

Eberly Center

Teaching Excellence & Educational Innovation

ANNUAL REPORT

AY2016-17

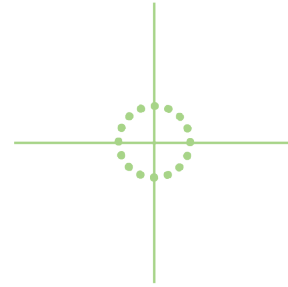


Carnegie Mellon University

Annual Report AY 2016-2017

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Executive Summary



Connecting people, research,
and practice to improve
education at Carnegie Mellon.

To address 156
distinct teaching
and learning
challenges, we
helped 129 faculty
members in their
selection and use
of technology (a
20% increase).

Connecting. Inspiring. Adapting. Those three words aptly describe the Eberly Center in 2016-2017. The support and services we provide are in high demand, as the record-setting numbers in this report attest. And we have responded — by maintaining our high-quality offerings and extending our impact on teaching and learning at CMU. **In AY2016-17, we have...**

Supported 437 faculty and staff educators through all of our events and services combined (a 39% increase over the previous year). Of these, 274 faculty members received individualized consultations on teaching and learning.

Served 586 graduate students and postdocs from 62 academic programs through our seminars, workshops, one-on-one consultations, and TA orientations.

Advised 25 programs and units on effective strategies for curriculum design and assessment, technology-enhanced learning, learning space design, and TA training.

Offered a 2.5-day Incoming Faculty Orientation to 61 new faculty hires.

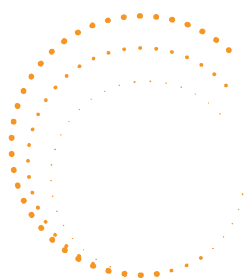
Launched the inaugural CMU Teaching & Learning Summit, attended by 225 CMU community members.

Through these efforts, we reached faculty and graduate students across **all schools and colleges** at CMU.

An important aspect of our work involves educational technology. We help faculty (and graduate students in their teaching-related roles) incorporate technology deliberately to promote student learning — starting with what is known from learning science research and leveraging additional data for ongoing improvement. As such, we exemplify the best of **The Simon Initiative** and are proud to play a central role in translating these practices to teaching and learning at Carnegie Mellon University.

We also work to advance the university's **Strategic Plan 2025** in the areas of Innovative Teaching, Learning Science, and Innovative Experiences for Students. For example, we led the way to these achievements:

* Create new university-level awards to



Inspiring faculty and graduate students to innovate in their teaching.

recognize innovation in teaching and educational impact

* Design a state-of-the-art Technology Enhanced Learning (TEL) Center to open in the new Tepper Quad

* Apply learning science and technology to several CMU educational centerpieces, including introduction to computer science, writing, and introductory science courses.

Leveraging expertise in both pedagogy and technology, the Eberly Center is an internationally recognized leader among university teaching centers. The book, *How Learning Works: 7 Research-Based Principles for Smart Teaching*, co-authored by current and former Eberly members, continues to receive acclaim. It was highlighted as #3 on The Chronicle's "Top 10 Books on Teaching" and has a world-wide audience, with translations into Korean, Chinese, Japanese, Spanish, and (forthcoming) Italian. Our award-winning website received more than 3 million visits this year and is referenced by universities and teaching centers around the globe.



Adapting our efforts to meet the growing needs and emerging opportunities for learning.

Amidst all our achievements, we still recognize the need to stretch and grow. Given the expanding responsibilities and opportunities that today's educators face – and the increased demand for Eberly Center services – we must continue to connect, inspire, and adapt.

In the coming year, we envision making an even greater impact on teaching and learning at CMU by helping more colleagues collect and use data to improve student learning and by enhancing our classrooms through data-informed design.

We are confident that, with our responsive approach to a dynamically shifting environment, we can empower our faculty and graduate student colleagues to create the conditions for Carnegie Mellon students to learn and, through this learning, transform their world.

Marsha C. Lovett, PhD
Director

We helped
132 colleagues
explore the
use of learning
data to improve
teaching and
learning in 107
CMU courses
and 22 CMU
academic
programs.

Creating a Community of Educators

Our mission is to distill the research on learning for faculty and graduate students and collaborate with them to design and implement meaningful educational experiences.

We believe that combining the science and art of teaching empowers our colleagues to create the conditions for students to learn and, through this learning, transform their world.

The Eberly Center Works With...

All faculty members, postdocs, and graduate students who want to reflect on and improve their teaching, including those who are:

- new to Carnegie Mellon and want to calibrate to our students and the institution.
- experienced and successful teachers who want to try new techniques or technologies.
- encountering difficulties in their courses and want help addressing problems.
- new to teaching and want help getting started (including graduate students who anticipate pursuing an academic career).

Our Approach Is...

Learner-centered | We put student learning at the center of the teaching process, helping faculty, postdocs and graduate students to develop course objectives, assessments, and instructional activities that together support and promote student learning and performance.

Educational | We help faculty members, postdocs and graduate students gain a deeper understanding of the principles that underlie effective learning and teaching so that they can make appropriate teaching decisions for their own courses. We do not simply dispense teaching tips.

Collaborative | We work closely with faculty, postdocs and graduate students to help them identify their strengths as teachers and to jointly devise strategies for course improvement and educational innovation.

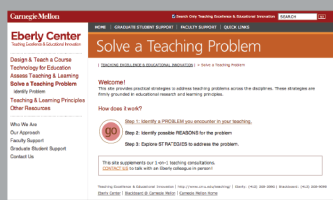
Constructive | We focus on providing constructive and practical feedback to help our colleagues succeed as educators. Our role is to support teaching, not to judge performance.

Data-driven | We help faculty members, postdocs and graduate students to enhance their teaching by collecting information from student artifacts and performance, classroom observations, student focus groups, and examination of teaching materials.

Research-based | We synthesize and apply research, distilled from a range of disciplines, to help faculty and graduate students design and teach more effective courses. We also help faculty colleagues conduct educational research where gaps in the literature exist.

