISP Biochemistry (WCAS)
- Stanley Lo: BiolSci 210B, Biochemistry and Molecular Biology (SCS)
- Stanley Lo; BiolSci 327, Biology of Aging, (SCS)
- Stanley Lo, BiolSci 218, Biochemistry (WCAS)
- Greg Light: MSHE 405 – Learning and Teaching in Higher Education (SESP)
- Marina Micari: SESP 291 – Undergraduate Mentoring (SESP) (GSW Facilitator training course)
- Marina Micari: MSLOC Capstone Advising (SESP)

Reviewing

- American Educational Research Association (Stanley Lo) American Journal of Evaluation  (Marina Micari)
CBE Life Sciences Education (Stanley Lo)
Education Research Review (Greg Light)
Higher Education (Greg Light)
Higher Education Research & Development (Greg Light)
International Journal of Academic Development (Greg Light)
Journal of Engineering Education (Greg Light)
International Journal of Academic Development (Susanna Calkins)
International Journal of Science Education (Greg Light, Marina Micari)
International Journal of Teaching and Learning in Higher Education (Susanna Calkins, Marina Micari)
Journal of Engineering Education (Denise Drane, Greg Light)
Journal of Research in Science Teaching (Greg Light)
Journal of Women and Minorities in Science and Education (Marina Micari)
National Science Foundation Grant Review Panels (Greg Light)
Reports of the National Center for Science Education (Nancy Ruggeri)
Science (Greg Light)

Additional Outreach
- Greg Light and Susanna Calkins held a skype session on “Higher Education and MOOCs” for German students at Humboldt University in Berlin, Germany.
- Susanna Calkins and Greg Light hosted ten University teachers from Central University in China, discussing key principles in learning & teaching in higher education.

PROFESSIONAL DEVELOPMENT ACTIVITIES

External
- CAT Analog Training (June 2013), Stanley Lo
- FAME Education Day (Susanna Calkins, Denise Drane)
- National Academies Mountains West Summer Institute on Undergraduate Education in Biology (July 2013) (Stanley Lo, facilitator):
- Northwestern University Best Practices Forum (March 2013) (Susanna Calkins)
- Stanley Lo was named a National Academies Education Mentor in the Life Sciences for 2013-2014 at the National Academies Mountain West Summer Institute (July 2013).

Internal
- In-service for Directors: Leigha Kinnear: Discussed Effective Supervision
- In-service for all staff: Kathleen Murphy: Explained updates to IRB policies and procedures
- In-service for all staff: Lesley-Ann Brown: Discussed diversity efforts on campus
- In-service for all staff: Andrea Albers Sarther presented on writing for the web
- All staff: Searle Center annual staff retreat
SEARLE CENTER STAFF 2012-2013

Principal Staff
- Remi Akinyemi, Project Coordinator
- Susanna Calkins, Associate Director
- Denise Drane, Associate Director
- Louise Edwards, Graduate Assistant
- Andrew French, Program Coordinator**
- Luke Flores - Senior Associate: SRW, BioExcel & NU BioScientist programs
- Arcenia Harmon, Center Director (temporary)
- Melissa Hayne, Research Assistant**
- Lisa Kelly, Graduate Assistant
- Greg Light, Director
- Stanley Lo - Senior Associate: STEM projects
- Marina Micari, Associate Director
- Jennifer Pickard-Criswell, Research/Program Coordinator
- Tom Popelka, Program Associate
- Dreana Rubel, Center Manager
- Nancy Ruggeri, Associate Director
- Shyanmei Wang, Program Associate
- Sara Woods, Program Coordinator*

*Resigned during 2012–2013
**Joined during 2012–2013

Work-Study Students
- Liliana Bonilla
- Cindy Chen
- Ben Li
- Hyerin Lee
- Ayo Olagbegi

Interns
- Andrew French
- Charles Gaber
- Melissa Hayne
- Zachary Van Winkle
- Sheldon Walcher
- Ken Woo

External Associates of the Center
- Bernhard Streitwieser - International Research Associate
- Su Swarat – Research Associate
Gateway Science Workshop Program Assistants
- Gabrielle Budzon
- Chu Yu

