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Director’s Report

2016-2017 Reflections, Highlights, and Directions

My first year was spent exploring Northwestern, asking and learning about our students and faculty, how they learned and taught, experiencing the wonderful activities and programs, learning about the challenges as well as the amazing opportunities for advancing learning and teaching across the institution. On reflection at the end of my first year, four themes emerge: Searle’s mission and success in leading learning and teaching at Northwestern from a research-based perspective; Searle’s activities in convening and sharing; partnerships and collaborations; and innovation and opportunities.

The Searle Center for Advancing Learning and Teaching is a Research–Practice Partnership. All of our programs across the wide range of faculty, postdoc, graduate student, and undergraduate student stakeholders are research-based and structured with assessment from the start, using data to improve every cycle. Searle is one of the oldest centers of learning and teaching in the US, and considered in the top few in terms of research-based practice and knowledge-generating scholarship. More than 1900 Northwestern undergraduates participated this year in peer-guided study groups, academic mentoring and coaching, and drop-in tutoring. Our research demonstrates that students in these programs do significantly better than a matched cohort, especially students who are less prepared, underrepresented and/or from low socioeconomic backgrounds. More than 500 graduate students and postdoctoral fellows engaged in programs that include a yearlong, peer-led Teaching Certificate Program, graduate teaching fellows with projects in their departments, mentored discussions of teaching, a teaching as research seminar, a STEM teaching MOOC with in-person learning communities, and numerous workshops. Our research on the higher engagement programs shows gains in cognitive, attitudinal and behavioral outcomes. The Searle Fellows program, the center’s flagship faculty development program, this year reached 275 tenure line and clinical faculty alumni, and is the most studied in the nation, yielding more than ten scholarly publications in its history.

We are fulfilling our mission to advance learning in higher education. We partner across Northwestern and the broader academic community to catalyze and sustain change that supports learning at all levels, for all learners. We collaborate with everyone in this enterprise: faculty, postdocs, graduate students and teaching assistants, undergraduates and undergraduate peer mentors, and administrators. The Center plays a leading role in national and international scholarship, as well as engaging in conversations and collaborations with those who study and promote learning in higher education.

Convening and sharing has occurred across a broad set of university-wide initiatives and programs in learning and teaching. New folks have come together in the space of assessment: The Searle Center’s bi-monthly Research and Evaluation Learning Community includes participants from Student Affairs, Provost Office, Office of Institutional Research, The Libraries, The Graduate School,
Weinberg and Searle. Assessment discussions have occurred with Feinberg’s NU-ERA, connecting assessment across campuses; trainings have occurred with the Program in Public Health; and the Assessment and Accreditation Council now includes all schools who are exploring a new set of tasks to advance the culture and practice of assessment. Convening and conversations in the space of digital learning and learning with technology have become regular, richer, and more directed between Searle, NUIT, and the Provost’s Office. Conversations on large-scale data studies of student pathways, indicators of success, and learning analytics include the Searle Center, Transitions group, IT, Provost’s Office, OIR, schools and Student Affairs. Searle Faculty Initiatives created the Faculty Open Classroom Initiative with 225 faculty visits, sharing their experiences, practices, and thoughts about learning and teaching. The power of these conversations among stakeholders and others is that we are developing a common set of goals, outcomes, activities, and measures. In 2017–2018 these discussions will lead to specific collective tasks, initial actions, and longer-term strategies in assessment, learning and academic innovation, data-driven student outcomes, and more.

Partnerships and collaborations have led to significant success: Through our partnership with Weinberg College, we will launch the new Academic Support & Learning Advancement unit in January. This unit will be a cornerstone of the planned Academic Resource Center (ARC), a successful and growing collaboration among the Searle Center’s Academic Support and Learning Advancement unit, The Libraries, Weinberg College, and the Provost’s Office. The partnership is synergistic: the ARC will simplify students’ access to services supporting their learning, harnessing active and collaborative learning spaces in the Library, and supporting enhancements to a range of programs and services. Looking forward, the collaboration will grow, adding partners and opening new opportunities to support student success. Partnerships have also been critical to the expansion of efforts in faculty professional development and graduate student and postdoc development in the areas of diversity, equity, and inclusion. Searle partnered with Weinberg and Social Justice Education in Student Affairs to run workshops on identity, power and positionality, and inclusive teaching strategies for more than 100 faculty – new Weinberg faculty, Hewlett Fellows, First Year Seminar Faculty, Weinberg advisors. We partnered to deliver workshops in a number of graduate student groups, and in two Weinberg departments. Searle partnered to create the first annual Inclusive Teaching Forum. Searle’s partnership with faculty and schools continues with the Searle Fellows program, now with more than 275 tenure line and clinical Northwestern faculty alumni, and with the Provost Office around faculty development and the McCormick and Alumni awards. In research, Searle has partnered across the university with dozens of faculty and programs on proposals supporting graduate, post-doctoral and undergraduate student learning, innovation in training, and scholarship around collaboration, teamwork and networks.

Innovation and opportunities have rapidly expanded in so many exciting directions this past year, with the promise of moving into the spaces of discussions, partnerships and collaborations in 2017–
2018 and beyond. The Searle Center is working with the Registrar and IT to help envision a technology-driven backbone of student learning objectives and their assessment. Searle is collaborating with A&RT, the Registrar, and FM to explore the design, professional development of faculty for, and the measurement of student learning in active and collaborative learning spaces. Searle is in discussions with the Registrar, Provost’s Office, Faculty Senate, and others around how student CTECs should evolve. Searle is developing common ground with The Graduate School around supporting graduate student and postdoc learning. Searle is leading discussions with partners around inclusive learning and teaching, in the classroom, in more informal learning environments like research labs and studios, and internationally.

Our central mission to advance learning and teaching will be best achieved through both direct engagements with faculty, graduate students, post-docs and undergraduates and by infusing research-based practice across the fabric of the university in a large array of partnerships. As the needs and demands of our students and other stakeholders change, we will reach and serve a wider range of participants with new programs. Similarly, our partnerships and collaborations support the deepening thoughtfulness and practices around learning and teaching, assessment and evaluation, and knowledge and scholarship in support of learning throughout the university. The Searle Center is well positioned to achieve expansion of both direct programs and building capacity through partnerships. In particular, the Directors Nancy Ruggeri in Graduate and Postdoctoral Programs, Marina Micari in Academic Support & Learning Advancement, Susanna Calkins in Faculty Initiatives and Denise Drane in Research and Evaluation are nationally recognized experts from whom I have learned a great deal. They lead in direct programming, and together we co-create and co-lead in broader initiatives across the university. This coming year, our team will welcome a new Assistant Director for Diversity and Inclusion and a new Assistant Director for the Center for the Integration of Research Learning and Teaching at Northwestern, each supporting significant new opportunities in diversity, equity, and inclusion and in the advancement of future faculty.

Finally, Northwestern is a remarkable place for learning and teaching. Faculty and students, administration and staff—all share a vision for the success of every student. We are all dedicated to this vision, and I am proud to lead the Searle Center that sits at the heart of working to achieve it.
I. Faculty Initiatives

The Searle Center seeks to build capacity in individual faculty members, as well as in departments and schools, in areas related to teaching, assessment of student learning, course design and curriculum planning, diversity, mentoring, and enhancing learning and teaching with technology.
FACULTY INITIATIVES HIGHLIGHTS

This year marked several important developments in our faculty initiatives. First, while we have long offered ad-hoc sessions related to inclusive teaching and diversity, this year we committed more purposefully to this ideal—offering more intentional opportunities to faculty to participate in self-reflection on their biases and assumptions as individuals, offering more workshops and substantial training on these topics. Searle staff received more training, and hosted a 2-day training session with outside facilitators. Searle also hosted the first Inclusive Teaching Forum, which was designed to help faculty, staff and students develop awareness around inclusion, equity and diversity in learning and teaching environments, and to find ways to communicate more effectively and respectfully when faced with barriers and challenges.

Second, we have also sought to communicate the value of learning and teaching more explicitly, through such initiatives as the Faculty Open Classroom initiative (described below) as well as by an increased presence around the value of assessment and evaluation to enhance teaching and learning more broadly at Northwestern.

The Searle (Junior/Early Career) Fellows Program

The Searle Fellows program is a comprehensive, year-long (eight month) faculty development program for 15-18 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 and identify a senior colleague who can serve as mentors to them. Faculty self-select for the program with the endorsement and/or nomination of their deans or department chairs. The 5-6 faculty from the Feinberg School of Medicine are selected by a committee overseen by the director of the Feinberg Academy of Medical Educators (FAME).

The program has two main objectives: 1) to strengthen 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, revision of an existing course or curriculum, or 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, 3-4 workshops, 3 project meetings, and evaluation activities (small group analysis of their class etc.). Fellows must communicate their project findings and reflections through a written critical account, a group poster, and presentation at the final celebratory dinner.
This year, 15 early-career tenure-line faculty completed the full program (2 dropped out for personal reasons). Fourteen senior faculty served as their mentors. Of these, 5 were returning mentors, and 4 were former Fellows. In addition, we asked two prominent Searle Fellows to return and speak about their pedagogical innovations: Karen Mangold from the Department of Pediatrics spoke about Using Simulation as an Assessment Tool in Medical Education; and Evan Maina Mwangi from English and Comparative Literary Studies spoke about how he engages students through deep participatory learning.

**Evaluation:** In their written critical accounts and final reflections, all 15 Searle Fellows indicated having learned substantially from the program, in terms of their insights into their abilities and attitudes as educators and as learners, and in their ability to learn from their students and to make sense of what they learned in tangible ways (e.g. the redesign of a course, practice critical thinking actively and immediately at the end of each class, and learner-centered approach). We also conducted pre and post program surveys, and a survey following the two-day retreat: (1) Pre-Program Survey: in September 2016; (2) Fall Retreat Evaluation survey completed December 2016; and 3) SF Program exit survey completed June 2017. Overall, survey responses indicate that participants benefited from learning from each other’s experience, that they found the program to be intellectually stimulating; and from their written comments, that they gained a rich and rewarding experience that would help them to enhance their teaching careers. They also indicated that they would like to learn more from the mentors so we will build on that aspect of the program next year.

Building on our earlier evaluation of the program, we published a study this year on the longer-term impact of the program on 27 faculty, focusing on their ongoing critical reflection on teaching and learning after they complete the program. Our findings suggest that faculty who have been given substantial space, time and opportunities to reflect on teaching and learning will continue to do so, even when they are no longer participating in a formal faculty development program. Learning how to reflect is a crucial for faculty members not only during their time in the program, but in the years that follow as well (Calkins, S. & Harris, M., 2017).

“My time as a Searle Fellow has been incredibly rewarding. Over the last year, the opportunity to engage with my mentor and with scholars from across the University, who have a true passion and dedication for teaching and pedagogy, has reinforced my dedication to higher education and renewed my commitment to excellence in teaching...” FROM A 2016-17 SEARLE FELLOW
Searle Fellows Extension
Even after they complete the program, former Searle Fellows continue to be actively involved in a variety of key learning and teaching initiatives, in their own departments, schools and at the university. For example, in this year alone, 3 facilitated sessions in the university’s Fourth Annual Learning, Teaching, and Assessment Forum (LTAF), 17 participated in the Faculty Open Classroom Initiative (FOCI), 2 served on the Feinberg Academy of Medical Educators (FAME), and 3 facilitated sessions at the Promoting Experiments in Teaching and Learning (TEACHx), an annual event, organized by the Northwestern Information Technology Faculty Support Services. Since 2014, 8 Searle Fellows have been awarded University Teaching Awards, the highest award offered by the university. Additionally, 10 former Searle Fellows served as mentors for Mentored Discussions of Teaching and the Teaching Certificate Program during the 2016-2017 academic year.

Conferences, Workshops, and Roundtables

NEW: Faculty Open Classroom Initiative (FOCI)

FOCI is a week-long program to encourage faculty to increase their exposure to different teaching styles, to explore strategies across disciplines, and reflect on learning and teaching. Modeled after Yale Bulldog Days, the Inaugural Faculty Open Classroom Initiative (FOCI) took place during 2017 winter quarter (Feb. 13th to 18th) with a reception the following week (February 23rd). FOCI seeks to make teaching more transparent and public by providing opportunities for faculty to open their classrooms and to visit colleagues’ classrooms. Postdocs, grad students and interested staff members were also invited to observe classrooms.

Sixty-three faculty opened 74 courses and 116 classroom sessions yielding 225 visitations in courses including Brain Damage and the Mind, Documentary Media, Introduction to Sexuality Studies, and Modern Cosmology. Faculty from 10/12 schools and colleges opened their classrooms (with no representation from TGS and NU-Q). 34/63 faculty visited at least one classroom with an additional 69 visitors who signed up to visit class sessions, for a total of 103 visitors. Thirty participants also attend the reception’. 23rd. On average, 2-3 faculty participated in each session with a range of 1-6.

Nick Davis a 2009 Searle Fellow and 2016-17 University Teaching Award winner
**Evaluation:** We administered 2 post-participation surveys via SurveyMonkey. The first 12-item survey was for faculty who opened their classrooms. The other 11-item survey was for participants who had visited classrooms. Both surveys asked participants to reflect on their experience participating in the initiative and what, if anything, they had learned from the process. We also asked questions related to the registration system (e.g. ease of use) and whether they would participate in the program in future iterations. 38/63 faculty (59%) and 37/69 visitors (54%) completed surveys. Using qualitative and quantitative methods we found that participants were able to: a) identify teaching practices that they would like to use in their own classrooms; b) engage in subsequent activities around learner and teacher development; and c) initiate and continue discussions around teaching and learning.