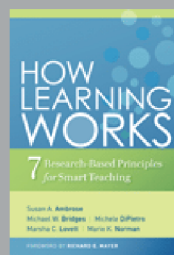
Significant
milestones in
Eberly Center's
recent history

Solve a Teaching Problem
Award-winning site
launched



2008

How Learning Works
published

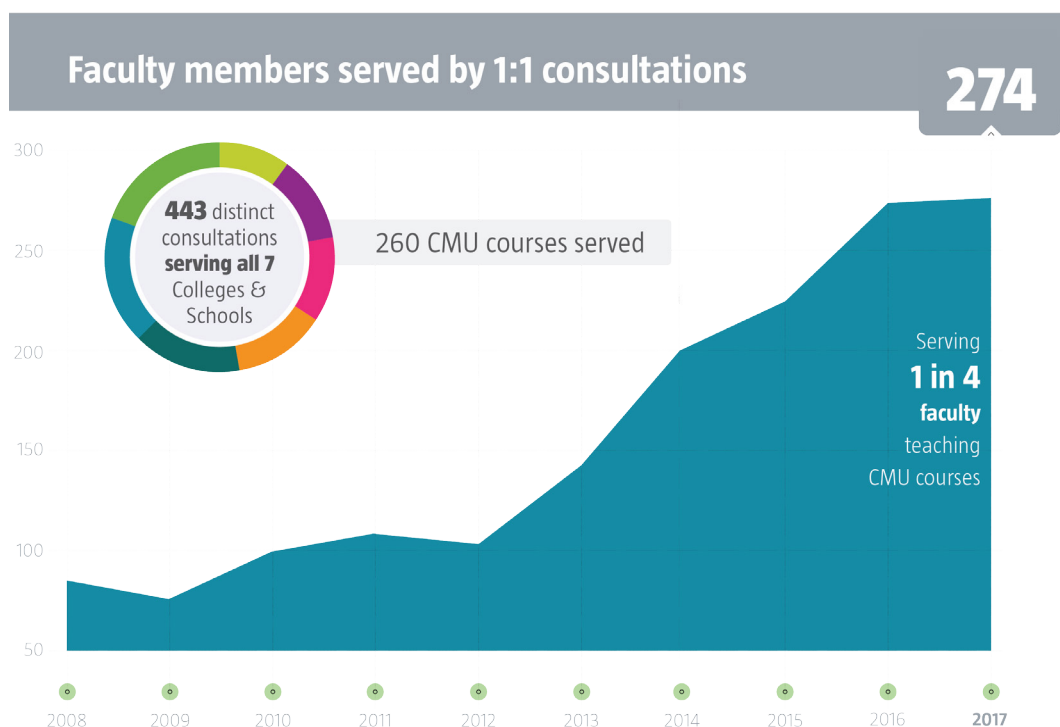


2010

Learning Principles
pedagogical framework
for Open Learning Initiative



2010



Consultations Are...

Strictly confidential | We do not disclose any information from our consultations. This includes the identities of those with whom we work, the information they share with us, and data we gather on their behalf via classroom observations and interactions with TAs and students.

Documented for faculty and graduate student purposes alone | We provide written feedback to the colleagues with whom we consult that

summarizes and documents the consultation process. We do not write letters of support for reappointment, promotion or tenure, but faculty can choose to use our documentation as they see fit.

Voluntary | We do not seek out faculty or graduate students for teaching consultations, but we are happy to meet with anyone who contacts us.

www.cmu.edu/teaching

Welcome
Marsha Lovett, PhD
New Director



2012

Eberly Center for
Teaching Excellence and
the Office of Technology
for Education merge,
integrating technology
and pedagogical support

Eberly Center
Teaching Excellence & Educational Innovation

2013

The Simon Initiative
announced!
Marsha Lovett named
Simon Co-coordinator;
Eberly Center fine tunes
support model to address
emerging need

The Simon Initiative

2013

Eberly Center initiates
first-ever conference for
CMU educators at the
Teaching & Learning
Summit.

**Teaching & Learning
Summit**

2016

Faculty Support

Faculty demand for Eberly Center services reached an all-time high in AY 2016-17.

The Eberly Center offers an array of evidence-based programs and consultation services to support the diverse teaching needs of all CMU faculty. Designed to flexibly and responsively “meet faculty wherever they are,” our menu of services offers various pathways for timely and ongoing support. For example, faculty may attend an Eberly workshop or event to learn about an instructional strategy or tool and then request a one-on-one consultation for help implementing changes in their teaching practice. At the same time, consultations reveal emerging patterns in faculty needs and interests, informing our design of targeted programs that disseminate relevant

research findings and bring together faculty to share their experiences and exchange ideas. We are actively innovating both the content and formats of our programming. For example, this year, we expanded our programs by hosting the inaugural CMU Teaching & Learning Summit. This half-day conference, attended by 225 CMU community members, was designed to foster dialogues on teaching across disciplines, showcase CMU educational research, and disseminate evidence-based, innovative teaching strategies employed by CMU faculty, postdocs, graduate students, and staff.

Eberly Center programs and services are designed to flexibly and responsively meet faculty wherever they are

1:1 Consultations

Faculty engage in a 1:1 consult for more tailored support.



Strategize on Teaching/
Course design

Explore/Use Educational Technology

Gather Students' Early Course Feedback

Observe Classroom Teaching

University-Wide Programs

Eberly events bring faculty together to explore a range of pedagogical and educational technology topics.



Incoming Faculty Orientation

Faculty Workshops

Special Interest Groups

Faculty Spotlight Series

Wimmer Faculty Fellowship Program

Customized Programs

Deans and Dept Heads seek out a variety of Eberly Services when adding, evaluating programs including educational technology considerations, learning space considerations, research-informed pedagogies, and data collection and analysis.



Curriculum reform/
program-level outcomes

Discipline-specific retreats/workshops

Highlights of AY 2016-17

Faculty demand for Eberly Center programs and services reached an all-time high. **Overall, 437 CMU faculty and staff members** took advantage of Eberly Center programs and services representing **more than 40% of faculty instructors** who taught CMU courses in AY 2016-17

We held the inaugural CMU **Teaching & Learning Summit**, a half-day conference.

Sixty-two CMU community members shared their teaching innovations and learning data.

225 participants represented all seven schools and colleges:

92 faculty

72 graduate students

4 postdocs

57 staff members

KEYNOTE
Dr. Daniel T. Willingham Cognitive Psychologist
Critical Thinking: Why Is It So Hard to Teach?
Translating research into practical strategies



foster dialogue across disciplines

showcase CMU educational research

disseminate innovative evidence-based teaching

Teaching & Learning Summit

Join colleagues from across campus for roundtable discussions, quick-fire interactive talks, poster sessions, networking opportunities, and more!