Advisory Board
James Edward Colgate  Professor, Mechanical Engineering, McCormick School of Engineering & Applied Science
Raymond Curry  Dean for Education and Professor of Medicine and Medical Education, Feinberg School of Medicine
Ava Greenwell  Associate Professor, Medill School of Journalism
Robert Linsenmeier  Professor, Neurobiology & Physiology, Weinberg College of Arts & Science
Franziska Lys  Associate Professor, German, Weinberg College of Arts & Sciences
Thomas Mason  Professor, Materials Science & Engineering, McCormick School of Engineering & Applied Science
Lawrence Pinto  Professor, Neurobiology & Physiology, Feinberg School of Medicine
Chris Riesbeck  Associate Professor, Electrical Engineering & Computer Science, McCormick School of Engineering & Applied Science
## APPENDIX: PROGRAM DATA

### FACULTY PROGRAMS DATA

#### Faculty Workshop Series

<table>
<thead>
<tr>
<th>Date</th>
<th>Workshop Titles</th>
<th>Attendance</th>
<th>Average Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>10/24/12</td>
<td>Your Students Up to Succeed: Designing a Learner-Centered Course</td>
<td>16</td>
<td>4.3</td>
</tr>
<tr>
<td>10/30/12</td>
<td>On line workshop Designing a course that focuses on learning</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>11/09/12</td>
<td>Connecting with the Crowd: Lecturing Effectively in Large Classes</td>
<td>11</td>
<td>4.3</td>
</tr>
<tr>
<td>11/15/12</td>
<td>On line workshop Designing a course that focuses on learning</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>12/13/12</td>
<td>Developing an Effective Pedagogical Component for Your Grant Proposal</td>
<td>10</td>
<td>4.4</td>
</tr>
<tr>
<td>1/29/13</td>
<td>Leading Effective Discussion</td>
<td>15</td>
<td></td>
</tr>
<tr>
<td>2/14/13</td>
<td>Grading with Intent: Designing effective assessments to improve student learning</td>
<td>6</td>
<td>4</td>
</tr>
<tr>
<td>2/19/13</td>
<td>Teaching Students of Different Levels</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>3/5/13</td>
<td>Developing an Effective Pedagogical Component for Your Grant Proposal</td>
<td>6</td>
<td>4.5</td>
</tr>
<tr>
<td>3/14/13</td>
<td>Faculty Roundtable: Teaching Difference: Bringing diversity and social inequality into classroom</td>
<td>14</td>
<td></td>
</tr>
<tr>
<td>3/20/13</td>
<td>Infusing Critical thinking into our course design</td>
<td>16</td>
<td>3.8</td>
</tr>
<tr>
<td>4/2/13</td>
<td>Faculty Roundtable: Recognizing and Responding to Students in Distress</td>
<td>13</td>
<td></td>
</tr>
<tr>
<td>4/12/13</td>
<td>Developing and Evaluating Writing Assignments within the disciplines</td>
<td>10</td>
<td>4.2</td>
</tr>
<tr>
<td>5/15/13</td>
<td>Engaging students in a med school lecture</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>5/28/13</td>
<td>Faculty Roundtable: Twitter in the classroom? Using Online Communication to enhance learning</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>6/11/13</td>
<td>Beyond CTECs: Developing meaningful course evaluation</td>
<td>9</td>
<td>5</td>
</tr>
</tbody>
</table>

#### University Teaching Roundtable Series

<table>
<thead>
<tr>
<th>Date</th>
<th>Roundtable Titles</th>
<th>Attendance</th>
</tr>
</thead>
<tbody>
<tr>
<td>11/15/12</td>
<td>Troubleshooting: Addressing Problems in the Classroom</td>
<td>10</td>
</tr>
<tr>
<td>2/21/13</td>
<td>The Tao of Discussion Cultivating Energy in the Classroom</td>
<td>11</td>
</tr>
<tr>
<td>2/28/13</td>
<td>Teaching Race in a Post-race Climate</td>
<td>13</td>
</tr>
<tr>
<td>4/24/13</td>
<td>Teaching While Female: Gender in the 21st Century Classroom</td>
<td>8</td>
</tr>
<tr>
<td>5/22/13</td>
<td>UTR: Lessons Learned from Teaching a Hybrid Course</td>
<td>8</td>
</tr>
</tbody>
</table>