**NEW: Inclusive Teaching Forum (ITF)**

The inaugural Inclusive Teaching Forum (ITF), *From Conversations to Practice*, was a half-day event designed to foster conversations among faculty, grad students and postdocs, staff and undergraduates around issues of inclusive teaching and learning at Northwestern. Overall, 92 people attended the event (including 42 faculty, 35 administrators/staff, and 15 grad/undergraduate students). The goals of the forum were to: 1) promote meaningful dialogues on inclusive teaching and learning at Northwestern; 2) discuss how to implement inclusive teaching in the classroom; and 3) create/encourage inclusive teaching and learning environments on campus. A write-up of this initiative can be found on the digital learning website: [http://www.northwestern.edu/searle/programs-events/faculty/inclusive-teaching-forum.html](http://www.northwestern.edu/searle/programs-events/faculty/inclusive-teaching-forum.html)

**Evaluation:** A post forum survey was implemented to gather reflections about the forum. Thirty-four percent of participants completed the survey. On a Likert-type scale from 1 (extremely unlikely) to 6 (extremely likely), 93.5% indicated that they would highly recommend that a colleague attend the forum next year. Additionally, 93.5% of participants noted their level of agreement (1=strongly disagree and 7=strongly agree) with the following statements, that the Forum:

a. Helped us to reflect on our own assumptions coming into classrooms at Northwestern, as both teachers and as learners. [Average score: 5.5]

b. Created an opportunity to promote inter-group/community dialogue around inclusive learning and teaching at Northwestern. [Average score: 5.3]

c. Identified specific spaces and opportunities to improve
inclusion at Northwestern. [Average score: 4.8]
d. Allowed us to reflect critically on what it means to create inclusive learning environments. [Average score: 5.4]
e. Helped us to discuss and identify strategies around inclusive learning as a community. [Average score: 4.7]

Fourth Annual Learning, Teaching, and Assessment Forum (LTAF): Examining Evidence of Student Learning
This year, in collaboration with the Office of the Provost and the University Assessment/Accreditation Council, we offered the fourth annual university-wide annual Learning, Teaching, and Assessment Forum, “Examining Evidence of Student Learning.” One-hundred-sixty-three faculty, staff, and graduate students attended the event. See Table 1 in the Appendix (Section 11.1) for more details of the Concurrent Sessions. This university-wide event is designed to: 1) provide faculty, doctoral students, postdocs, administrators, and staff the opportunity to showcase their assessment initiatives at the class, department/program, school, and/or university levels; 2) share and highlight teaching, learning and assessment innovations, strategies, practices, and outcomes; 3) demonstrate the University’s assessment framework in practice; and 4) promote dialogue about assessment, its purpose, and its value for improving learning and teaching. Based on feedback from previous years, we made several key changes, including: 1) an improved proposal submission and registration processes; 2) the elimination of poster sessions; and 3) a post-forum workshop intended to help participants develop useful assessments.

Evaluation: A week after the forum, 67 participants completed a follow-up survey for a response rate of 41%. Survey findings indicate that the majority of LTAF participants attend in order to get new ideas for improving their own teaching and assessment practices. Additionally, many participants indicate that their satisfaction with LTAF and its sessions is dependent upon whether they believe they can apply the strategies shared. Survey findings also suggest that forum sessions can have lasting impacts on practice; of the 34 respondents who attended the LTAF in previous years, almost half named particular sessions that had been valuable to them. When looking at survey findings over the past 4 years, we have learned that Forum participants generally believe that the Forum succeeds in meeting its stated goals—particularly the goal to encourage innovative thinking about learning, teaching, and assessment, and the goal to offer presentations about strategies that could be applied to multiple disciplines or areas. (See Table 1 in the Appendix Section 11.1.) An article about our evaluation findings and lessons learned in presenting this annual forum is in press (Grannan, S. and Calkins, S. 2017). It will be featured later this year in a special issue of New Directions in Teaching and Learning highlighting models for facilitating peer conversations among faculty about
assessment and the use of findings to improve teaching, learning, and curriculum.

Faculty Workshop Series

We offered 11 interactive workshops this year, focusing on a range of topics including three new workshops: providing meaningful feedback; curriculum mapping; and encouraging risk and failure. One session focused on the roles of assessment and lecture in student learning. Two of these workshops (Developing Effective Learning Objectives) were offered online to improve access for instructors who find it challenging to come to our workshops in person. Each workshop is evaluated for usefulness, applicability, and overall satisfaction. (See Table 1 in the Appendix Section 11.1.)

Active Learning Spaces Panel

In partnership with Office of the Provost and The Faculty Distance Learning Workgroup, the Director moderated a panel for Innovation in Teaching Series: Panel on Active Learning Spaces

**Michael Peshkin**: Professor, Mechanical Engineering McCormick School of Engineering & Applied Science

**Victoria Getis**: Manager, Faculty Support Services Northwestern Information Technology

**Tracy Hodgson**: Assistant Professor of Instruction, Biological Sciences Weinberg College of Arts and Sciences

**David Broz**: Principal/ Education Practice Area Leader; Gensler

This event was designed to provide faculty and staff with an opportunity to hear from colleagues and experts who have used active learning spaces on campus in innovative ways.

Active learning environments are designed to foster interactive, flexible teaching and learning. They are cooperative learning spaces that encourage student collaboration and peer teaching. Approximately 70 faculty and staff participated in the session.
Learning and Teaching with Technology Workshops
In partnership with IT and MMLOC, we offered a workshop on Using Gamification to Engage Students. 11 faculty and staff participated in the workshop.

https://digitallearning.northwestern.edu/canvas/educational-technology-teaching-fellow

New Faculty Workshop (NFW)
The New Faculty Workshop is a half-day interactive workshop designed to help new faculty (e.g. full-time, part-time, tenure-line, non-tenure line, adjunct) reflect critically on learning and teaching at Northwestern, engage in a dialogue about key issues in learning and teaching, and become acclimated to student issues and concerns. The workshop featured activities related to designing learning objectives, promoting active learning and critical thinking, and assessing student learning. We also offered a panel featuring undergraduates answering faculty questions and concerns. Forty new faculty participated in the program.

Participants were from various fields and their prior teaching experience range from “no prior teaching experience” to 28 years of experience.

Thirty-two percent of participants completed a post-workshop survey. Respondents agreed (3.6/5.0) that the workshop was pitched at the right level and that it was relevant to their teaching. They agreed (3.7/5.0) as well that the workshop was engaging.

Participants agreed overall that the workshop was satisfactory (3.8/5.0)

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.

Roundtable topics included:
“I’m Not Old School. I’m What They Tore Down When They Built The Old School”: Reflections on the Value of Transparency in Teaching,
Led by Daniel J. O’Keefe

Design Thinking in the Classroom, Co-led by David W. Gatchell & Erik Gernand.

Taking Risks in Teaching,
Led by Wendy Lee Wall

Specialized Internal Workshops and Sessions for Faculty
We also conducted specialized workshops and sessions for specific units at Northwestern, tailored to the needs of individual departments and programs.
We offered:

- Assessment in graduate education for TGS
- Creating inclusive learning environments (PPH Retreat 1)
- Building critical thinking into course design PPH Retreat 2

- Engaging Students in Blended and Online Courses
- Engaging Students in Online Courses
- Inclusive Teaching
- Stories that Stick: Storytelling as a Meaningful Teaching Strategy
II. GRADUATE AND POSTDOCTORAL PROGRAMS

We support graduate students and postdoctoral fellows in becoming reflective teaching practitioners with the aims to advance their careers and improve student learning, and to advance the instruction provided to more than 4,000 Northwestern undergraduates each year.
The Center leads professional development programs and events to support these future faculty and researchers throughout their career trajectory. Programs such as the New TA Conference (NTAC), the NTAC Workshop Leaders, the yearlong Teaching Certificate Program, the Graduate Teaching Mentor program, the Graduate Teaching Fellows program, CIRTL at Northwestern, and the Graduate and Postdoctoral Workshop Series are all aimed at developing reflective approaches to learning and teaching. This past year, over 500 graduate students and postdocs participated in our programs: 174 attended our New TA Conference; 260 attended our Searle Graduate and Postdoctoral Workshops; and 55 completed our yearlong Teaching Certificate Program. We also had 147 graduate students and postdocs from STEM and SBE disciplines participate in our CIRTL at Northwestern programs.

New TA Conference (NTAC)
The New TA Conference (NTAC) is a 1-day conference held each September for new teaching assistants (TAs) at Northwestern. Through peer-led workshops, new TAs prepare to teach in their discipline. In 2016, we offered 6 discipline-specific workshops and 8 small group discussions where 224 registered for the event and 174 attended.

Evaluation: Participants completed a paper evaluation at the conference, rating each workshop and discussion on a 5-point scale and providing comments on “what went particularly well” and “what aspects of this workshop could be improved.” The average rating for all sessions was 4.6. Discipline-specific workshops were well-received as new TAs commented favorably on the opportunity to ask questions related to teaching in their departments, grading student work, and seeing effective teaching strategies modeled. The average rating for small group discussions was also positive, with an average rating of 4.6 for all discussion sessions. TAs said they liked hearing and sharing personal experiences, receiving practical advice and feedback from experienced TAs, and having the opportunity to ask more specific questions.

NTAC Workshop Leaders
We provided a 2-day training session for the NTAC Workshop Leaders to develop and implement workshops at the New TA Conference. On day one, Workshop Leaders and Graduate Teaching Fellows (GTFs) learned about effective approaches to teaching and learning while developing skills necessary to implement a co-facilitated interactive workshop. On day two, the NTAC Workshop Leaders and GTFs ran through portions of their workshops and
received peer feedback. This year we had 12 NTAC Workshop Leaders participate in the program from a variety of disciplines.

**Teaching Certificate Program (TCP)**
The Teaching Certificate Program is a year-long program for graduate students and postdocs designed to help participants prepare for college teaching. Through a series of interactive seminars, faculty mentoring, peer-led workshops, and peer-led small-group discussions, participants work to develop a learner-centered course in their discipline and iterative versions of their teaching statement. Seminars focus on learner-centered course design, intercultural pedagogy, assessment of student learning, and evaluation techniques. Reflective activities are integrated throughout the program to encourage participants to reflect on their approaches to teaching and learning. This year, 55 participants completed the program, 5 of whom were postdoctoral fellows.

**Evaluation:** Participants made statistically significant gains in their confidence in creating measurable learning objectives, implementing evidence-based teaching practices, collecting evidence to determine if students have met learning objectives, designing a course that integrates inclusive methods and assessments, and in creating an inclusive learning environment. These gains were measured via pre and post-program evaluation surveys.

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**Reflections from Teaching Certificate Program Participants**

“I think the TCP is a superb program and I value it greatly.”

“Participating in the Teaching Certificate Program has been very helpful and I am sure it will have a positive impact in my career. A sincere thank you to all members of TCP for sharing your ideas and knowledge on teaching/learning - it has been tremendously helpful to an aspiring professor.”

“Overall, I thought it was very useful to actively think about many of the teaching concepts put forward. I particularly like the idea of backward design, and hope to implement it if I get the opportunity to teach my own course.”

“The exercise almost immediately made me a more intentional, thoughtful, strategic teacher.”
Graduate Teaching Mentors (GTM) Program
Graduate Teaching Mentors guide peers in the Teaching Certificate Program (TCP). Six mentors are appointed for a full academic year with a $3,000 stipend, 3 of which are funded by the Searle Center and 3 from The Graduate School. They mentor 2-3 discipline-specific groups of TCP participants (10-12 total), guiding their growth as reflective practitioners, providing oral and written feedback on their work, and discussing and applying relevant literature on teaching and learning.

Graduate Teaching Fellows (GTF) Program
The Graduate Teaching Fellows are a select group of 8 advanced graduate students across disciplines who develop their teaching and professional skills while contributing to the pedagogical development of other graduate students on campus. Fellows are appointed for a full academic year with a stipend of $3,000 funded by the Graduate School. Among other activities, the Graduate Teaching Fellows develop workshops for the New TA Conference and Searle’s Graduate and Postdoctoral Workshop Series; conduct teaching observations for graduate students; and develop discipline-specific projects aimed at providing mentorship and improving undergraduate student learning and graduate student teaching in their home departments.

Graduate and Postdoctoral Workshop Series
To provide continuing support to graduate students and postdocs in their teaching, we offer interactive workshops at the Searle Center in fall, winter, and spring quarters. Workshops are developed and co-facilitated by Center staff as well as trained Graduate Teaching Fellows and Workshop Leaders. This year, we offered 18 workshops on topics such as: Grading and Feedback in STEM, Aligning Assessments with Learning Objectives, and Building an Inclusive Classroom. We had a total of 260 graduate students and postdocs attend our workshops throughout the year, with a range of 8-16 at each session. On a 5-point scale, the evaluation average rating for this series was 4.5. See Table 7 in section 11.2 of the Appendix for more details.
Specialized Workshops and Sessions for Graduate Students and Postdocs

In addition to our regular programs, we worked with interested departments and programs to provide workshops aimed specifically at their particular interests. These included workshops on developing teaching statements and portfolios for the Departments of Music Theory and Cognition, Spanish & Portuguese, and English, as well as workshops on developing a teaching statement for graduate students in Anthropology, Psychology, and Sociology. Additionally, we offered a three-day “Teaching Portfolio Boot Camp” open to all graduate students and postdocs at Northwestern that focused on developing teaching statements and peer reviews of teaching portfolio materials. Overall, 27 graduate students and postdocs attended the Portfolio Boot Camp. Feedback for these sessions was positive, with participants reporting that they found resources very helpful and improved in their understanding of how to write a teaching statement and build a teaching portfolio.