SAVE THE DATE
Friday, October 14, 2016, 1:00-5:00pm

Eberly Center
Teaching Excellence & Educational Innovation

Carnegie Mellon University

Delivering tailored support to CMU courses

We provided **443 distinct consultation services to 274 faculty members** (totalling more than 1088 client meetings), representing all CMU schools and colleges.

We helped **132 faculty and staff members leverage learning data** (a 70% increase over last year) to improve teaching and learning in 107 CMU courses and 22 academic programs.

We provided **Early Course Feedback services to 58 faculty members** to gather anonymous, consensus-checked, formative feedback from students in 63 courses.

We supported **129 faculty members in using Technology-Enhanced Learning** to address 156 distinct teaching and learning challenges.

Disseminating evidence-based teaching practices

259 faculty and staff members filled 351 seats at our university-wide and customized, unit-level programs.

61 faculty members or 66% of new hires attended **Incoming Faculty Orientation**, fostering an interdisciplinary community and culture around evidence-based teaching and learning.

We coordinated the second year of the **CMU Teaching Innovation Award**, recognizing five faculty/instructional teams for specific, innovative teaching strategies that enhanced student outcomes in individual courses.

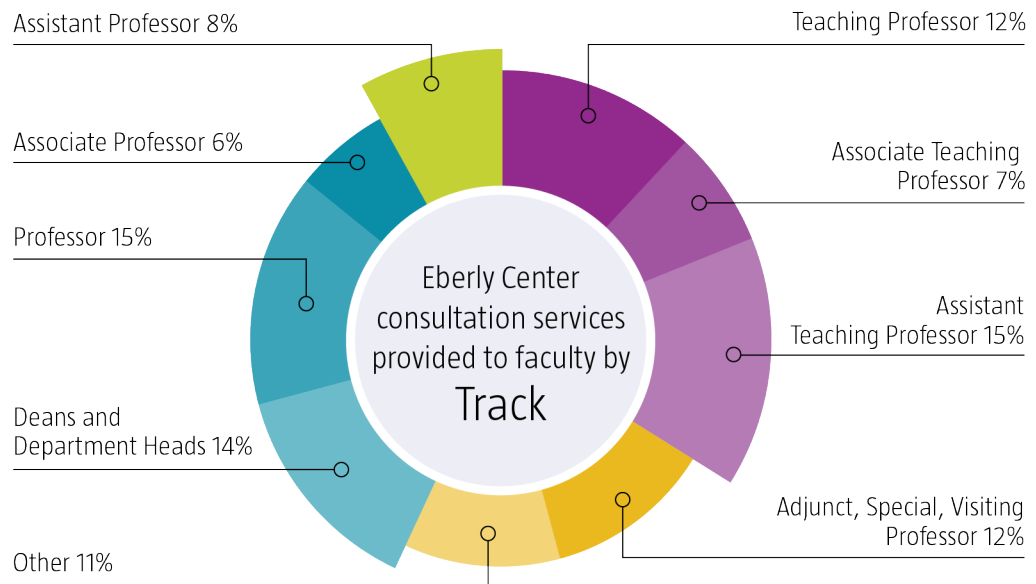
Responding to emerging needs and interests

Two of our university-wide programs addressed issues related to the work of the **Task Force on the CMU Experience**.

We hosted a seminar on **"Providing the 'Right' Level of Challenge"** that was attended by faculty and graduate student educators.

We launched a new Faculty Special Interest Group to help faculty implement evidence-based approaches for **"Creating Desirable Difficulties that Improve Student Learning."**

Our series, **Spotlight on Innovative CMU Faculty Teaching**, featured two faculty colleagues, disseminating local teaching innovations across campus and **fostering cross-disciplinary dialogues** on pedagogical lessons learned.



"I benefited substantially from the contributions and insight of [Eberly teaching consultants. They] provided excellent feedback on course design, offered helpful encouragement to a first-time teacher, and pointed me in the direction of countless teaching resources. Particularly helpful were handouts for course evaluation strategies and literature on engaging students in interactive classroom learning. I look forward to leveraging Eberly Center resources as I continue to refine this course, as well as other courses going forward."

— Associate Professor

University-Wide Programs

To support the teaching endeavors of CMU faculty, the Eberly Center offers a diverse set of programs each year. Each event is open to faculty of all disciplines and ranks. All events are highly interactive and seek to build a community and culture around teaching at CMU by:

- synthesizing and distilling relevant research findings on teaching and learning;
- disseminating teaching innovations;
- modeling and sharing practical, evidence-based teaching strategies and uses of educational technology;
- exploring ways of translating evidence-based practices to one's own teaching practice; and
- providing lively venues for faculty to discuss teaching and learning with colleagues across disciplines.

A grand total of 259 faculty filled 351 seats at our university-wide programs:

Teaching & Learning Summit

In October, 2017, we instituted the first annual CMU Teaching & Learning Summit, a half-day conference focused on teaching and learning. This highly interactive event gathered the CMU community to:

- foster dialogue, networking and

collaboration within and across disciplines;

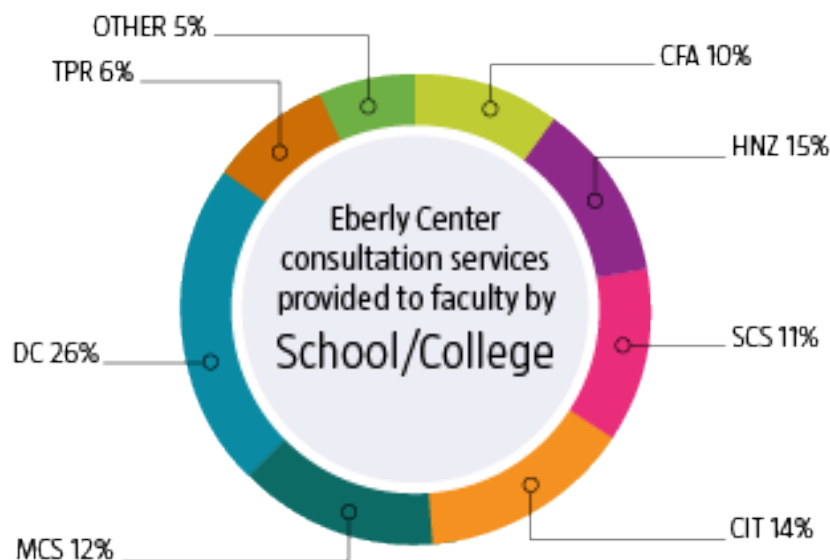
- showcase the educational research of CMU instructors and learning scientists; and
- disseminate transferable, evidence-based and innovative teaching strategies employed by CMU instructors.