Searle Fellows: 17
New Faculty Workshop: 53
Searle Fellows

Giuseppe Buscarnera  Civil and Environmental Engineering  Richard Finno
Matthew Easterday  Education and Social Policy  Chris Riesbeck
Daniel Gruber  Integrated Marketing Communications  Paul Wang
Jeffrey Gossett  Pediatric Cardiology  Mark Adler
Ramona Gupta  Radiology  Christine Park
Laurel Harbridge  Political Science  Hendrik Spruyt
Molly Losh  Communication Sciences and Disorders  Jerilyn A Logemann
Megan McHugh  Institute for Healthcare  Jane L. Holl
Sazzad Nasir  Communication Sciences and Disorders  Charles Larson
Bernice Ruo  General Medicine  Gary Martin
Jacob Smith  Radio-TV-Film  Hamid Naficy
Alexander Statsyuk  Chemistry  Regan Thomson
Cheng Sun  Mechanical Engineering  Jane Wang
Jennifer Trainor  Pediatrics  Mark Adler
Ipek Yosmaoglu  History  Peter Carroll
Fengqi You  Chemical & Biological Engineering  Wes Burghardt
Hao Zhang  Biomedical Engineering  Vadim Backman

GRADUATE PROGRAMS DATA

New TA Conference, 2012
Total Attendance: 273
Total Registered: 312
Average Rating: 4.48 (Department-Specific Workshops); 4.02 (Cross-Disciplinary Workshops 1); 4.09 (Cross-Disciplinary Workshops 2)

Participation by Disciplines:

<table>
<thead>
<tr>
<th>Discipline</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>STEM (Science, Technology, Engineering, Math)</td>
<td>54%</td>
</tr>
<tr>
<td>Humanities</td>
<td>25%</td>
</tr>
<tr>
<td>Social Sciences</td>
<td>21%</td>
</tr>
</tbody>
</table>

2012-2013 Graduate Teaching Certificate Program participation:
Total participants: 63

<table>
<thead>
<tr>
<th>Discipline</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>STEM (Science, Technology, Engineering, Math)</td>
<td>37%</td>
</tr>
<tr>
<td>Humanities</td>
<td>44%</td>
</tr>
<tr>
<td>Social Sciences</td>
<td>19%</td>
</tr>
</tbody>
</table>
Graduate Workshops

<table>
<thead>
<tr>
<th>DATE</th>
<th>TITLE</th>
<th>ATTENDANCE</th>
<th>AVG. RATING</th>
</tr>
</thead>
<tbody>
<tr>
<td>10/4/12</td>
<td>Marketing Your Teaching</td>
<td>41</td>
<td>4.2</td>
</tr>
<tr>
<td>10/8/12</td>
<td>Grading Assignments and Assigning Grades</td>
<td>13</td>
<td>4.5</td>
</tr>
<tr>
<td>11/1/12</td>
<td>Talking the Talk: Facilitating Classroom Discussion</td>
<td>20</td>
<td>4.5</td>
</tr>
<tr>
<td>1/23/13</td>
<td>Undergraduate Lab Reports: Grading and Improving Student Learning</td>
<td>15</td>
<td>N/A</td>
</tr>
<tr>
<td>2/11/13</td>
<td>Working with Student Writing</td>
<td>23</td>
<td>N/A</td>
</tr>
<tr>
<td>3/12/13</td>
<td>Teaching Tough Texts</td>
<td>20</td>
<td>4.33</td>
</tr>
<tr>
<td>4/4/13</td>
<td>Marketing Your Teaching</td>
<td>47</td>
<td>4.4</td>
</tr>
<tr>
<td>4/4/13</td>
<td>Reflective Teaching</td>
<td>20</td>
<td>4.6</td>
</tr>
<tr>
<td>4/16/13</td>
<td>Diversity, Inclusion, and Communication</td>
<td>10</td>
<td>4.4</td>
</tr>
<tr>
<td>4/18/13</td>
<td>Pedagogy in the Digital Age</td>
<td>23</td>
<td>3.4</td>
</tr>
<tr>
<td>4/30/13</td>
<td>Diversity and Power in the Classroom</td>
<td>28</td>
<td>4.5</td>
</tr>
<tr>
<td>TOTAL</td>
<td></td>
<td>260</td>
<td></td>
</tr>
</tbody>
</table>