CIRTL at Northwestern is currently comprised of programs and learning communities: Mentored Discussions of Teaching, the Searle Teaching-As-Research (STAR) Program, a CIRTL track of the Teaching Certificate Program, the MOOC-Centered Learning Community, and the CIRTL Workshop Series. One-hundred-sixty graduate students and postdoctoral fellows participated in CIRTL at Northwestern programming during the 2016-2017 academic year, including 13 participants from the Humanities.

Participants in CIRTL at Northwestern programming can achieve different levels of CIRTL Certification as they successfully complete programs aligned with the CIRTL core ideas. These certification levels are recognized by other CIRTL network institutions. This academic year we had 25 participants achieve certification at the CIRTL Associate level and 27 participants at the CIRTL Practitioner level. Of the CIRTL Practitioners, 5 were participants in the STAR (Searle Teaching-As-Research) program.
Mentored Discussions of Teaching
Mentored Discussions of Teaching (MDT) is a quarter-long program where participants observe faculty teaching and meet with them to discuss their teaching methods. Participants also attend 3 meetings co-facilitated by Lauren Woods (CIRTL postdoc) and Rob Linsenmeier (Faculty in Biomedical Engineering) where they discuss their classroom observations and key topics in learning and teaching. MDT served 25 graduate student and 19 postdoctoral fellows.

MOOC-Centered Learning Community (Introduction to Undergraduate STEM Teaching)
The MOOC-Centered Learning Community (MCLC) is led by Lauren Woods (CIRTL Postdoc) and is comprised of graduate students and postdoctoral fellows who are simultaneously enrolled in the CIRTL MOOC (An Introduction to Evidence-Based STEM Undergraduate Teaching). MCLC participants meet weekly in-person to discuss MOOC material and create a community of learners. These meetings were offered in the Fall, Winter, and Summer quarters serving a total of 11 graduate students, 7 postdoctoral fellows, and 2 staff members.

STAR Program
The Searle Teaching-as-Research (STAR) program is a 2-quarter classroom-based research initiative aimed at improving learning and teaching in STEM and SBE disciplines. Participants develop research questions in a classroom context; review literature to inform the project design; select and implement appropriate research methods; collect, analyze, and interpret research data; reflect on research findings and implications; and present their research at a final poster session open to the Northwestern community. This year’s cohort of 5 graduate students came from Chemistry, Civil and Environmental Engineering, Linguistics, and Materials Science and Engineering. Project topics included “Contrasting Cases Using ‘Clicker’ Questions in General Chemistry” and “Integration of CogSci Knowledge with Concept Maps”.

CIRTL Workshop Series
In conjunction with the Graduate and Postdoctoral Workshop Series, 11 CIRTL at Northwestern workshops were offered on topics such as “Viewing Difficult Conversations through the Lens of Social Identity” and “Engaging STEM Students with Active Learning”. We had a total of 170 graduate students and postdocs attend our workshops throughout the year. Some workshops were peer-led by trained workshop leaders, while others were facilitated by Northwestern Faculty or Searle Center Staff including Searle Center Director, Bennett Goldberg. See Table 7 in section 11.2 of the Appendix for more detail.
III. UNDERGRADUATE ACADEMIC SUPPORT PROGRAMS

The Undergraduate Academic Support unit of the Searle Center promotes learning and academic success for all undergraduates by providing opportunities for undergraduates to engage with course material outside of the classroom in a variety of ways that advance learning, strengthen their academic approaches and skills, connect with academic-support opportunities across campus, and develop academic leadership skills.
Undergraduate Academic Support Program Highlights

The past year has brought tremendous change and presented significant new opportunities for the Center’s undergraduate programming. One of our key challenges over the past 5 years has been how to increase the profile of our academic-support programming, so that students know us as a central place to go for academic help, and so that a key feature of the Northwestern experience is easily accessible academic help for undergraduates. As we learned in our benchmarking project last year, most of our peer institutions have some centralized unit for academic support such as tutoring, group study, and academic coaching. To ensure that Northwestern joins those peers in offering that critical support, we have partnered with Weinberg College to develop a plan for rebranding, expanding, and centralizing our undergraduate academic support programs. This effort links to a broader project establishing a space within the Main Library for academic support.

As we move toward establishing a new identity, we remain focused on ensuring the high quality of our programs, using comprehensive evaluation to provide feedback and quality improvement, and reaching out to the students who would benefit from our services. Our key goals for the coming 1-3 years are the following:

1. Effectively marketing our office; using the brand to message to students that seeking academic help is a normal part of being a successful student at Northwestern.

2. Shaping and refining the new Peer-Guided Study Group program (see below); ensuring that all stakeholders -- students, faculty, advisors, and others -- see the program as an asset to Northwestern and its students.

3. Expanding and upgrading the academic coaching we provide in both a one-to-one and group setting (through UPAL), to serve more students and a broader spectrum of students; to provide targeted support that is perceived as highly useful by students, and which results in better academic outcomes; and to create a brand image free of stigma and which reinforces the message that seeking support is part of the Northwestern experience.

4. Effectively incorporating the Weinberg peer tutoring into our drop-in tutoring programs in collaboration with faculty; assessing the current system and considering alternative approaches which might be more streamlined; working with McCormick and other schools/departments to consider folding in additional peer tutoring services -- in an effort to make the process of finding help easy for students, and to ensure consistency in quality and assessment.

5. Creating a plan for further development of the office, with support from our advisory board and executive committee.

6. Bringing our group to the fore in campus conversations, both practice-
and scholarship-oriented, around academic skill development for undergraduates.

7. Collaborating with the Libraries, Weinberg, and Central to envision and create an eventual learning hub in the 2 North space.

NEW INITIATIVES

ESTABLISHING A UNIQUE, RECOGNIZABLE IDENTITY FOR ACADEMIC SUPPORT

As we looked for opportunities to move forward on the goals outlined above, in summer 2016 we were approached by Weinberg College, where there was also strong interest in providing more centralized support for some of the College’s most challenging courses. Thus began a close partnership between Searle and Weinberg. In August 2016, we together began to investigate the possibility of establishing a stand-alone tutoring-type unit at Northwestern. With Mary Finn, Weinberg Associate Dean for Undergraduate Academic Affairs, we developed a proposal over the fall and winter quarters for such a centralized resource. We shopped the ideas around, gathering input and feedback from stakeholders across campus -- administration, staff, faculty, students -- and garnered strong support from a wide array of stakeholders.

This proposal helps to answer the call heard throughout the University for more centralized, prominent academic support. Indeed, over the past several years there has been a growing consensus that academic support deserves a more prominent position in the University landscape. Calls for a centralized academic-support unit have come from the University Transitions Council, the Undergraduate Council, and most recently, the Black Student Experience Task Force, which named a central academic-support hub as one of its 14 recommendations. Our goal is to ensure that Northwestern join many of our peer institutions (Cornell, Dartmouth, Duke, Harvard, Penn, and Wash U, among others) in offering undergraduates a prominent, centralized unit for academic support.

We plan to establish a rebranded, centralized unit which will continue the academic-support programming we have long offered, with expanded services. Initially, services offered will comprise current Searle programs, as well as the Weinberg chemistry, math, and physics drop-in peer tutoring, which is being placed under Academic Resource Center management. We plan for expansion, with the guidance of an advisory board and executive committee composed of colleagues from the schools as well as Student Affairs.
COLLABORATION ON THE NEW ACADEMIC RESOURCE CENTER

Meanwhile, in spring 2017, Sarah Pritchard, Dean of the University Libraries, expressed interest in partnering to establish a larger space, within the Main Library, for a wide range of academic support services. This new space, the Academic Resource Center, will be located in the Main Library’s North Tower, and will house a number of units and services providing academic support, including our group. This space provides an ideal opportunity for us to locate our rebranded academic-support services in a central location on campus. Renovations are planned, and we envision, ultimately, a comfortable space where students can make use of our services and the services of other units, and can have consultations with staff, receive services such as tutoring and coaching, study individually, and engage in group study and other collaborative learning. We’ll also continue to offer programming at locations across campus, which, based on survey data, we know students appreciate.

CREATING THE PEER-GUIDED STUDY GROUP PROGRAM

Over the past several years, we have faced 2 key challenges related to our small-group study programs, GSW and AMP. First, over time GSW had become less evenly operationalized across courses, with some faculty highly involved in writing worksheets and training peer leaders, and others much less so. As a result, some of the courses’ workshop materials were less relevant to the linked course than others, and some peer leaders felt more connected to the courses than others. Second, with 2 similar programs running side-by-side, there was a fair amount of confusion over the distinctions between the 2, causing some frustration among advisors, faculty, and students.

At the end of the 2015-2016 academic year, we began to explore the idea of addressing these problems by consolidating the Academic Mentoring Program (AMP) and Gateway Science Workshop (GSW) program. We held several meetings with key stakeholders to examine the possibilities, culminating in a joint GSW-AMP advisory group meeting in fall 2016.

With the support of faculty and other key partners, we decided to create the Peer-Guided Study Group program, which will replace both AMP and GSW starting in fall 2017. This new program will draw from what we consider to be the best features of each program: the student-focused nature of the AMP sessions, which involve review, practice, and discussion of student questions rather than strictly worksheet problems, and the weekly collaborative preparation opportunity for peer leaders from the GSW program.

The new Peer-Guided Study Group program will run in all of the courses formerly served by GSW and AMP, with the addition of Statistics 202. As before, students will register at the start of the quarter and meet weekly in small groups, with a peer facilitator. Peer
facilitators will continue to be trained by us and take part in the SESP 291 course (see below). Facilitators will also have a weekly prep session, in which they meet in discipline-specific groups to review course content, share ideas, and plan for the week’s session. In the 2-hour weekly sessions, students will address points of confusion, review course notes and materials, collaboratively work through practice problems, and share strategies for success in the course.

We anticipate that the student-centered nature of this structure will more effectively support students who are at risk for struggling in the courses. 2017-2018 will be a pilot year for the Study Group program, and we will collect data to inform decisions about how, where, and to what extent to modify the program approach.

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**2016-2017 PROGRAMMING**

Over the year we had more than **2,400 student registrations** in our programs, and **165 peer leaders**. These students took part in course-support programming -- programs linked to particular courses -- as well as general academic skills support programming, and leadership training.

Student participants are required to commit for the full quarter, so that the groups 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 2 hours. Students are expected to attend all sessions and prepare for each session in advance. With the addition of the Biology 215-217-219 sequence to the program, AMP ran in 10 courses over the year. In total, AMP had 547 registrations, up from 478 the previous year, with 44 peer mentors leading the weekly group meetings.

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**Course-Support Programming**

**Academic Mentoring Program (AMP)**

AMP provides academic support for undergraduates enrolled in gateway courses known to be difficult for many students. Mentors – fellow undergraduates who have taken and done well in the course – meet weekly with a small group of students to discuss and work through questions and challenging course concepts. Mentors participate in training and meetings with Searle staff, and provide regular feedback about their group’s progress. Peer mentors also take an education course concurrent to their mentoring, which supports their development as group facilitators and as facilitators of learning (see SESP 291 below).
Evaluation: A matched-group analysis showed that AMP participants earn statistically significantly higher grades in the courses than do non-participants, and this holds across GPA tertiles, with the greatest advantage for participants seen in the lowest GPA tertile. We also measured change over the quarter of participants and nonparticipants in their approach to study and related factors; participants tend to fare better than nonparticipants in terms of the amount of “unrelated memorizing” (studying without understanding) they engage in, as well as the amount of productive self-regulating study behavior they engage in, and their degree of self-efficacy for the course. (Differences are statistically significant.) Student satisfaction ratings are uniformly high, with average scores for items such as “AMP helped me understand the course material better,” “I benefitted academically,” and “I would participate in AMP again” above 4 on a 5-point scale.

“AMP was a friendly environment where we all lift each other so we could all collectively do our best”
--2016 participant in General Chemistry
Gateway Science Workshop (GSW) program
Begun in the late 1990s, the GSW program brings undergraduates together in small groups (5–7 students) with a peer mentor, to work on challenging conceptually oriented problems related to a STEM course. Groups meet weekly for two hours, and peer mentors meet an additional 2 hours with the course professor or TA to review the worksheet problems. Peer mentors also take an education course concurrent to their mentoring; see SESP 291 below.

During 2016–2017, we had 1,188 registrations within 27 courses, up from 779 the previous year, within the Chemistry, Biology, Physics, and Mathematics Departments, as well as Engineering. Groups met with 81 peer mentors, 16 of whom are second-year “senior” mentors who also help lead weekly training meetings.

Evaluation: We have continued to build a database, now pooling data from more than 13 years. These pooled analyses reveal an overall positive impact of the program on course grades and retention, with larger retention effect sizes seen for minority students in several courses.

A number of papers, and a book, have been published detailing the grade and course retention benefits for participating students.

In 2016, we published a paper in the International Journal of Science Education describing a study based on GSW, investigating the role of academic diversity in small learning groups. We use data from 5,367 GSW participants nested within 1141 learning groups, we used a regression analysis to estimate the effect of group diversity, measured in two ways, on course performance.

Our results indicated that academic-preparedness diversity is generally associated with positive learning outcomes, that academically less-prepared students derive greater benefit, and that less-prepared students fare best when they are not alone in a group of highly prepared students.
Peer-Led Undergraduate Study (PLUS)
The Searle Center finished its third full year in partnership with the Office of Residential Academic in offering Northwestern undergraduates a drop-in tutoring option through the PLUS program. In PLUS, students meet with others in their course to study, and peer leaders (fellow students who have taken and done well in the courses) are available to provide guidance. Unlike AMP, students are not asked to pre-register, and sessions are drop-in. PLUS events are held in the new Shepard Engagement Center, and snacks are provided.