Daniel Willingham, an acclaimed author and cognitive psychologist from the University of Virginia, provided the keynote: "Critical Thinking: Why is it so hard to teach? Translating research into practice". The event also included roundtable discussions on teaching and learning challenges as well as quick-fire talks and a poster session showcasing evidence-based and innovative teaching and technology-enhanced learning practices.

Summit participants (225 total) represented all seven schools and colleges, and included **92 faculty, 72 graduate students, 4 postdocs, and 57 staff members** who contribute to CMU's educational mission. Sixty-two of these participants contributed posters and/or presentations.

Teaching as Research Institute

To help promote a culture of data-informed teaching and course/program design



We provided 443 distinct consultation services to 274 faculty members representing approximately 1 in 4 faculty instructors who taught CMU courses.

at CMU, the Eberly Center hosted two Teaching as Research Institutes (three half-days each), in July 2016 and May 2017. Forty-three faculty members attended. The Institutes focused on examining the extant educational research on active learning strategies and the development of students' critical thinking and creativity/innovation skills. The program also introduced faculty to a toolkit of strategies on classroom research methods as well as Eberly Center services to support faculty in this work. Twenty-eight participants initiated collaborations with Eberly Center colleagues to design, implement, and disseminate studies of student learning outcomes in CMU courses and programs across disciplines.

Special Interest Groups (SIGs)

SIGs bring together small, multidisciplinary groups of faculty to build community and sustain dialogues around teaching by exploring topics in depth, beyond what is possible in a single, stand-alone seminar. Eberly colleagues design and facilitate SIGs, tailoring programs to meet the emerging needs of participants via seminar or roundtable formats. In seminar-style SIGs, faculty experience novel pedagogical strategies "hands-on" and then reflect upon and discuss their experiences from the perspectives of both students and instruc-

tors. Seminar style SIGs conclude via small group or 1-on-1 consultations in which faculty members discuss with an Eberly colleague how the focal strategies might be effectively transferred to their future teaching. In roundtable-style SIGs, faculty currently implementing particular teaching strategies meet periodically to discuss their experiences, share effective strategies, discuss feedback gathered from students via Early Course Feedback surveys or focus groups, and engage in collaborative problem solving to address ongoing challenges. In AY 2016-17, we facilitated a new seminar-style SIG: **Creating Desirable (but not excessive) Difficulties that Improve Student Learning**. Twelve faculty engaged in four 90-minute interactive sessions to explore how to apply educational research and evidence-based teaching strategies to their CMU courses.

Seminars

Faculty seminars are stand-alone, 90-minute interactive sessions, designed and facilitated by Eberly Center staff. We presented one seminar in AY 2016-17 titled: **Roundtable Discussion on Teaching: Providing the "Right" Level of Challenge**. Building upon the work of the CMU Task Force on the Student Experience, this session explored the following question: How do we maintain our commitment

"In the 15 years I've taught at CMU, your [Eberly Center] 3-part course was the first time I'd been formally taught how to do the job I was hired to do. So, thanks! [What I learned] will be very useful in the fall when I teach the class again." – Professor

“The seminars and special interest groups are a great way to meet other educators on campus, exchange ideas and share experiences and best practices. Presenting my course in last year’s seminar was a great opportunity to reflect on my teaching practice too!”

—Special Faculty

to educational rigor while promoting a culture that values both academic success and holistic well-being? This roundtable discussion provided a forum for dialogue on the current and future undergraduate experience at CMU, with a particular emphasis on students’ emotional, mental, and academic success. Relevant educational research was leveraged to inform discussions of various practical strategies.

Spotlight on Innovative Teaching

This ongoing series of 60-minute sessions, highlights an array of innovative, transferable teaching methods and novel uses of educational technology that CMU faculty are currently using to enhance student learning. This year, spotlight sessions focused on **Re-inventing Courses**, featuring presentations by two CMU faculty, Karen Stump (Chemistry) and Jimmy Williams (Engineering & Technology Innovation Management), who implemented technology-enhanced learning tools to support peer review of writing and teamwork, respectively. Informal roundtable discussions followed presentations.

Wimmer Faculty Fellows Program

The Wimmer Faculty Fellows program is designed for junior faculty members interested in enhancing their teaching through concentrated work designing or redesigning a course, innovating new materials, or exploring a new pedagogical approach. Eberly Center colleagues work individually with each Wimmer Faculty Fellow according to his/her particular needs. Each fellow receives a stipend, funded by a gift from the Wimmer Family Foundation, to acknowledge the work it takes to improve one’s effectiveness as an educator. The 2016-17 Wimmer Faculty Fellows were:

- Joshua Bard, Assistant Professor, Architecture, College of Fine Arts
- Sarah Christian, Assistant Teaching Professor, Civil & Environmental Engineering,

Carnegie Institute of Technology

- Stefan Gruber, Assistant Professor, Architecture, College of Fine Arts
- Maryam Saeedi, Assistant Professor, Economics, Tepper School of Business
- Alexa Woloshyn, Assistant Professor, Music, College of Fine Arts