Teaching Consultants, 2012-13

- Louise Edwards, Theatre and Drama
- Natalie Gruenke, Chemistry
- Jennifer Hobbs, Physics and Astronomy
- Lisa Kelly, Theatre and Drama
- Rebecca Marchiel, History
- Garrett Morrison, English
- Taylor Page, Chemistry
- Rachel Ricci, Political Science
- Karthik Sekar, Chemical and Biological Engineering
- Desiree Weber, Political Science

Graduate Teaching Mentors, 2012-13

- Jenna Luque, Linguistics
- Rebecca Marchiel, History
- Kate Newbold, RTVF
- Taylor Page, Chemistry
- Munjulika Rahman, Performance Studies
- Kiki Zissimopoulos, Biomedical Engineering

TA Fellows, 2012-13

- Felix Amankona-Diawuo, Chemistry
- Cheryl Berriman, Slavic Languages and Literatures
- Megan Berry, Mechanical Engineering
- Koshonna Brown, NUIN
- Yishan Chuang, Chemical and Biological Engineering
• Emily Hoyler, Musicology  
• Assata Kokayi, African American Studies  
• Stacy Lom, Sociology  
• Gemma Mangione, Sociology  
• Rebecca Marchiel, History  
• Erica McCready, Chemical and Biological Engineering  
• Garrett Morrison, English  
• Esteban Petruzzello, Economics  
• Andrew Rasmussen, Chemistry  
• Diana Siwicka, French and Italian  
• Monica So, Chemistry  
• Matilda Stubbs, Anthropology  
• Michael Tennekoon, NUIN

Graduate Teaching Certificate Program participants, 2012-13

• Genevieve Amaral, Slavic Languages and Literatures  
• James Antony, NUIN  
• Rachael Baiduc, Communication Sciences and Disorders  
• Christine Bean, Theatre and Drama  
• Lauren Beck, Theatre and Drama  
• Kiyona Brewster, Sociology  
• Koshonna Brown, DGP  
• Kyle Burke, History  
• Kelvin Chang, Chemistry  
• Yishan Chuang, Chemical and Biological Engineering  
• George Custail, Chemistry  
• Carla Della Gatta, Theatre and Drama  
• Mirian Diop, Chemical and Biological Engineering  
• Katherine Dugan, Religious Studies  
• Chelsea Egbert, Philosophy  
• Gozde Erdeniz, Political Science  
• Carmen Finashina, Slavic Languages and Literatures  
• Madison Fitzpatrick, Civil and Environmental Engineering  
• Clare Forstie, Sociology  
• Daniel Fowler, Chemistry  
• Nicholas Laszlo Frazer, Physics  
• Alana Glaser, Anthropology  
• Faye Gleisser, Art History  
• Stephanie Glickman, Art History  
• Christine Goding-Doty, African American Studies  
• Emma Goldsmith, History  
• Leigh Goldstein, RTVF  
• Katie Good, Media, Technology, and Society  
• Jiangtao Gou, Statistics  
• Natalie Gruenke, Chemistry  
• Arda Gucler, Political Science
• Brynn Hatton, Art History
• Jessica Hinds-Bond, Theatre and Drama
• Robin Hoecker, Media, Technology, and Society
• Yuli Hsieh, Media, Technology, and Society
• Amit Jairaman, DGP
• Matthew June, History
• Joshua Kaiser, Sociology
• Faith Kares, Anthropology
• Jenny Kerschner, DGP
• Erica Knowles, Communication Sciences and Disorders
• Andrea Luthi, Chemistry
• Michael Martoccio, History
• Diana Monsivais, DGP
• Ira Murfin, Theatre and Drama
• John Murphy, Art History
• Antonia Navarro, DGP
• Guadalupe Navarro, DGP
• Mark Panaggio, Engineering Science and Applied Mathematics
• Andrea Seligman, History
• Aleksandra Sherman, Psychology
• Diana Siwicka, French and Italian
• Harsh Taneja, Media, Technology, and Society
• Alex Thurston, Religious Studies
• Rachel Vanderpoel, Political Science
• Dorina Veliceasa, Urology
• Eric Voll, DGP
• Desiree Weber, Political Science
• Michael Werner, Cell and Molecular Biology
• Jessica Wilson, NUIN
• Xiao Wu, Media, Technology, and Society
• Fengqing Zhang, Statistics