In 2016-17, PLUS provided support in the following courses:
- Biol 215, 217, 219, 308
- Chem 101, 102, 103, 210
- Econ 201, 202, 310-1
- Engineering Analysis 1 & 2
- Math 212, 213, 214, 220, 224, 230
- Physics 130, 135
- Stat 210

PLUS had 593 student sign-ins this year, up slightly from 539 last year, with 26 student leaders facilitating. 225 students came just once, 82 came 2-4 times, 14 came 5-7 times, and 7 came 8-18 times.

Evaluation: Because of the limited nature of students’ engagement with PLUS, we do not track course grades, but rather survey students on their perceptions of the program. On follow-up surveys, 70% of participants agreed or strongly agreed that PLUS helped them understand course material better; 73% agreed or strongly agreed that it helped them feel they were not the only one struggling with course material; and 81% agreed or strongly agreed that they would attend PLUS again (n=155).

General Academic Skills Support Programming

Peer Academic Coaching program - Pilot
After a successful pilot last year, we ran our first full year of the Academic Coaching program in 2016-17. Twenty-seven undergraduates received individualized coaching from 8 peer coaches. Coaches supported students with general studying and learning issues, such as time management, motivation, organization, and referrals to campus resources.

Evaluation: For this pilot year, we have not tracked student progress, but have surveyed all participants on their impressions of the program and its impact. Feedback is very positive. On a follow-up survey the average rating for “I would recommend the program to other students” 4.4 out of 5, and for “My coach provided useful guidance” 4.8 out of 5 (n=15).
Undergraduate Program for Advancing Learning (UPAL)

UPAL completed its third full year in 2016-17.

UPAL is a small-group experience, with students meeting weekly throughout a quarter with a group of 5-7 peers and 1 or 2 peer mentors. In the weekly sessions, students focus on topics such as: "smart studying" for optimal learning; interacting effectively with faculty; managing time effectively; managing academic stress; and staying focused on learning in a competitive environment.

This year, 150 students participated in UPAL, up from 112 last year, with 15 peer mentors leading groups.

Evaluation: Pre-post surveys show that UPAL participants make greater gains than a control group (of WCAS probation students) in sense of belongingness at the university, help seeking behavior, peer learning behavior, self-regulation for learning, and time management for studying (all statistically significant, with moderate to high effect sizes [Cohen’s d], ranging from .34 to .85; n=126).

Students participating in UPAL were more likely to be off probation the following quarter than nonparticipants: 58% of UPAL participants left the probation list versus 41% of nonparticipants. This difference is statistically significant. (Data are from the start of the program in 2015.)

“Listening to others’ stories was really helpful in understanding that you aren’t alone in your academic and personal struggles. Opening up might help somebody else in the group.”

--2017 UPAL PARTICIPANT
The Academic Resource Portal (www.northwestern.edu/searle/academic-portal) is a comprehensive listing of academic-support and academic-enrichment opportunities at Northwestern. The site also offers student-to-student advice on succeeding at Northwestern, advice on study and learning strategies, and more.

The Academic Resource Portal had more than 15,000 unique page views during the 2016-2017 year

Academic Leadership Programming

SESP 291: Mentoring Learning in the STEM Disciplines
SESP 291 is the training course for first-time GSW and AMP peer mentors. It is a 0.5-credit course that extends over two quarters.

In 2016–2017 we enrolled 52 students in the course; students engaged in readings, reflection papers, and discussions on teaching and learning in a small-group environment. CTEC data suggest students appreciate the course and feel it supports them in developing as group leaders.

Academic Strategies Workshops
This year we built on the success of last year’s revamped Academic Strategies Workshops program. These workshops are peer-led, interactive sessions designed to help participants develop insights about learning that can help them maintain academic success. Workshops are held in residence halls and other locations.

Ninety-five students attended 16 workshops, up from 65 last year, with 7 student leaders facilitating.

Sessions included
“Professors Don’t Bite: Building and Leveraging Faculty Relationships,”
“Finals Prep Workshop,” and “Study and Test Taking Strategies.”

Participant feedback was positive: The average rating for overall workshop helpfulness was 4 out of 5 (n=57).

“I absolutely loved the program. My peer coach definitely made a positive difference in helping my study habits.” 2016-17

--Peer Coaching participant
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. The seminars are pitched to the schools by students who are interested in leading them, so there are a relatively small number running each quarter. 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. This year, 13 undergraduate leaders from SESP, SoC, and WCAS took part in the program. Participant ratings are high; in spring, the average rating for “How well did this series aid in your development?” was 4.5 out of 5 (5=extremely well).

Collaboration with Office for Undergraduate Research: Research Preparation Programming
2016-2017 marked the first full collaboration between Searle and the Office for Undergraduate Research (OUR) in operation of the undergraduate research preparation workshops, both the Science Research Workshop (SRW) and the Arts, Humanities, and Social Science Research (AHSS) Workshop. Through a series of discussions, our offices jointly determined that such a partnership would leverage the expertise of OUR for the programs, better align the two programs, provide a streamlined experience for students, and ensure stronger preparation of students entering URG and similar competitions.

We worked in close partnership with OUR to recruit for and hire a new part-time research workshop coordinator, reporting directly to OUR Director Peter Civetta with a dotted-line relationship to Marina Micari in Searle. This person was responsible for developing and leading the SRW program. Twenty-two students completed SRW last year, and all were funded for research.

“Rather than play-by-play guide of what I should do, Jamila has helped us to cultivate a correct mindset and a good attitude. .... The reality [of the program] is better than what I could have imagined.”
– SOS LEADER DEVELOPMENT PROGRAM PARTICIPANT 2016
IV.
RESEARCH, ASSESSMENT & EVALUATION

Research, assessment and evaluation work is central to the Searle Center’s mission of advancing learning and teaching at Northwestern and beyond. In addition to conducting our own research, we work with Northwestern faculty to enhance assessment within courses, and collaborate with Northwestern faculty and faculty from other institutions on programs and projects funded by organizations such as NIH, NSF, and USAID to advance learning and teaching.
RESEARCH, ASSESSMENT AND EVALUATION HIGHLIGHTS

This year, we conducted a study of our assessment and evaluations services for Northwestern faculty to understand the degree to which, and ways in which, faculty implement changes as a result of these services. A secondary aim was to determine what we can do to continue supporting evidence-based decision making by faculty. Fifteen of the 17 faculty members we contacted completed a survey. The majority have implemented changes and had initiated new conversations with their colleagues as a result of the evaluation study. Almost all reported a strong likelihood to recommend the services to their colleagues. Approximately three-quarters indicated that the evaluator being housed within the Searle Center positively contributed to their satisfaction, their willingness to bring the project to the evaluator, and the value of the recommendations made.

New Research Assessment and Evaluation Projects

CIRTL Active Learning Workshops Evaluation

Synchronous online workshops piloted through CIRTL, called Active Learning Workshops, are designed to help graduate students and postdocs develop transferable skills that will enable their success in a diverse set of biomedical careers. Postdocs and graduate students from 46 universities have participated in workshops on the following topics: Creating Effective Learning Communities; Developing Work/Life Resilience; Writing an Effective Teaching Philosophy Statement; and Creating and Owning Your IDP. We developed a 2-phased, mixed-methods evaluation designed to achieve 3 main goals: 1) understand the degree of change in participants’ behaviors, perceptions, and attitudes, and what participants attribute this change or lack of change to; 2) obtain critical feedback on the workshop model in order to increase the potential for learning and change; and 3) begin to understand participants’ perspectives of their own socialization and the culture (e.g. faculty mentor, department, school/college, institution) that defines their engagement in professional development activities. Findings support a workshop model that integrates skills application with deliberate moments of reflection and community building. A manuscript to submit to Innovative Higher Education is in preparation.

Critical Thinking and Calculus

In collaboration with a postdoctoral lecturer in the Department of Mathematics, we conducted a study to understand whether peer feedback and reflective activities can enhance critical thinking in a calculus course. Specifically, the quasi-experimental design study allowed us to track positive shifts in perceptions of the importance of multiple perspectives in mathematical thinking, the role of peers in their learning, and the value of clear communication in mathematics. We also saw an increased ability to communicate
mathematical arguments. These data could inform decisions related to teaching methods and assessments in calculus sequences. We are currently preparing a manuscript to submit to PRIMUS, a journal of mathematical education and pedagogy.

Evaluation of Calculus Discussion Sections (Math 220, 224, 230)
The Department of Mathematics partnered with the Searle Center last year to conduct a study of student experiences of the Math 220, 224, and 230 calculus course sequence. Our findings from survey, focus group, and interview data called attention to opportunities to improve students’ experiences and learning within the discussion sections. As a result, the department made a number of changes to the discussion section format. This year, the Department of Mathematics wanted understand how these innovations were working from the student perspective. Through in-depth interviews with students, we found that the discussion sections are now better aligning with their expectations, and that students are benefitting from new small group discussions and are more satisfied overall. The findings also suggested that some structural elements could be further refined to enrich student learning.

Evaluation of Learning Environments in Active Learning Classrooms
The Searle Center explored evaluation of the learning environments created in a range of Active Learning Classrooms at Northwestern using the Generalized Observation and Reflection Protocol (GORP) interface. Developed at the University of California-Davis, the GORP is an online tool that allows observers to make non-qualitative, non-judgmental observations of students’ and instructors’ actions during an in-class session (and record actions such as instructor lecturing, students working in groups, students answering a clicker question, and the like). The goal of this project was to explore the different ways faculty utilize classrooms to support student learning, to better understand how faculty perceive of and use active learning strategies, and to gauge student perceptions of their experience with doing classwork in active learning classrooms. Unfortunately, we found that the instrument could not be sufficiently calibrated between the pairs to achieve sufficient inter-rater reliability, so much of the GORP data could not be used to generate meaningful reports for faculty.

However, in a separate survey of students who took courses in five active learning classrooms (Kresge Hall rooms: 2-319, 2-343, 2-415, and 4-410), 74% of the students reported more group activities compared to similar classes; 83% of students reported more types of in-class activities. These differences were particularly noticeable for Humanities and STEM with upper-division students more than twice as likely to view collaborative work as the in-class activity most beneficial to learning. Sixty-seven percent of the students reported better interaction with peers compared to similar classes; 72% of the students reported greater interaction with the professor, and 83% of the students reported that their class was more socially integrated.
Executive Hybrid Model, Health Services and Outcomes Research Graduate Program

The Director of the Health Services and Outcomes Research Graduate Program asked Searle Center staff to assist her in understanding how students experience a new Executive Hybrid Model. The Director wanted to take time during the program’s pilot year to gain a fuller picture of what aspects of the structure were working well and what students believed could be improved. We moderated a focus group in November with 9 students. Our report and our suggestions for structuring a departmental meeting about the findings have allowed faculty and staff to make changes that will better support student learning.

Evaluation of Social Inequality & Diversities Pilot Courses

Weinberg College of Arts and Sciences asked us to help evaluate the impact of their pilot courses for a possible Social Inequalities and Diversities Requirement, proposed by the Academics/Education subcommittee of the University Diversity Council. One-hundred-seven students and alumni who took one of the many pilot courses taught over the past 3 years completed an online survey. The study findings, which address motivations, satisfaction, perceived impacts, and key course elements such as discussions, have supported the continued decision-making process related to the requirement.

Evaluation of University Teaching Awards at Northwestern

The aim of this study was to understand the overall impact that Northwestern University Teaching Awards have on individual recipients and the role they have had in shaping and changing the climate of teaching and learning at Northwestern.

Fifty-three of the 100 award winners consented to participate in the study. Participants were asked to review the personal statement that they submitted at the time of the nomination process and to complete a short accompanying survey.

Forty-three of the 53 participants reviewed their original teaching statements.

Notable findings: 33% of respondents indicated that they had developed or enhanced their ideas—and continued to learn about learning and teaching—since receiving the award. Twenty-eight percent suggested that while they still held their original conceptions, other things had changed, altering their approach to teaching.

Seventy-four percent of respondents indicated that receiving a UTA had a positive impact on their teaching.

We plan to conduct more in-depth interviews with recipients this fall.
Introductory Course Curriculum Development

A faculty member who will begin teaching an introductory course in the humanities sought help in understanding students’ perceptions, interests, and expectations with respect to the course topic. We designed and moderated a focus group for students with high-potential for taking this course. Some findings affirmed the faculty member’s plans for the course; other findings were more surprising and took the course development process in new, exciting directions that will engage students.

Performance Studies Curriculum and Communications

A Performance Studies faculty member wanted to understand students’ decision making around elective courses. She also sought to understand students’ perceptions of performance studies generally, and their expectations for specific courses based upon course descriptions. Additionally, she needed to have a clearer sense of the impacts of a set of performance studies electives. We conducted a focus group with students who had recently taken these courses. The findings spurred her to shift her approach to writing course descriptions in a way that better sets expectations. Perhaps even more importantly, she had a stronger sense of the specific teaching approaches that are engaging to students and support their learning.

Public Health Teaching Awards Evaluation

Administrators from the Program in Public Health sought our assistance in helping them understand their faculty and staff’s perceptions of current and potential teaching and mentoring awards. We conducted a survey which provided them with data on perceptions of both the nature and the volume of current awards and responses to proposals for new awards.