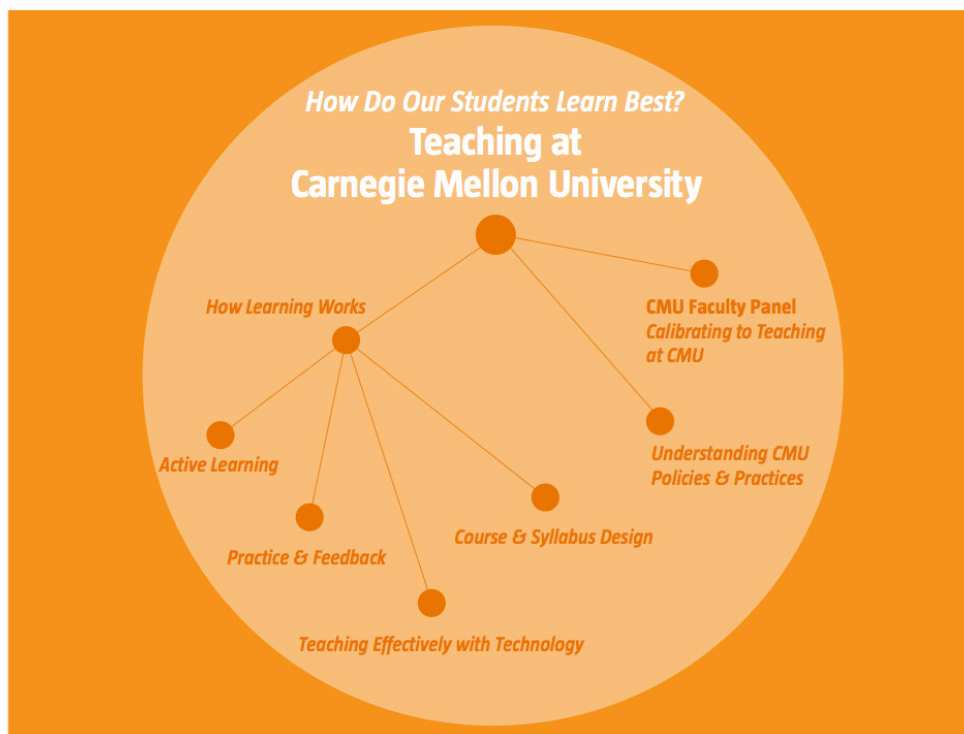
Incoming Faculty Orientation

For over 30 years, the Eberly Center has offered programming to support newly hired faculty regarding their teaching responsibilities. Incoming Faculty Orientation is designed to:

- help faculty calibrate their teaching to CMU students and standards
- uncover and challenge assumptions about teaching and learning
- disseminate practical, research-based strategies for teaching
- promote effective uses of technology
- facilitate dialogue across disciplines
- communicate Eberly Center’s approach, programs, and services.

This year, for the first time, we also collaborated with the Office of the Vice Provost for Faculty, to support faculty in teaching, research, and creative endeavors. To accomplish these objectives, we presented a 2.5-day program of interactive, research-based workshops on topics related to teaching and learning as well as securing research funding, understanding how the university works, and maintaining healthy work-life balance. The program also included a panel discussion with experienced faculty as well as case study discussions with Eberly colleagues and the Vice Provost for Education on CMU academic policies to give participants ample time to ask questions about their new academic community.

We invited all faculty members who are new to CMU-Pittsburgh (e.g., tenure-track, teaching-track, visiting, adjunct) to participate. Year after year, the



majority of incoming faculty members attend this optional orientation program, even though most are in the midst of transitioning to Pittsburgh and CMU. In 2016, 61 new faculty attended, representing 66% of new CMU-Pittsburgh faculty hires.

Customized Unit-Level Programs

The Eberly Center responds to requests from individual academic units based on their particular needs for faculty professional development on evidence-based teaching strategies. Eberly colleagues collaborate with CMU Deans and Department Heads to design and facilitate workshops, faculty meetings, and faculty retreats tailored to address discipline-specific needs. Last year, the Eberly Center provided the following customized programs:

- Dietrich College of Humanities & Social Sciences, Technology-Enhanced Learning Bootcamp
- Mellon College of Science and Biological Sciences, 5th Annual Biological Sciences Undergraduate Teaching Symposium
 - Course & Syllabus Design
 - Designing Effective Multiple Choice Questions
 - Designing and Grading Short-Answer and Essay Questions
 - Workshop: Aligning Learning Objectives and Assessments Within and Across Courses
- Academic Advisors, Helping Students (Re-)Frame Failure
- College of Engineering Junior Faculty Women's Group, Resources & Support for Teaching at CMU
- Mellon College of Science, EUREKA! First Year Seminar, Invited session
- How learning works: What does research suggest about how to maximize your learning in MCS courses?

Promoting Research on Teaching & Learning



“Improvement in post secondary education will require converting teaching from a solo sport to a community based research activity.”

– Herb Simon

Not only do CMU faculty seek Eberly Center support to engage in evidence-based teaching, we are seeing more faculty interested in conducting educational research themselves – in the context of their courses. This year, we supported **132 faculty and staff members in using learning outcome data** (a 70% increase compared to last year) to inform their instructional design and use of technology. These faculty members are taking a data-driven approach to improving education.

As in past years, we support our colleagues’ work in this area through one-on-one consultations, supporting the ProSEED/Simon Initiative Faculty Seed Grant program, and contributing to education-related grant work. In addition, this year we launched – and offered twice – a new 3-day faculty institute on Teaching as Research.

NEW! Faculty Institute on Teaching as Research

To help promote a culture of data-informed teaching and course/program design at CMU, the Eberly Center hosted two Teaching as Research Institutes. The first was held July 25-27, 2016, and the second May 16-18, 2017. Across both offerings, **43 faculty members attended**, learning a toolkit of strategies on classroom research methods and how the Eberly Center can support this work. Participants also read and collaboratively critiqued classroom-based research on active learning strategies (2016 cohort) and the development of students’ critical thinking and creativity/innovation skills (2017 cohort).

At the end of the program, faculty members were invited to work with an Eberly colleague to initiate a “teaching

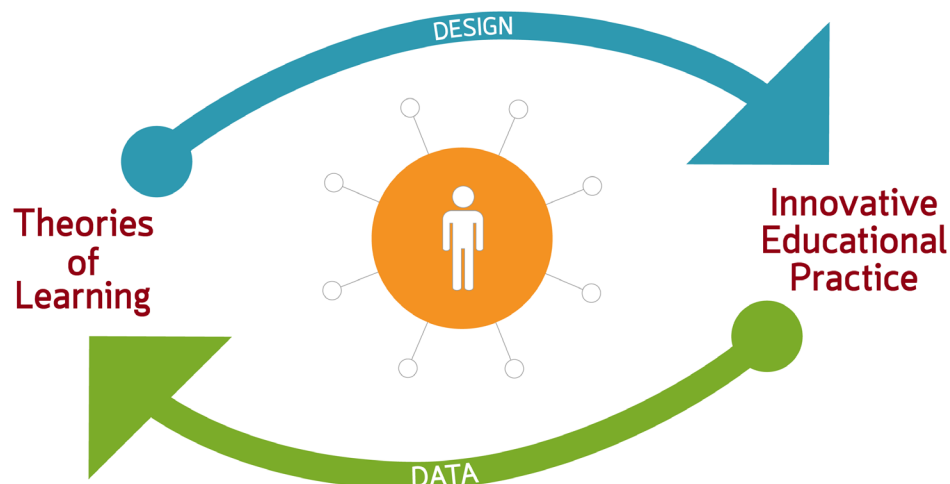
as research” project – to be conducted in one of their upcoming courses. At the time of this writing, **28 of the 43 faculty participants** have begun work on a classroom-based research project, and some of these projects are already in the stage of getting written up for dissemination across CMU and beyond.