Graduate Teaching Fellows, 2012-13
• Benjamin Chiles, Interaction and Social Influence
• Brian Clites, Religious Studies
• Jennifer Hobbs, Physics
• Rachel Ricci, Political Science
• Kati Sweaney, Theatre and Drama
• Desiree Weber, Political Science
• Winter Jade Werner, English
• Tyler Zimmer, Philosophy
UNDERGRADUATE PROGRAMS DATA

Undergraduate Teaching & Learning Committee Members

<table>
<thead>
<tr>
<th>Birju Rao</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jennifer Bae</td>
</tr>
<tr>
<td>Olivia Franzblau</td>
</tr>
<tr>
<td>Trenton Rogers</td>
</tr>
<tr>
<td>Neil Mehta</td>
</tr>
<tr>
<td>Green Chung</td>
</tr>
<tr>
<td>Brad Winters</td>
</tr>
<tr>
<td>Lauren Neuschel</td>
</tr>
</tbody>
</table>

AMP MENTORS
1. Ahearn, Caitlin
2. Allen, Emily
3. Argoff, David
4. Bell, Andy
5. Burza, Nevena
6. Chung, Sarah
7. Frisch, Caroline
8. Glazier-Torgenson, Amy
9. Hawley, Abigail
10. Kaplan, Sabrina
11. Kaufman, Lauren
12. Lehman, Camaria
13. Li, Clayton
14. Lichtenfels, Philip
15. Linker, Jennifer
16. Montgomery, Jacqueline
17. Morrison, Billy
18. Ooi, Jorene
19. Powell, Jasmine
20. Renter, Chelsea
21. Sarkisian, Neil
22. Shamma, Casey
23. Steinmeier, Sarah
24. Wang, Hanchen

GSW SENIOR FACILITATORS
1. Budzon, Gabrielle
2. Clark, Michael
3. Everett, Trevor
4. Ferdous, Sakif
5. Hassani, Donna
6. Hsu, Hsiao-Tieh
7. Jayaraman, Avi
8. Jizba, Eric
9. Khademi, Zane
10. Kielbus, Angelica
11. Liesse, Kelly
12. Scholl, Meliaa
13. Snider, Zack
14. Uttal, Sarah
15. Walsh, Brenda
16. Williams, Jessica
17. Yu, Chu

AMP REGISTRATIONS 2012–2013

<table>
<thead>
<tr>
<th></th>
<th>Econ 201</th>
<th>Econ 202</th>
<th>Stat 210</th>
<th>Psych 110</th>
<th>Math 202</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Fall</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>62</td>
<td>43</td>
<td>14</td>
<td>22</td>
<td>--</td>
<td>141</td>
</tr>
<tr>
<td><strong>Winter</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>58</td>
<td>49</td>
<td>11</td>
<td>9</td>
<td>5</td>
<td>132</td>
</tr>
<tr>
<td><strong>Spring</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>41</td>
<td>69</td>
<td>26</td>
<td>*</td>
<td>5</td>
<td>141</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>161</td>
<td>161</td>
<td>51</td>
<td>31</td>
<td>10</td>
<td>414</td>
</tr>
</tbody>
</table>

*Psychology opted not to participate in spring.

GSW REGISTRATIONS 2012–2013

<table>
<thead>
<tr>
<th></th>
<th>Bio</th>
<th>Chem</th>
<th>Orgo</th>
<th>Physics</th>
<th>Math</th>
<th>Engineering</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Fall</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>61</td>
<td>72</td>
<td>171</td>
<td>74</td>
<td>56</td>
<td>56</td>
<td>490</td>
</tr>
<tr>
<td><strong>Winter</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>49</td>
<td>35</td>
<td>93</td>
<td>91</td>
<td>32</td>
<td>12</td>
<td>312</td>
</tr>
<tr>
<td><strong>Spring</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>44</td>
<td>22</td>
<td>59</td>
<td>72</td>
<td>16</td>
<td>13</td>
<td>226</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>154</td>
<td>129</td>
<td>323</td>
<td>237</td>
<td>104</td>
<td>81</td>
<td>1028</td>
</tr>
</tbody>
</table>

*Note: GSW numbers are from Coordinator records, not data file.*