PIRE: Computationally Based Imaging Structure of Materials (NSF; Ken Shull PI)

The NSF funded PIRE program aims to probe the color/rendering properties of complex heterogeneous materials, with a focus on the materials used in creating works of art. The grand challenge is to understand the coupling of material structure from nanoscopic to macroscopic length scales to the visual appearance, and to use this coupling as a probe of material properties. The PIRE program integrates teams from leading cultural heritage science institutes in France, the Netherlands and Italy. While the tools will be applicable to modern engineered materials as well, examples from art provide a much broader educational impact. A combination of individual and cohort visits to the three primary international sites will provide graduate and undergraduate students with an international perspective on science and research, while building skills in communicating the role. The Searle Center will lead evaluation of the education components of this program.
Ongoing Research, Assessment and Evaluation Projects

Curriculum Reform in Biology (Howard Hughes Medical Institute (HHMI; Gregory Beitel PI))

Funded by the Howard Hughes Medical Institute, this project aimed to reform the undergraduate biological science training at Northwestern by emphasizing inquiry-based learning both in lecture and laboratory courses, introducing students to laboratory research in their freshman year and altering the course sequence.

The Searle Center was involved in all aspects of the program from faculty and teaching assistant training, program design for BioEXCEL and NU Bioscientist programs to assessment and evaluation.

Two manuscripts have been published in the Journal of College Science Teaching and Innovative Higher Education. In addition, manuscripts on evaluations of the BioExcel program and the NU Bioscientist Mentoring Training Program have been submitted to CBE Biology Life Science Education and Teaching and Mentoring.

Doctoral and Post Training Program Evaluation

Northwestern has more NIH T32, T90 and K12 grants training grants, and training grants funded by private foundations than any other university in the nation, representing tens of millions of funding annually. These awards are highly competitive and contribute to Northwestern’s reputation as a national leader in graduate and post graduate training.

The Center currently evaluates twelve doctoral and postdoctoral T32 training grant programs including Biophysics, Biotechnology, Endocrinology, Chemistry of Life Processes, Information Storage, Mechanisms of Aging and Dementia (MAD), Motor Control, Neuroscience of Human Cognition, Physical Therapy, Reproductive Medicine (K-12 BIRWCH) and Research Training in Cardiovascular Epidemiology and Prevention.

We supported a competing renewal for Cellular and Molecular Basis of Disease and 7 new applications for Digital Mental Health, General Motor Control Mechanisms and Disease, Interdisciplinary Neuroscience, Magnetic Resonance Imaging, Neurobiology of Information Storage, Neurodegeneration and Repair, and Reproductive Science Medicine and Technology.

During the upcoming academic year we will conduct focus groups for Northwestern’s Clinical and Translational Sciences Institute’s TLI, KL2 and SIP training programs.
Enhancing Critical Thinking in STEM Disciplines: A Faculty Development Model

(NSF: Course, Curriculum and Laboratory Improvement (CCLI)
This project involved 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 in STEM students by introducing activities to promote critical thinking and developing course-specific assessments of critical thinking. Sixteen STEM faculty – 9 faculty from CCC and 7 from Northwestern completed the program. We are continuing to analyze data on changes in faculty conceptions of critical thinking, and assessment. We are currently preparing a manuscript to be submitted to the Journal of Community College Research and Practice.

Enhancing and Expanding Experiential Learning Modules across Disciplines and Institutions

(NSF IUSE: EHR - ; Gloria Kim, Biomedical Engineering PI)
This 2-year, exploratory project in Engaged Student Learning brings together engineering faculty members from Northwestern and the University of Florida with the aim of supporting the adaptation, implementation, and dissemination of best practices in experiential learning in a 3-quarter course sequence in Northwestern’s Department of Biomedical Engineering and a two-course sequence in Florida’s Department of Electrical and Computer Engineering. The Searle Center has been involved in all aspects of assessment and evaluation in this project. Dr Mary Beth Finch, a postdoc who is working on the project has observed courses, interviewed students, faculty and teaching assistants and surveyed students to assess the strengths and weaknesses of Northwestern’s BMED_ENG 305/306/307 course sequence in terms of the “How People Learn” framework.

Mentoring for Success; Developing Fundamental Skills for Biomedical Research (NIH; Rick McGee PI)
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 support both formative and summative evaluation of the program by providing feedback on surveys that have been designed by the Program Director and Assistant Director and by conducting focus groups. Program directors have been very responsive to participant feedback and have made major changes to the program over the years on the basis of evaluation data.
Northwestern University-Patient-Centered Intervention and Engagement Training K12 Faculty Scholars Training Program (NU-PATIENT)

This Agency for Healthcare Research and Quality (AHRQ) funded NU-PATIENT K12 program is designed to support the early research career development of junior faculty who are engaged in patient-centered outcomes and comparative effectiveness research. The Searle Center has consulted on evaluation of trainee competencies and has conducted annual focus groups.

PIRE: NanoRING (NSF; Matthew Grayson PI)

Searle Center staff developed pre, formative, and post surveys for students participating in the NSF-funded “NanoRING” program which is a 3-year grant program based out of the Materials Research Center and takes place in Munich. The surveys yielded data about the students’ research experiences in materials nanotechnology and the program’s potential impacts in areas such as students’ confidence in decision-making and their understanding of STEM career options.

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 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 646 students from 7 US universities in 2013. A latent profile analysis conducted by our collaborator, Dr. Fred Bryant from Loyola University Chicago, found that the new survey has 3 valid and reliable subscales for ‘interacting,’ ‘participating’ and ‘embracing’ with a total of 16 questions. Survey questions for the ‘observing’ subscale were not reliable. A manuscript on the validation study will be submitted the International Journal of Intercultural Relations in December 2017.
In 2016-2017, The Searle Center collaborated on 10 grant proposals to federal funding agencies with partners from across the Northwestern and at other institutions nationally and internationally. Details of the grants are summarized below. Bennett Goldberg, Searle Center Director was the PI on 5 of the proposals.

<table>
<thead>
<tr>
<th>Principal Investigator (PI)</th>
<th>Grant Title</th>
<th>Funder</th>
<th>Total amount Requested</th>
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<tr>
<td>Bennett Goldberg and Sarah Hokanson Boston University</td>
<td>Postdoctoral Pathways – Broadening Access to Career Advancement (IPERT)</td>
<td>NIH</td>
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<tr>
<td>Bennett Goldberg</td>
<td>Launching Careers in Research and Teaching (LCRT) Institutional Research and Academic Career Development Awards (IRACDA) (K12) Source of Support: NIH</td>
<td>NSF</td>
<td>$3,189,795</td>
</tr>
<tr>
<td>Bennett Goldberg</td>
<td>NSF-IGE Next Steps - The PhD Competencies Program</td>
<td>NSF</td>
<td>$215,870</td>
</tr>
<tr>
<td>David K. Campbell, Boston University</td>
<td>PIRE - Research and Education in Multifunctional 2-Dimensional Molecular Membranes</td>
<td>NSF</td>
<td>$4,439,801</td>
</tr>
<tr>
<td>Prem Kumar and Jason Wertheim</td>
<td>NIST Professional Research Experience Program (PREP Program)</td>
<td>NIST PREP</td>
<td>$12,189,035</td>
</tr>
<tr>
<td>Babafemi Taiwo</td>
<td>Expanded Multidisciplinary NeuroAIDS Research Training to Improve HIV Outcomes in Nigeria</td>
<td>NIH</td>
<td>$1,433,025</td>
</tr>
<tr>
<td>Claudia Hawkins, Lisa Hirschorn</td>
<td>Building capacity for patient-centered outcomes research to improve the quality and impact of HIV care in Tanzania</td>
<td>NIH</td>
<td>$1,496,806</td>
</tr>
<tr>
<td>Bennett Goldberg</td>
<td>Preparing Future Faculty to Improve STEM Education: Broadening the National Impact of the CIRTL Network</td>
<td>NSF</td>
<td>$405,992</td>
</tr>
<tr>
<td>Bennett Goldberg</td>
<td>Collaborative Research: CIRTL INCLUDES - Toward an Alliance to Prepare a National Faculty for Broadening Successes of Underrepresented 2-Year and 4-Year STEM Students</td>
<td>University of Wisconsin-Madison</td>
<td>$4,800</td>
</tr>
<tr>
<td>Bennett Goldberg</td>
<td>Palestinian University Research Hub</td>
<td>Department of State</td>
<td>$242,355</td>
</tr>
<tr>
<td>Bennett Goldberg</td>
<td>Better English for Better Employment Opportunities Project</td>
<td>US Consulate Jerusalem</td>
<td>$45,177</td>
</tr>
</tbody>
</table>
V. INTERNATIONAL PROJECTS

The Searle Center supports Northwestern’s mission to heighten its global impact by engaging in partnerships and projects to enhance learning and teaching internationally. We are involved in a number of projects across the Middle East and Africa to enhance the learning of undergraduates, graduate students, faculty and refugees who are outside the formal education system.
University-Industry Curriculum Development for the Information Technology Programs An-Najah University Palestine-Northwestern Collaboration (Bennett Goldberg PI)

This project is funded by a grant from the US Consulate General in Jerusalem. The program aims to link student training directly to industry by designing and launching an apprenticeship program in the Information and Computer Sciences Department at Al-Najah National University (ANNU) in Palestine. Technical and entrepreneurship coaching and training for 30 faculty, technicians, and mentors.

The Searle Center hosted a visit from two faculty from An-Najah and a computer science company director from Palestine in January 2016. Visitors observed classes at Northwestern that have connections with industry and met with faculty from engineering, computer sciences and the Segal Design Institute.

In August 2016, Searle Center staff (Bennett Goldberg, Susanna Calkins and Denise Drane) and Bruce Ankenman from the Segal Design Institute facilitated workshops on co-teaching, critical thinking, industry-university partnerships, mentoring and project based learning for faculty and industry representatives at An-Najah University.

Nabil Alshurafa and Bryan Pardo from Computer Science/Feinberg will facilitate a second series of workshops in the spring/summer of 2018. The Northwestern team will review syllabi and curricula for 10 new computer science courses in the winter of 2018.

Joint US-Africa Materials Institute (JUAMI) (NSF; Sossina Haile, Northwestern PI)

One strategy for addressing the challenge of economic development in Africa is to create a scientifically and technically literate pool of individuals who can serve to drive the engine of home-grown innovation.

JUAMI is an NSF funded collaboration between Northwestern, Columbia University and the University of Michigan that aims to: 1) help build research level scientific knowledge and capabilities in Materials Science in Africa 2) establish US-African collaborations 3) teach frontier research topics to young US and African researchers and 4) increase awareness and international communication.

The first JUAMI summer institute was held in Arusha, Tanzania from May 29th to June 10th 2016. Denise Drane observed the institute and has been conducting the evaluation. Surveys and focus groups provide strong evidence that JUAMI was effective in building scientific knowledge and capabilities in students. Ninety-eight percent of participants agreed that JUAMI had advanced their understanding of concepts and theory that are important in the field of materials science. A further 89% of students agreed that they were taking away at least one new idea for how to address a challenge in their own research. The 12 month follow-up assessment revealed that all JUAMI participants has accessed the JUAMI portal and 9 were actively engaged in joint projects.
Palestinian Faculty Development Program (AMIDEAST/USAID/Open Society; Greg Light & Denise Drane PIs)
The Searle Center has partnered with three universities An Najah University (ANU), Palestinian Polytechnical University (PPU), and Palestinian Technical University Khadoorie (PTUK) in the West Bank since 2010 as part of a USAID/Open Society funded program to increase the use of student-centered teaching in these particular universities and across the West Bank more broadly.

The Searle Center played a key role in helping all three universities to establish learning and teaching centers.

In addition we collaborated with Dr. Zaher Nazal from the Department of Community Medicine at ANU and a team of ANU Masters students to conduct an impact analysis of An-Najah’s Center for Excellence in Learning and Teaching (CELT) using a counter-factual analytical design.

Results of the impact analysis suggest that the An-Najah CELT has had a substantial impact on teaching practice and university policies to support student centered teaching. A paper on the results of the impact analysis will be submitted to the *International Journal of Academic Development* in December 2017.

Greg Light and Denise Drane have co-authored a monograph about the project for AMIDEAST, the NGO that lead the PFDP project in Palestine.

Testing the Effectiveness of Tailored Non-Formal Education Programs in the Middle East (USAID; Denise Drane, Northwestern PI)
UNESCO estimates that there are currently 7 million children and youth out of school across the Middle East, due largely to the Syrian refugee crisis. Educational needs of many of these children and youth are met through Non-formal Education (NFE), a mode of education that operates in cooperation with formal education systems to help children and youth transition successfully into formal education systems and to meet school-based learning and psychosocial needs related to conflict.

This research project is a collaboration between Northwestern, the University of Michigan and the Salam Institute.

We piloted a 10 week highly interactive curriculum focused on developing critical thinking and emotional intelligence for out-of-school children and youth aged 12-24 in Jordan and Lebanon.
Preliminary analysis on data from 152 participants from Lebanon found statistically significant gains on 6 of the 14 Developmental Assessment Profile items which measure emotional literacy. For example, on the pre-test, 38.8% of students selected “often” or “always” for “I deal with frustration in proper ways”, compared to 65.5% on the post-test (p<0.001). Statistically significant gains were made on; feeling good about myself, dealing with frustration overcoming challenges, accepting others, feeling in control of my life and avoiding things that are dangerous/unhealthy.

Students reported using critical thinking in their everyday lives more frequently on the post-test than the pre-test. For example, on the pre-test, 52.0% reported that they compare ideas when thinking about a topic compared with 75.8% on the post-test (p<0.0001).

Gains were statistically significant on 12 of the 14 items; think about possible results before taking action, identify options when facing a problem, listen to someone even though you disagree with them, have more than one source of information before making a decision, express your thoughts on a problem, give reasons for opinions.