Consultations on the Scholarship of Teaching and Learning

Regardless of participation in our “Teaching as Research” institute, we will work with faculty colleagues on discipline-based educational research – from designing a study and planning instructional interventions, to creating valid and reliable measures of learning, to identifying relevant journals and conferences for disseminating the work. Often these consultations stem from a faculty member’s initial interest in trying out a new pedagogy or educational technology, and that grows into a quest to study and improve the intervention’s effectiveness.

Examples include:

- Using log data from The Gallery tool to track students’ developing skills for design critique with Daragh Byrne, Assistant Teaching Professor of Architecture.
- Comparing inquiry-based lab activities to traditional (cookbook-like) instructions in a materials science laboratory course with Sarah Christian, Assistant Teaching Professor of Civil & Environmental Engineering.
- Investigating the impact of a simulation-based game environment (Minecraft) on students’ visualization skills and conceptual learning with Reeja Jayan, Assistant Professor of Mechanical Engineering.



- Comparing several approaches to active learning, such as how much one should discuss right vs. wrong answers, in a Masters-level information systems course with Mike McCarthy, Associate Teaching Professor of Information Science, and Joseph Mertz, Teaching Professor of Information Systems & Heinz.

ProSEED Simon Initiative Seed Grants

The ProSEED program was launched in 2014 to “play a catalytic role in supporting promising, creative ideas in education and research.” The Eberly Center continues to support The Simon Initiative Seed Grants within the ProSEED program by:

- Answering questions about effective learning outcomes assessment when faculty are writing their proposals
- Serving on the proposal review panel
- Providing support and consultation to awardees on instruction, assessment, and educational technology design.

Education-Related Grant Proposals and Grant-Funded Work

Eberly Center personnel are regularly invited by faculty colleagues to contribute to education-related grants. Depending on the project’s needs, we contribute expertise in course and curriculum design, assessment planning, and/or educational technology development.

This year we consulted or collaborated on **eight new grant proposals** with an educational innovation or learning research component. These included NSF CAREER proposals and research proposals to various government agencies and philanthropic foundations.

We continued our participation in the following funded projects:

- Building a Learning Analytics System to Improve Student Learning and Promote Teaching Across Multiple Disciplines. (09/01/2012 - 08/31/2016). National Science Foundation, \$496,315.
- Cultivating Digital Scholarship and Technology-Enhanced Learning in the Humanities. (09/01/2014-08/31/2019). Andrew W. Mellon Foundation, \$2 million.
- I-Corps Site at Carnegie Mellon University: A Model Promoting University Innovation, Entrepreneurship, and Regional Growth. (05/01/2014 - 04/30/2017). National Science Foundation, \$299,110.
- Lowering Barriers to the Use of Evidence Based Educational Innovations. (01/01/2016-12/31/2016). Arthur Vining Davis Foundations, \$225,000.
- Understanding and Overcoming Institutional Roadblocks to the Adoption and Use of Technology-Enhanced Learning Resources in Higher Education. (05/01/2015-10/31/2016). Carnegie Corporation, \$1 million.

Graduate Student & Postdoc Support

We offer a wide range of services to graduate students and postdocs, to support them as teaching assistants or instructors during their time at Carnegie Mellon and as future faculty members at other institutions. From a first-time TA to an experienced instructor of record, our services accommodate graduate students' and postdocs' diverse needs, goals, and available time. And regardless of current teaching duties, the common goal across all of our graduate student services is to disseminate evidence-based teaching strategies in ways that are accessible and actionable. In addition to providing these services directly to graduate students and postdocs, we participate in university- and unit-level orientations and professional development series, and we support graduate program coordinators and individual faculty members as they train and support their graduate students and postdocs to be teaching assistants or instructors of record.

Highlights of AY 2016-17

Serving the diverse CMU community:

Across all of our programs and services, we served more than 586 unique graduate students and postdocs from all seven schools and colleges and 62 academic programs (an increase of 131 people and 20 programs compared to last year).

Disseminating evidence-based teaching practices:

307 graduate students and postdocs filled 1005 seats at our 25 university-wide programs, and 443 graduate students attended our 26 customized, unit-level TA training events.

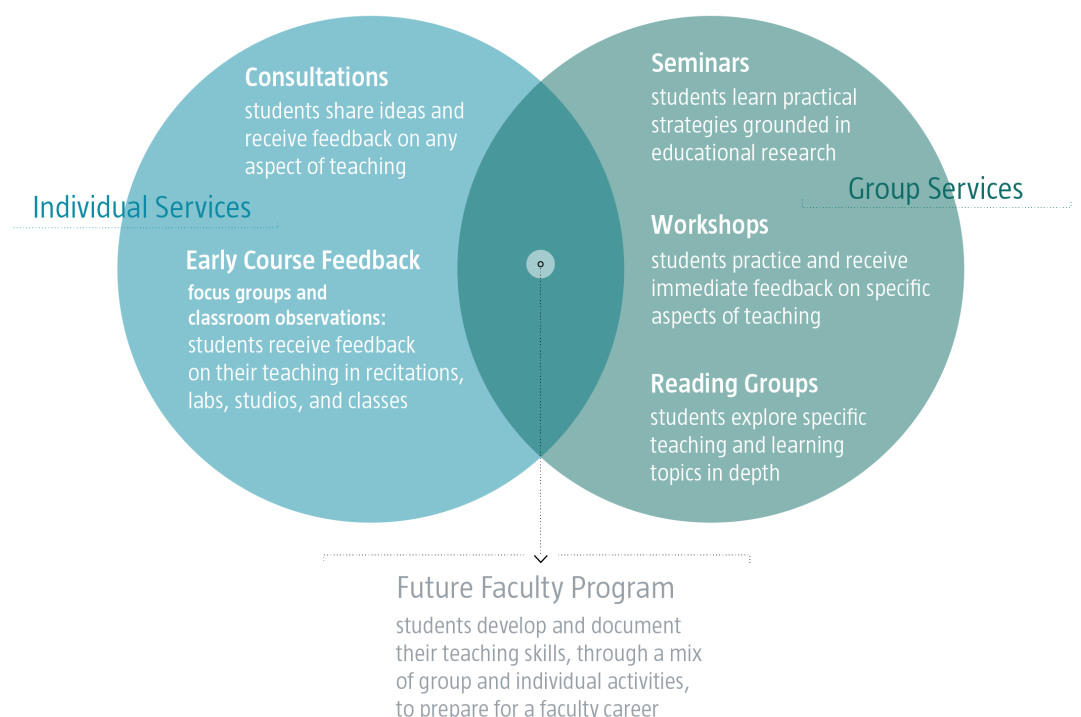
Supporting individual CMU graduate students and postdocs:

We provided 266 individual consultations to 145 unique graduate students and postdocs.

Preparing graduate students and postdocs to teach as faculty:

The number of

Graduate Student Programs



graduate students and postdocs participating in our Future Faculty Program continued to grow this year. Sixty-seven new participants enrolled in the program and a grand total of 160 individuals participated (an increase of 32%). This year, 20 participants finished the program requirements.

Responding to emerging needs and interests: We developed 13 new programs (5 customized TA training events, 5 university-wide seminars, the CMU Teaching & Learning Summit, and 2 graduate student reading groups) to respond to new CMU policies and initiatives, new trends in TA responsibilities, and emerging needs of graduate students, postdocs, and academic units at CMU.

Graduate Student Consultations

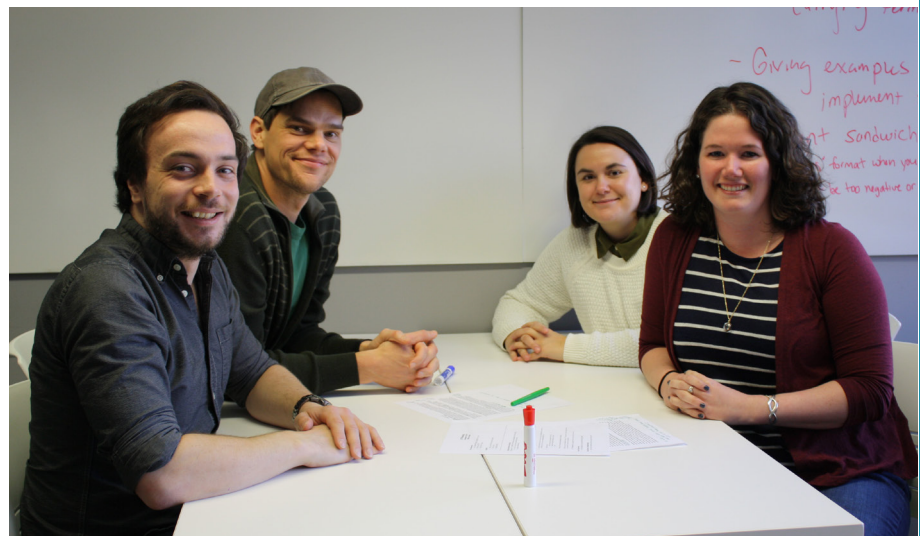
Graduate students can work one-on-one with an Eberly consultant to ask questions, discuss ideas, and get feedback on teaching strategies, activities, and materials. Many of these consultations involve multiple interactions as well as multiple methods of collecting data on student learning, such as classroom observations of teaching and student feedback surveys and focus groups. For example, a graduate student may meet one-on-one with an Eberly consultant prior to beginning a TA appointment to discuss strategies for facilitating student participation; then, during the semester of the TA appointment, the graduate student may request a classroom observation from an Eberly consultant to gain additional feedback. Because so many graduate students are enrolled in multiyear programs, we often have the opportunity to work with graduate students over several semesters and play a significant role in their development as educators. We provided 263 consultations to 156 unique graduate students and postdocs. The vast majority of graduate students were enrolled in doctoral programs, but masters degree students were also served.

Graduate Teaching Fellows

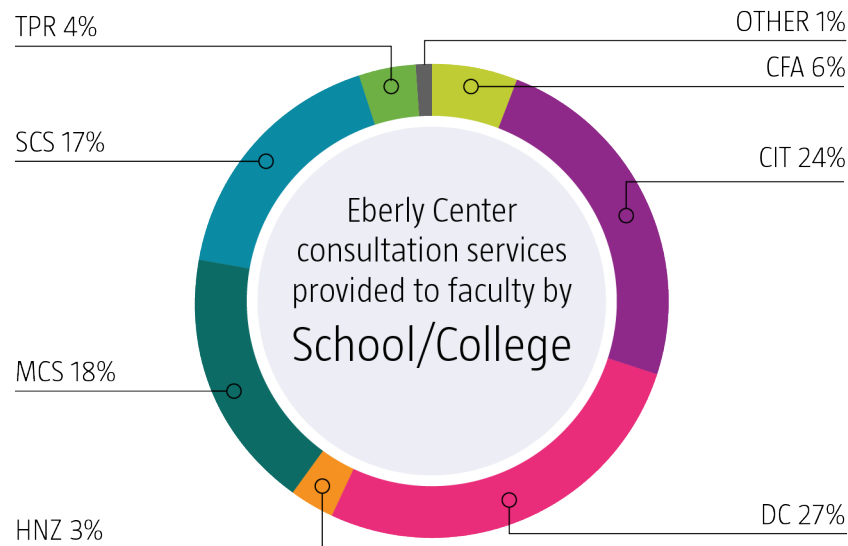
Graduate Teaching Fellows (GTFs) are a select group of experienced CMU graduate student instructors from a variety of disciplines, who are recognized for their teaching effectiveness and commitment to student learning. Full-time Eberly Center staff provide GTFs with advanced training in evidence-based teaching strategies and teaching consultation techniques through regular “teaching circle” meetings. In AY 2016-17, the Eberly Center worked with seven GTFs:

- Olaitan Awomolo, Architecture
- David Gerritsen, Human Computer Interactions
- Maggie Goss, English
- Jessica Harrell, English
- Aidan Kestigian, Philosophy
- Darya Melicher, Software Engineering
- Clive Newstead, Mathematical Sciences

We provided
263 individual consultations
to 156 unique
graduate
students and
postdocs.



Besides receiving the most in-depth professional development we provide to CMU graduate students, Graduate Teaching Fellows (GTFs) in turn contribute to the Eberly Center’s activities to support graduate students. Last year, GTFs provided 71 of the one-on-one, confidential consultation services (i.e., classroom observations, microteaching video consultations, or teaching philosophy consultations) to 56 unique graduate students and postdocs.