USAID has extended funding of the program to Palestine (West Bank). We conducted a teacher training workshop in Birzeit from August 11-13, 2017.

“Multidisciplinary NeuroAIDS Research Training to Improve HIV Outcomes in Nigeria (NIH D43 Training Grant; Babafemi Taiwo PI)

The overarching goal of this training grant is to develop the capacity of Nigerian doctors to lead NeuroAIDS research and training in Nigeria, and to generate research results that will influence policy makers, program managers and medical/public health practice in the country and throughout Africa.

The Searle Center conducted focus groups and surveys with trainees and surveys with mentors to identify strengths and weaknesses of the program and to assess the self-reported impact of the program on trainees. Both trainees and mentors are very satisfied with training program. Trainees report that they have gained valuable skills in conducting clinical research and that the program has provided them with good networking opportunities. They particularly value the multidisciplinary approach that the program takes.
University of Global Health Equity (Rawanda) Consultation

The University of Global Health Equity (UGHE) was established in 2015 in Rawanda by Partners in Health to create a university that will advance the science of health care delivery and create a cadre of global change makers. UGHE has launched an innovative Master of Science in Global Health Delivery program and has plans to develop undergraduate and graduate programs in medicine and health sciences. The Searle Center is currently providing feedback on course and program assessments for the Global Health Delivery program. We hope to establish a more formal partnership in the 2017-2018 academic year.
VI. LEARNING COMMUNITIES

The Searle Center aims to connect faculty, staff, and postdocs across Northwestern who share interests in learning, teaching, assessment, and evaluation by creating learning communities who meet together regularly at the Searle Center to discuss new research and ideas and to share best practices. This year we launched a learning community focused on research and evaluation. We hope to establish a number of new learning communities in 2017.

Research and Evaluation Learning Community

As part of the Searle Center’s mission to build capacity for evaluation and research among staff members, we identified a need for a learning community around these topics. In the winter quarter, the new Learning Community began meeting biweekly in order to share best practices, stay current with research methodologies, and support one another in the specific challenges common to research and evaluation practice.

Members of the community include staff from the Searle Center, Institutional Research, Student Affairs, the Office of Change Management, Library Services, and other units.

In the past 12 months we have discussed culturally responsive evaluation, Q-sort, social practice theory, measurement of demographic variables and scale development. Members have also shared evaluation instruments and findings.
VII. SERVICES

The Searle Center provides a range of services for faculty, postdocs, and graduate student instructors and the broader Northwestern community to enhance learning and teaching across the University.

Services include departmental and informational workshops, end of term focus groups, grant writing assistance, individual consultations with faculty and graduate students, MOOC initiative support, small group analysis and structured observations of teaching.

Other services include the Robert E. Menges Library that is located at the Searle Center and the Northwestern Assessment Repository.
Services for Faculty, Graduate Students, Postdocs, & Instructors

Departmental Workshops and Information Sessions
The Searle Center responds to the specific teaching and learning needs of departments and programs with tailored workshops and information sessions. We led 4 requested workshops and four information sessions in departments across campus.

End-of-Term Focus Groups
Course and Teacher Evaluations (CTECs) are not administered by the university in courses with fewer than 5 students out of concerns over anonymity and confidentiality, so the Searle Center offers CTEC-style focus groups for these instructors at the end of the term. A trained staff member or Teaching Consultant (TC) 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.

Grant Writing Assistance
The Center collaborates with faculty to design and write the education and evaluation sections of proposals to government agencies such as NSF and NIH and private foundations such as the Sloan foundation. The Center participates in panels for junior faculty sponsored by the Office of Research Development on how to write the pedagogical and evaluation sections of grants.

During the 2016-2017 academic year, the Searle Center assisted faculty with the following proposals:
- 5 NSF Early CAREER awards
- 2 NSF PIRE awards
- 2 other NSF awards
- 7 NIH T32 (training grant) awards
- 2 NIH D43 awards
- 6 awards from other agencies and foundations

Individual Consultations
The Center provides individual consultations to faculty, graduate students, postdocs, and other instructors at the University, from Evanston, Chicago and NU-Q campuses. These can be carried out in conjunction with a Small Group Analysis or structured observation, or with those who choose to seek expertise in response to CTECs or other end-of-term course evaluations. They can also be stand-alone or ongoing meetings to engage in a variety of teaching, curriculum planning, and grant writing activities, for individuals or in campus units.

Searle Center senior staff worked individually with approximately 150 faculty members this year, consulting on issues of teaching, assessment, and...
grant writing. We also met with graduate students not involved in Searle programs seeking feedback on teaching statements and job application materials.

**MOOC Initiative Support**

Since 2013, the Searle Center has been actively involved in the development of Coursera MOOCs taught by Northwestern faculty.

We have consulted on five MOOCs this year, as well as 2 specializations consisting of 5 individual courses and capstone projects, offering advice on course design, the alignment of learning objectives and assessment strategies, and feedback on specific assignments and course activities. Through our representation on the Coordinated Service Center (CSC), we have helped develop different processes related to the successful creation and running of MOOCs and are working on assessing the overall impact of the MOOCs on faculty and students.

The preliminary findings suggest that while learner completion rates may have been low overall (3%), the multi-course specializations had far higher completion rates. Moreover, faculty who taught the MOOCs generally developed a more flexible understanding of teaching and learning overall, adapting strategies and resources fostered in an online environment to their standard in-person Northwestern courses.

**Small Group Analysis (SGA)**

The SGA is a confidential service provided by the Searle Center for Northwestern faculty, postdocs, and graduate students. During a Small Group Analysis (SGA), Center staff and trained graduate-student Teaching Consultants (TC) conduct a structured focus group with students in a class, and provide instructors with detailed and candid feedback during a follow-up meeting. The Searle Center employed 12 TCs this year. In 2016-2017, we conducted 42 SGAs for faculty and graduate instructors: 15 in fall 2016; 11 in winter 2017; 15 in spring 2017; and 1 in summer 2017. A yearly evaluation of the service indicates that faculty are generally satisfied with the helpfulness of the report and consultation in helping them identify strengths and weaknesses of their teaching, with specific strategies on how to improve. Ongoing feedback collected from the TCs indicates that they benefit professionally from conducting the SGAs, thinking more deeply about how students and faculty often have different expectations and understandings, and about strategies for enhancing student learning more broadly. We are planning to conduct a more systematic evaluation of the impact in the upcoming academic year.
Structured Observations (SOs) of Teaching for faculty/Teaching Observations for graduate students and post-docs

In structured observations of teaching, 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, and follow up with the instructor afterwards.

On occasion these observations may be combined with SGAs. In 2017-2018, we conducted 27 structured observations for faculty through our faculty initiatives and 35 for graduate students and postdocs through our Graduate Student and Postdoctoral programs.

Services to the University and Broader Community

Assessment and Accreditation Council

Leadership of the Assessment and Accreditation Council came under the purview of the Searle Center as of May 2017. Jake Julia, Associate Vice President & Associate Provost of Academic Initiative in the Office of Change Management, previously chaired the Council. Bennett Goldberg now chairs the Council as part of his role as Assistant Provost for Learning and Teaching.

Since 2008, the Council, with the support of the Office of the Provost, has been working to develop the culture of assessment at Northwestern. This is a culture in which student learning—and the evidence of student learning—is an institutional priority, a faculty and instructor commitment and a driver of change in learning and teaching at all levels.

Assessment of student learning outcomes is increasingly at the forefront of the work of faculty and administration, and has become increasingly prioritized by the Higher Learning Commission, our accrediting agency.

Assessment Brochure

This past fall we created a brochure designed to: direct faculty and staff to our Student Learning Assessment website; communicate the university’s emphasis on, and the widespread use of, assessment of learning; and share why assessment is important and how it works.

It features examples of assessments that have resulted in curriculum innovations at the course, departmental, and school levels. This brochure has been disseminated at forums, workshops, and other events around the university.
Northwestern Assessment Repository
On May 18, 2017, we announced a new online resource: the Northwestern Assessment Repository. The Repository fulfills University goals to:

1. track and report assessment initiatives around the University at department, program, and school/unit levels to the Higher Learning Commission, as required for our reaccreditation process.
2. be a living resource for faculty and staff who can share and access assessment activities (including methodologies used and lessons learned) and advance their progress in assessment.

The Repository is an effort of the Assessment and Accreditation Council. It resides on our Assessment of Student Learning website and will be updated annually.

Robert E. Menges Library
The Center continues to add to and curate its 1000 holdings (books, articles, journals, and DVD/videos), providing faculty, staff, graduate students and postdoctoral fellows 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 and professional correspondence, so that they may be archived properly. In addition, we have continued to use substantial new technologies to the library (cameras, interactive white board, and other specialized equipment) to communicate with our stakeholders and collaborators and to model effective integration of teaching and technology. View the holdings at http://www.northwestern.edu/searle/resources/searle-center-library.html

Searle Center Website
The Center website (www.northwestern.edu/searle) serves as a significant resource to the Northwestern community by offering information about specific programs and services, ongoing and new research projects, dissemination and publications, as well as specific resources related to learning and teaching in higher education. It links to the Undergraduate Academic Resource Portal and the new Assessment of Student Learning website. In 2016-17, the website had a total of nearly 81,000 unique page views.

Twitter Account
The Center’s twitter account (@searlelearning) 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 twice a week and has garnered over 800 followers. The Twitter account can be found at https://twitter.com/searlelearning
Searle Center staff publish in peer-reviewed journals and present at national and international conference. Many publications and presentations are collaborations between Searle Center staff and Northwestern faculty.


**In Press**


**Under Review**


**Invited Talks and Presentations (External to Northwestern)**


Goldberg, B. & Calkins, S. (November, 2016) Invited webinar. “Asking (and answering) research questions about your teaching.” LASPAU, affiliated with Harvard University, the Brazil STHEM Consortium.


Goldberg, B. B. American Physical Society March Meeting, (March 2017). New pathways to physics instruction: Blending a MOOC and in-person discussion to train physics graduate students and postdocs in evidence-based teaching. (New Orleans, LA)

Invited Talks and Presentations at Northwestern


INTERNAL COMMITTEE AND BOARD WORK

- Assessment and Accreditation Council (Bennett Goldberg, co-chair; Susanna Calkins, Sharisse Grannan)
- Broader Impacts Forum (Susanna Calkins, Denise Drane, Sharisse Grannan)
- Community Engaged Learning University Steering Committee (Denise Drane, Nancy Ruggeri)
- Coordinated Service Center (CSC) (Susanna Calkins)
- CTEC Committee (Susanna Calkins, Bennett Goldberg, Nancy Ruggeri)
- Educational Technologies Advisory Committee (Bennett Goldberg, co-chair; Susanna Calkins)
- Faculty Open Classroom Initiative Planning Committee (Bennett Goldberg, Susanna Calkins, Nancy Ruggeri, Muveddet Harris)
- Inclusive Teaching Forum Planning Committee (Bennett Goldberg, Susanna Calkins, Nancy Ruggeri, Muveddet Harris)
- Learning Analytics Committee (Bennett Goldberg, Denise Drane)
- Learning, Teaching, and Assessment Forum Planning Subcommittee (Susanna Calkins, chair; Sharisse Grannan; Muveddet Harris)
- Learning Management Systems Administrator Committee (Muveddet Harris)
- Mellon Mays Undergraduate Fellowship Review Committee (Marina Micari)
- MSHE Informational Interviews for potential and incoming students (Susanna Calkins)
- Prosthetic Orthotic Center Education Program (NUPOC) Advisory Board (Susanna Calkins)
- Student Enrichment Services Advisory Council (Marina Micari)
- Student Surveys Planning Group (Marina Micari)
- TEACHx Day (Promoting Experiments in Teaching and Learning) Planning Committee; Subcommittee - Digital Poster Committee and Committee (Muveddet Harris)
- Transition Programs Council (Bennett Goldberg, Marina Micari, Jamie Hoversen, Una McGeough, Jamila Anderson)
- Transitions Programs Assessment Committee (Marina Micari, co-chair)
- Undergraduate Council (Bennett Goldberg, Marina Micari)
- Undergraduate Research Advisory Council (Marina Micari)
- Undergraduate Research Assistant Program Review Committee (Marina Micari)
- University Diversity Council (Bennett Goldberg)
- Women’s Center Advisory Board (Nancy Ruggeri)
- Women’s Center Change Makers Program (Nancy Ruggeri)

External Committee and Board Work
Committee on Institutional Cooperation (CIC) Teaching Center Directors Group (Susanna Calkins, Denise Drane, Nancy Ruggeri, Bennett Goldberg)
Learning Spaces Collaboratory (Bennett Goldberg)
Center for the Integration of Research, Teaching and Learning (Leadership Team, Bennett Goldberg)

Teaching
Calkins, S. MSHE 467 - History and Philosophy of Higher Education (SESP) [Spring 2017]
Calkins, S. MSHE 405 - Learning and Teaching in Higher Education (SESP) [Winter 2017]
Drane, D. MSCI 445 - Writing for Peer Review and Publication in Medicine [Fall, 2016]
Goldberg, B. - Learning and Teaching in Higher Education (SESP) [Winter 2017]
Harris, M. MED INF 498-DL - Capstone Project (MHI) [Winter 2017]
Micari, M. SESP 291 - Peer-Led Learning: Theory and Practice
Micari, M. Master of Science in Learning & Organizational Change (SESP) - Capstone Advising
Ruggeri, N. BIOL SCI (SPS) 170 - Biology [Summer 2017]
Ruggeri, N. LING 480 - The Language of Teaching and Learning [Summer 2017]
Reviewing

Active Learning in Higher Education (Marina Micari)

International Journal of Science Education (Marina Micari)

International Journal of Teaching and Learning in Higher Education, South Africa (Susanna Calkins, Marina Micari)

Journal of Educational Research Review (Muveddet Harris)

Journal of Higher Education (Susanna Calkins)

Journal of STEM Education (Marina Micari)

Pediatrics (Denise Drane)

PLOS Biology (Denise Drane, Marina Micari)

Professional & Organizational Development Conference (Susanna Calkins, Denise Drane Nancy Ruggieri)

Routledge Press (Susanna Calkins)

Social Sciences and Humanities Research Council of Canada (SSHRC) (Susanna Calkins)

PROFESSIONAL DEVELOPMENT ACTIVITIES

External

- Center for Culturally Responsive Evaluation & Assessment Conference. April 2016, Chicago, IL. (Erica Green, Marina Micari)
- Cognitive Science Speaker Series
- Allison McCann, Vice News, *Against Boring Charts*, Tuesday, January 17th, 2017: Colloquium. (Denise Drane, Sharisse Grannan, Muveddet Harris)
- Steve Franconeri, Northwestern University, *Now they see it: Visual Communication of the Patterns in your Data*. Tuesday, March 7th, 2017: Tutorial. (Sharisse Grannan, Muveddet Harris)
- Northwestern Best Practices Forum, April 25, 2017 (Susanna Calkins, Bennett Goldberg, Muveddet Harris)
Sixth Annual Medical Education Day, The all-day event, held in the Robert H. Lurie Medical Research Center, was sponsored by the Department of Medical Education, Northwestern Simulation and the Feinberg Academy of Medical Educators (FAME). September 30, 2016, Chicago, IL. (Muveddet Harris)

Professional and Organizational Development (POD) Conference. November 2016, Louisville, KY. (Susanna Calkins, Denise Drane, Bennett Goldberg, Nancy Ruggeri, Lauren Woods)

Inclusive Learning at Northwestern: Building a Community of Practitioners, May 5-6, 2017 (Susanna Calkins, Bennett Goldberg, Muveddet Harris, Jamie Hoversen, Marina Micari, Nancy Ruggeri, Lauren Woods)

LGBTQ Ally Training, June 2017 (Marina Micari)

Step Up Bystander Training, February 2017 (Marina Micari)

TEACHx Day, Promoting Experiments in Teaching and Learning, May 19, 2017 (Susanna Calkins, Denise Drane, Bennett Goldberg, Muveddet Harris)

Internal

Team Building 2 – Searle Center Strategic Planning and Values. Searle Center for Advancing Learning and Teaching second Mini-Retreat. October 12, 2016. (All Staff) In this session, we discussed our center values and mission, as well as barriers we face in achieving our center goals.

Two-day Training: Inclusive Learning and Teaching at Northwestern: Building/Training a Community of Practitioners: On Friday, May 5th and Saturday, May 6th, 2017, the Searle Center for Advancing Learning and Teaching hosted a two-day training at the Great room for building a community of practitioners who are working to create an inclusive learning environment at university. We invited professors Charles Behling, (University of Michigan) and Kristie Ford (Skidmore College), who are both nationally recognized Intergroup Relations (IGR) experts as facilitators. The goals of the training were: 1) to establish and begin to build a community of practitioners working to create an inclusive learning environment at Northwestern who will continue to share, learn, and develop together; and 2) to introduce participants to some tools to facilitate Intergroup Dialogue in support of inclusive learning. Approximately 25 Northwestern administrators, faculty, staff, and postdocs from various cultural backgrounds and fields attended the training sessions. They had discussions on issues such as “social identities”; and worked on various activities in pairs, small groups, and in a large group.
X. PEOPLE

Searle Center
Director: Bennett Goldberg

Administration Team
Remi Akinyemi, Project Coordinator
Dreana Rubel, Center Manager
Bianca McKenna, Work Study Student

Faculty Initiatives Team
Susanna Calkins, Director
Sharisse Grannan, Assessment Associate
Muveddet Harris, Program Associate

Faculty Initiatives Intern
Daniel Ussishkin, Intern ****

Research and Evaluation Team
Denise Drane, Director
Samar Abboushi, International Research Consultant
Remi Akinyemi, Project Coordinator
Mary Beth Finch, Research Associate
Sharisse Grannan, Assessment Associate
Sara Woods, Research Associate

Undergraduate Programs Team
Marina Micari, Director, Undergraduate Programs
Jamila Anderson, Undergraduate Academic Program Coordinator*
Erica Green, Undergraduate Academic Program Coordinator**
Jamie Hoversen, Undergraduate Academic Program Coordinator**
Una McGeough, Undergraduate Academic Program Coordinator
Borislava Miltcheva, Undergraduate Academic Program Coordinator*

Graduate and Postdoctoral Programs Team
Nancy Ruggeri, Director, Graduate and Postdoctoral Programs
Kate Flom Derrick, Senior Program Coordinator
Stephanie Walaszek, Program Associate, Graduate and Postdoctoral Programs**
Lauren Woods, CIRTL Postdoctoral Associate

** Left during 2016–2017
***One year appointment Sept 1, 2016-July 31, 2017
****Winter and Spring 2017
Graduate Teaching Mentors (GTM)s
2016-2017
Hayley Belli, Biomedical Engineering
Elliot Gardner, Plant Biology and Conservation
Kevin Hsu, Psychology
Amanda Kleintop, History
Pamela Krayenbuhl, Screen Cultures
Ira Murfin, Theater and Drama

Graduate Teaching Consultants (TCs)
Benjamin Aspray, Screen Cultures
Arjada Bardhi, Economics
Sara Clifton, Applied Math
Tracy Dobie, Learning Sciences
Kevin Hsu, Psychology
Matthew June, History
Pamela Krayenbuhl, Screen Cultures
Emily Lane, Musicology
Saoirse McSharry, Biological Sciences
Zachary Sommers, Sociology
Annie Sullivan, Screen Cultures
Seth Swanner, English

New Teaching Assistant Course (NTAC) Workshop Leaders
Anne d’Aquino, Biological Sciences
Gabby Garcia, Rhetoric and Public Culture
Chen He, Chemistry
Saoirse McSharry, Biological Sciences
Miriam Piilonen, Music
Katherine Simeon, Communication Sciences and Disorders
Zachary Sommers, Sociology
Uzma Wilson, Communication Sciences and Disorders

*Joined during 2016–2017*
Searle Fellows 2016-2017

Humanities

**Mira Balberg** (Religious Studies/Weinberg College of Arts and Sciences), Mentor: Richard Kieckhefer, Project Title: *Questioning Religion: Problematized Teaching in an Introductory Course*

**Sarah Bartolome** (Music Education/Bienen School of Music), Mentor: Maud Hickey, Project Title: *Community Engagement as Fieldwork: Designing, Implementing, and Evaluating a University-School Partnership for Pre-Service Music Educators*

Professional Schools (Medicine)

**Mobola Campbell-Yesufu** (Department of Medicine, Division of Hospital Medicine/Feinberg School of Medicine), Mentor: Gary Martin, Project Title: *An Innovative Curriculum in Health Disparities and Social Justice for Internal Medicine trainees*

**Shannon Crabtree** (Department of Medical Education, Physician Assistant Program/Feinberg School of Medicine), Mentor: David Salzman, Project Title: *Implementing Mastery Learning into Physician Assistant Education Using Bedside Ultrasonograph*

**Priya Gopwani Jain** (Department of Pediatrics, Division of Emergency Medicine/Feinberg School of Medicine), Mentor: Walter Eppich, Project Title: *Improving Trainee Feedback through a Clinical Coaching Program*

**Russ Horowitz** (Department of Pediatrics, Division of Emergency Medicine/Feinberg School of Medicine), Mentor: Patricia Garcia, Project Title: *Development of a Longitudinal Ultrasound Curriculum for Early Medical Students*

**Angira Patel** (Department of Pediatrics, Division of Cardiology/Feinberg School of Medicine), Mentor: Karen Mangold, Project Title: *Developing a Competency Driven Bioethics Curriculum for Graduate Medical Trainees*

**Amy Y. Wang** (Department of Preventive Medicine, Division of Health and Biomedical Informatics/Feinberg School of Medicine), Mentor: Mark Adler, Project Title: *Introducing Medical Students to Clinical Informatics Practice and Careers*
Social Sciences

**Klinton Bicknell** (Linguistics/Weinberg College of Arts and Sciences), Mentor: Matthew Goldrick,

**Project Title:** Teaching Students to Evaluate Evidence Using Skills-Focused Teaching Practices and Real-World Materials

**Terri Sabol** (Human Development and Social Policy Program/School of Education and Social Policy), Mentor: Dan McAdams

**Project Title:** Applying the Science of Child Development to Real-World Policy Contexts

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**STEM**

**Angela Roberts** (Communication Sciences and Disorders /School of Communication), Mentor: Pamela Souza

**Project Title:** Meeting World Health Needs through Innovative Teaching Approaches in Communication Sciences and Disorders

**Michael Rubenstein** (Electrical Engineering and Computer Science/McCormick School of Engineering and Applied Science), Mentor: Todd Murphey

**Project Title:** Modifying Team Dynamics in an Applied Mechatronics Course

**Tiffany Marie Schmidt**
(Neurobiology/Weinberg College of Arts and Sciences), Mentor: Thomas Bozza

**Project Title:** Deepening Student Learning through Engagement in a Class of Thirty

---

**Gregory Wagner** (Mechanical Engineering/McCormick School of Engineering and Applied Science), Mentor: Todd Murphey

**Project Title:** Building Critical Thinking about Computational Simulation in Engineering
Teaching Certificate Program (TCP) Participants

Babak Afsharipour
Sandra Berjan
Hyung Sup Bhan
Nathaniel Scott Bobbitt
Anne Boemler
Lama Bou Mjahed
Chris Bresee
Haimei Chen
Morgan Clark
Luther Clement
William Cochran
Ruth Martin Curry
Misty De Berry
Evan Dutmer
Gretchen Ellefson
Lorien Elleman
Matthew Ford
Lindsay Garmirian
Roy Gomez Cruz
Lidija Gorsic
Ian Hartman
Alicia Hernandez Grande
Eric Hill
Michael Hyland
Sabrina Jaromin
Emily Lane
Angela Leone
Carmen Lin

Christina LoTempio
Pantelis Loupos
C. Tova Markenson
Inmaculada Martinez Reyes
Andreea Micu
Aaron Moldenhauer
Sneha Narayan
Daniel O'Young
Miriam Piilonen
Lauren Priniski
Hope Rehak
Amir Salaree
Ashlie Sandoval
Laura Shanahan
Nevo Shinaar
Robert Sinko
Leigh Soares
Zach Sommers
Sarah Stainbrook
Jonathan Su
Jessica Talamantez
Yearnchee (Curtis) Wang
Kristi Ward
Miya Williams
Chuqiao (Vicky) Yang
Xianghui Zou
Justin Zullo
Iyabo Kwayana
Theodore Foster
XI. APPENDIX

This appendix includes relevant data associated with the programs, services and initiatives described above.

11.1 FACULTY INITIATIVES DATA

Table 1. Learning, Teaching, and Assessment Forum, 2016

<table>
<thead>
<tr>
<th>Session Titles</th>
<th>Panelists</th>
</tr>
</thead>
<tbody>
<tr>
<td>Faculty Panel: “Examining the Evidence of Students Learning.”</td>
<td>Franziska Lys, Professor, German, Weinberg</td>
</tr>
<tr>
<td>Five faculty members from a range of disciplines and schools shared their reflections and insights on the assessment of student learning.</td>
<td>Jacob Smith, Associate Professor, Radio-Television-Film, SoC</td>
</tr>
<tr>
<td></td>
<td>Babette Seligmann Sanders, Associate Professor, Physical Therapy and Human Movement Sciences, Feinberg</td>
</tr>
<tr>
<td></td>
<td>Moderator: Candy Lee, Professor, Journalism, Media, Integrated Marketing Communications, Medill</td>
</tr>
<tr>
<td>1. Diversity and Its Discontents: A Readers Theater for the Classroom (PPT not available)</td>
<td></td>
</tr>
<tr>
<td>Charlene Blockinger, Adjunct Lecturer, SPS</td>
<td></td>
</tr>
<tr>
<td>Aaron Bannasch, Instructional Technologist, SPS</td>
<td></td>
</tr>
<tr>
<td>Kelly Roark, Faculty Support Specialist, NUIT</td>
<td></td>
</tr>
<tr>
<td>Duncan Moore, Independent Writing and Editing Professional</td>
<td></td>
</tr>
<tr>
<td>2. Assessing Learning Without Exams: A Constructivist Approach to Learning (PPT not available)</td>
<td></td>
</tr>
<tr>
<td>Fadia Antabli, Assistant Professor of Instruction, Arabic, Middle East and North African Studies Program, Weinberg</td>
<td></td>
</tr>
<tr>
<td>3. Advancing Research Training and Student Learning with Agile Research Studios</td>
<td></td>
</tr>
<tr>
<td>Haoqi Zhang, Assistant Professor, Electrical Engineering and Computer Science, McCormick</td>
<td></td>
</tr>
<tr>
<td>4. Designing Student-Centered Learning Outcomes in Design Thinking and Communication (DTC): A Work in Progress (PPT not available)</td>
<td></td>
</tr>
<tr>
<td>Penny Hirsch, Professor of Instruction, Co-Director, Design Thinking and Communication, Associate Director, The Writing Program, Bruce Ankenman, Professor, Industrial Engineering &amp; Management Sciences, Co-Director, Segal Design</td>
<td></td>
</tr>
<tr>
<td>---</td>
<td></td>
</tr>
<tr>
<td>5. Assessing Learning Using Games to Stimulate Student Engagement (PPT not available)</td>
<td></td>
</tr>
<tr>
<td>Michael Peshkin, Professor, Mechanical Engineering, McCormick</td>
<td></td>
</tr>
<tr>
<td>Kelsey Rydland, Data Management Specialist, Library Services</td>
<td></td>
</tr>
<tr>
<td>Silvia Lovato, Doctoral Student, Media, Technology and Society, SoC</td>
<td></td>
</tr>
<tr>
<td>Candy Lee, Professor, Journalism, Media, Integrated Marketing Communications, Medill Morgan Ho, Graduate Student, Integrated Marketing Communications, Medill</td>
<td></td>
</tr>
<tr>
<td>6. Use of Mastery Learning to Teach and Assess Written and Communication Skills of Graduating Medical Students</td>
<td></td>
</tr>
<tr>
<td>David Salzman, Assistant Professor of Emergency Medicine and Medical Education, Feinberg</td>
<td></td>
</tr>
<tr>
<td>Diane B. Wayne, Vice Dean for Education, Dr. John Sherman Appleman Professor of Medicine, Feinberg</td>
<td></td>
</tr>
<tr>
<td>Post-Forum Workshop: Making Assessment Useful</td>
<td></td>
</tr>
<tr>
<td>Sharisse Grannan, Assessment Associate, Searle Center for Advancing Learning and Teaching</td>
<td></td>
</tr>
<tr>
<td>Description: Assessments and resulting data can be extremely useful—but sometimes, after the data are gathered and documented for some immediate purpose, it’s difficult to find any additional use for them. In this hour-long interactive workshop, participants will explore strategies for clarifying the relationships between teaching activities, assessments, and learning outcomes. This work helps us design assessments that prompt meaningful short- and long-term decisions and inform teaching practice.</td>
<td></td>
</tr>
<tr>
<td>Workshop Title</td>
<td>Date</td>
</tr>
<tr>
<td>------------------------------------------------------------------------------</td>
<td>----------</td>
</tr>
<tr>
<td>Rethinking the Lecture: Strategies to Engage Students and Promote Critical</td>
<td>10.05.16</td>
</tr>
<tr>
<td>Reflection in Class, Led by Susanna Calkins</td>
<td></td>
</tr>
<tr>
<td>Session I - Course Design: Developing Effective Learning Objectives (Online</td>
<td>10.25.16</td>
</tr>
<tr>
<td>workshop – morning session), Led by Susanna Calkins</td>
<td></td>
</tr>
<tr>
<td>Session II - Course Design: Developing Effective Learning Objectives (Online</td>
<td>10.25.16</td>
</tr>
<tr>
<td>Workshop – afternoon session), Led by Susanna Calkins</td>
<td></td>
</tr>
<tr>
<td>Rethinking the Lecture: Strategies to Engage Students and Promote Critical</td>
<td>11.09.16</td>
</tr>
<tr>
<td>Reflection in Class, Led by Susanna Calkins</td>
<td></td>
</tr>
<tr>
<td>Leading Effective Discussions, Led by Marina Micari</td>
<td>01.25.17</td>
</tr>
<tr>
<td>Providing Meaningful Feedback, Led by Susanna Calkins</td>
<td>02.03.17</td>
</tr>
<tr>
<td>Encouraging Risk and Failure in Learning, Led by Susanna Calkins &amp; Muveddet</td>
<td>03.01.17</td>
</tr>
<tr>
<td>Harris</td>
<td></td>
</tr>
<tr>
<td>Office Hours and Beyond: Getting Your Students to Seek Academic Help When</td>
<td>03.08.17</td>
</tr>
<tr>
<td>They Need It, Led by Marina Micari</td>
<td></td>
</tr>
<tr>
<td>Assessment: Grading with Intent - Designing Effective Assessments to Improve</td>
<td>04.14.17</td>
</tr>
<tr>
<td>Student Learning, Led by Susanna Calkins</td>
<td></td>
</tr>
<tr>
<td>Assessing and Improving Teamwork in Group Projects, Led by Adam Goodman,</td>
<td>04.18.17</td>
</tr>
<tr>
<td>Patricia Kristine Sheridan, Nicholas Raef</td>
<td></td>
</tr>
<tr>
<td>Roundtable Discussion: Curriculum Mapping, Led by Susanna Calkins &amp; Sharisse</td>
<td>4.27.17</td>
</tr>
<tr>
<td>Grannan</td>
<td></td>
</tr>
</tbody>
</table>

*Average Rating: Overall, the workshop benefited me. (1 Strongly Disagree – 5 Strongly Agree)
Table 3. NUIT and Chicago Campus Collaborated Workshops, 2016-2017

<table>
<thead>
<tr>
<th>Workshop/Roundtable Discussion Title</th>
<th>Date</th>
<th>Attendance</th>
<th>Average Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>Using Gamification to Engage Students (in collaboration with NUIT Faculty Services)</td>
<td>04.20.17</td>
<td>11</td>
<td>N/A</td>
</tr>
</tbody>
</table>

Table 4. University Teaching Roundtable Series, 2016-2017

<table>
<thead>
<tr>
<th>Roundtable Titles and Facilitator(s)</th>
<th>Date</th>
<th>Attendance</th>
</tr>
</thead>
<tbody>
<tr>
<td>“I’m Not Old School. I’m What They Tore Down When They Built The Old School”: Reflections on the Value of Transparency in Teaching Led by Daniel J. O'Keefe, Owen L. Coon Professor, School of Communication</td>
<td>11.01.16</td>
<td>10</td>
</tr>
<tr>
<td>Design Thinking in the Classroom, &lt;br&gt;Co-led by David W. Gatchell, Clinical Associate Professor, Segal Design Institute, and Director of the Manufacturing and Design Engineering program, McCormick School of Engineering &amp; Erik Gernand, Senior Lecturer in Radio, Television, and Film, School of Communication</td>
<td>04.10.17</td>
<td>15</td>
</tr>
<tr>
<td>Taking Risks in Teaching &lt;br&gt;Led by Wendy Lee Wall, Avalon Foundation Professor, Department of English, Weinberg College of Arts and Sciences.</td>
<td>05.11.17</td>
<td>19</td>
</tr>
</tbody>
</table>
### 11.2 GRADUATE AND POSTDOCTORAL PROGRAMS DATA

Table 5. New TA Conference Participation by School, 2016-2017

<table>
<thead>
<tr>
<th>School</th>
<th>Attendance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weinberg College of Arts and Science</td>
<td>78</td>
</tr>
<tr>
<td>School of Communication</td>
<td>44</td>
</tr>
<tr>
<td>McCormick School of Engineering and Applied Science</td>
<td>29</td>
</tr>
<tr>
<td>Bienen School of Music</td>
<td>8</td>
</tr>
<tr>
<td>Feinberg School of Medicine</td>
<td>9</td>
</tr>
<tr>
<td>School of Education and Social Policy</td>
<td>4</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>2</strong></td>
</tr>
</tbody>
</table>

Table 6. Teaching Certificate Program Participants by Discipline, 2016-2017

<table>
<thead>
<tr>
<th>Discipline</th>
<th>Participants</th>
</tr>
</thead>
<tbody>
<tr>
<td>STEM (Science, Technology, Engineering, Math)</td>
<td>22</td>
</tr>
<tr>
<td>Humanities</td>
<td>24</td>
</tr>
<tr>
<td>Social Sciences</td>
<td>9</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>55</strong></td>
</tr>
</tbody>
</table>
Table 7. Graduate and Postdoctoral Workshop Series, 2016-2017

<table>
<thead>
<tr>
<th>Workshop Title</th>
<th>Date</th>
<th>Attendance</th>
<th>Average Rating*</th>
</tr>
</thead>
<tbody>
<tr>
<td>The Digital Age and Active Learning in the Social Sciences and Humanities</td>
<td>Oct. 18, 2016</td>
<td>15</td>
<td>4.6</td>
</tr>
<tr>
<td>Grading and Feedback in STEM**</td>
<td>Nov. 3, 2016</td>
<td>11</td>
<td>4.7</td>
</tr>
<tr>
<td>Teaching and Learning Outside the Classroom</td>
<td>Nov. 15, 2016</td>
<td>8</td>
<td>4.0</td>
</tr>
<tr>
<td>Measuring Mastery: Aligning Assessments with Learning Objectives</td>
<td>Nov. 21, 2016</td>
<td>13</td>
<td>4.4</td>
</tr>
<tr>
<td>Evaluating Your Teaching: Measuring Teaching Effectiveness in the Classroom **</td>
<td>Feb 1, 2017</td>
<td>14</td>
<td>4.6</td>
</tr>
<tr>
<td>Promoting Active Learning in STEM: Strategies for Labs and Lectures**</td>
<td>Feb. 8, 2017</td>
<td>15</td>
<td>4.4</td>
</tr>
<tr>
<td>Building an Inclusive Classroom: Power and Positionality in the Classroom</td>
<td>Feb. 22, 2017</td>
<td>10</td>
<td>4.7</td>
</tr>
<tr>
<td>Larva, Chrysalis, Butterfly: Designing and Implementing Rubrics (Part 1)</td>
<td>Feb. 23, 2017</td>
<td>10</td>
<td>4.6</td>
</tr>
<tr>
<td>Evidence-based Strategies for Implementing Group Work in STEM**</td>
<td>March 7, 2017</td>
<td>14</td>
<td>4.4</td>
</tr>
<tr>
<td>Strategies for Negotiating Student-Student and Student-Teacher Conflict at Northwestern</td>
<td>April 12, 2017</td>
<td>11</td>
<td>4.9</td>
</tr>
<tr>
<td>Title</td>
<td>Date</td>
<td>Rating</td>
<td>Average Rating</td>
</tr>
<tr>
<td>----------------------------------------------------------------------</td>
<td>----------------</td>
<td>--------</td>
<td>----------------</td>
</tr>
<tr>
<td>Larva, Chrysalis, Butterfly: Designing and Implementing Rubrics (Part 2)</td>
<td>April 21, 2017</td>
<td>5</td>
<td>4.7</td>
</tr>
<tr>
<td>Engaging STEM Students with Active Learning**</td>
<td>April 24, 2017</td>
<td>11</td>
<td>4.3</td>
</tr>
<tr>
<td>Mentoring Student Writing: Balancing Student-centered Feedback with Rubric-based Assessment</td>
<td>May 18, 2017</td>
<td>9</td>
<td>4.2</td>
</tr>
<tr>
<td>Active Participation in Lecture and Discussion Classes</td>
<td>May 26, 2017</td>
<td>9</td>
<td>4.7</td>
</tr>
<tr>
<td>If you are using one teaching technology in your class, it should be clickers**/***</td>
<td>April 19, 2017</td>
<td>11</td>
<td>4.0</td>
</tr>
<tr>
<td>Writing Effective Teaching Statements Part I**/***</td>
<td>March 9, 2017</td>
<td>27</td>
<td>NA</td>
</tr>
<tr>
<td>Writing Effective Teaching Statements Part II**/***</td>
<td>March 30, 2017</td>
<td>16</td>
<td>NA</td>
</tr>
<tr>
<td>Creating and Owning Your Individual Development Plan**/***</td>
<td>April 27, 2017</td>
<td>11</td>
<td>NA</td>
</tr>
<tr>
<td>Viewing Difficult Conversations through the Lens of Social Identity**/***</td>
<td>May 9, 2017</td>
<td>12</td>
<td>NA</td>
</tr>
<tr>
<td>Developing Work/Life Resilience**/***</td>
<td>March 21, 2017</td>
<td>12</td>
<td>NA</td>
</tr>
<tr>
<td>Writing Effective Teaching Statements, Part 1**/***</td>
<td>August 2, 2017</td>
<td>12</td>
<td>NA</td>
</tr>
<tr>
<td>Writing Effective Teaching Statements, Part 2**/***</td>
<td>August 29, 2017</td>
<td>4</td>
<td>NA</td>
</tr>
<tr>
<td>TOTAL</td>
<td></td>
<td>260</td>
<td>4.5</td>
</tr>
</tbody>
</table>

*Average Rating: “Give an overall rating for the workshop” (1 Not at all Useful – 5 Very Useful)

**Part of the CIRTL Workshop Series

***Faculty/staff-led workshops. Separate evaluations were done for most of these workshops
### 11.3 UNDERGRADUATE PROGRAMS DATA

Table 8. Undergraduate Programs Participation and Peer Leaders by Program, 2016-2017

<table>
<thead>
<tr>
<th>PROGRAM</th>
<th>NUMBER OF REGISTRATIONS</th>
<th>NUMBER OF PEER LEADERS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gateway Science Workshop</td>
<td>1030</td>
<td>65</td>
</tr>
<tr>
<td>Academic Mentoring Program</td>
<td>547</td>
<td>44</td>
</tr>
<tr>
<td>Undergraduate Program for Advancing Learning</td>
<td>150</td>
<td>15</td>
</tr>
<tr>
<td>Peer-Led Undergraduate Study</td>
<td>599</td>
<td>26</td>
</tr>
<tr>
<td>Peer Coaching</td>
<td>27</td>
<td>8</td>
</tr>
<tr>
<td>Academic Strategies Workshops</td>
<td>95</td>
<td>7</td>
</tr>
<tr>
<td>Student-Organized Seminar Leader Training</td>
<td>13</td>
<td>n/a</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>2,461</strong></td>
<td><strong>165</strong></td>
</tr>
</tbody>
</table>

*Numbers do not represent unique individuals. An individual student can register for more than one section of GSW/AMP or attend PLUS more than once.*