University-Wide Programs

This year, 256 unique graduate students and postdocs, representing all 7 CMU schools/colleges, attended our university-wide seminars and workshops, filling a grand total of 664 seats. Our university-wide programs integrate educational research and theory with practical pedagogical strategies and give graduate students from all schools and colleges the opportunity to interact with and learn from each other. The popularity of our seminars and workshops makes them a highly effective “gateway” service in that many students participate in several seminars and then pursue our small group activities and one-on-one services to go into greater depth with some aspect of teaching and learning.

Teaching & Learning Summit

In October, 2017, we instituted the first annual CMU Teaching & Learning Summit, a half-day conference focused on teaching and learning. This highly interactive event gathers the CMU community to:

- foster dialogue, networking and collaboration within and across disciplines;
- showcase the educational research of CMU instructors and learning scientists; and
- disseminate transferable, evidence-based and innovative teaching strategies employed by CMU instructors.

Daniel Willingham, a cognitive psychologist from the University of Virginia and acclaimed author provided the keynote address: “Critical Thinking: Why is it so hard to teach? Translating research into practice”. The event also included roundtable discussions on teaching and learning challenges as well as quick-fire talks and a poster session showcasing evidence-based and innovative teaching and technology-enhanced learning practices.

Participants (225 total) represented all seven schools and colleges, and included 72 graduate students, 4 postdocs, 92 faculty, and 57 staff members who contribute to CMU’s educational mission. Sixty-two of these participants contributed posters and/or presentations.

Seminars

Our 90-minute seminars cover a wide variety of topics related to teaching, learning, and professional development as an educator **We presented 17 seminars on 16 topics**, including three new topics to respond to the expanding teaching responsibilities and practices of graduate student TAs and instructors. To help graduate students learn the fundamentals of teaching and learning, we offer 8-10 core seminars at least once each year (*core seminars). Note that our Future Faculty Program includes these core seminars as one of its requirements.

Fall 2016

- New! Roundtable Discussion on Teaching: Providing the “Right” Level of Challenge
- Leveraging Diversity and Promoting Equity in Your Classroom*
- Guiding Attention and Memory to Build Knowledge*
- Designing Effective Group Work
- Handling Problematic Student Behavior
- Providing Helpful Feedback*
- Engaging Students in Active Learning*

Spring 2017

- New! Facilitating Difficult Dialogues*
- New! Inquiry-based learning
- New! Spotlight on Innovative CMU Faculty Teaching: Reinventing Courses
- Course and Syllabus Design*
- Conducting Productive and Engaging Discussions*
- Motivating and Engaging Students*

Summer 2017

- New! Teaching Inclusively: Fostering a Positive Climate for Learning*
- Course & Syllabus Design*
- Crafting a Teaching Philosophy Statement
- Planning and Delivering Effective Lectures

Workshops

Our microteaching workshops, usually 2.5 hours long, give participants the opportunity to practice and receive immediate feedback on specific aspects of teaching. This year, **40 unique graduate students participated in microteaching workshops**. During these workshops, students teach a five-minute lesson and receive immediate feedback from colleagues and an Eberly Center teaching consultant or Graduate Teaching Fellow.

Reading Groups

These seminar-style special interest groups (SIGs) for graduate students and postdocs are designed to allow participants the opportunity to read primary and secondary

research from the learning sciences and to consider how they might apply that research to their teaching practices.

In Fall 2016, the SIG met 4 times to discuss: How Can I Help My Students Overcome the Difficulties that Accompany the Learning Process? Readings included excerpts from Daniel Willingham’s popular education book, *Why Don’t Kids Like School?* The reading group culminated with a dialogue with Daniel Willingham, the Keynote Speaker for the 2017 CMU Teaching & Learning Summit.

During Summer 2017 the SIG met 3 times to discuss metacognition and student development. Readings included excerpts from Sandra McGuire’s book: *Teach Students How to Learn*.

Customized Unit-Level Programs

To complement our university-wide programs, we develop and deliver hands-on seminars that address specific, unit-level needs of graduate student instructors. These requests come from a variety of sources: graduate program coordinators, faculty members in a supervisory role (i.e., instructors of record, course coordinators, or TA trainers), and graduate students who coordinate professional development activities or teaching training for fellow students in their departments. **443 unique graduate students participated in 26 customized unit-level sessions**, 5 of which were new topics. This number of instructors served doubled compared to the previous year.

Academic Units Served:

Art

- Strategies for Working 1-on-1 and Providing Helpful Feedback, Fall 2016
- Teaching Across Cultures and Strategies for Facilitating Classroom Discussions, Fall 2016

Chemistry

- Helping Students Develop Mastery and Critical Thinking, Fall 2016

Electrical and Computer Engineering

- Working Well 1-on-1 in Office Hours, Fall 2016
- Facilitating Active Learning in Recitations, Spring 2017

English

- Facilitating Effective Discussions, Fall 2016

Chemical Engineering

- How to be an Effective TA: Effective, Efficient Strategies for grading, providing helpful feedback, and office hours, Fall 2016

Civil and Environmental Engineering

- Working Well 1-on-1, Fall 2016
- Problem Solving in Small Groups, Fall 2016
- Assessing Student Learning and Providing Helpful Feedback, Fall 2016

Computer Science

- Manipulating Your Students' Brains for Good (Not Evil) AKA Guiding Attention and Memory, Fall 2016
- Manipulating Your Students' Brains for Good (Not Evil) AKA Guiding Attention and Memory, Spring 2017

Dietrich College of Humanities & Social Sciences

- Technology-Enhanced Learning Bootcamp, Summer 2016
- Designing for online/blended learning
- Active Learning
- Teaching and Learning with Multimedia
- Using TEL to Extend the Classroom

Information Networking Institute

- Grading, Feedback, and Office Hours, Fall 2016

Mellon College of Science

- Active Learning, Fall 2016

Music

- Grading and Feedback, Fall 2016

Psychology

- Effective and Efficient Strategies for Grading and Providing Helpful Feedback in Psychology Courses, Fall 2016

Philosophy

- How to be an Effective TA: How Learning Works, Grading & Feedback (Sans Rubrics), Working 1-on-1, Fall 2016
- Crafting a Teaching Statement, Spring 2017

Social and Decision Sciences

- Grading, Feedback, and Office Hours, Fall 2016

Statistics

- Teaching Effectively 1-on-1, Fall 2016
- Grading and Feedback, Fall 2016

Tepper School of Business

- Delivering Effective Lectures, Spring 2017

We also consult one-on-one with graduate program coordinators and faculty members to help them develop training sessions, TA feedback forms, and other materials for their TAs and graduate student instructors.

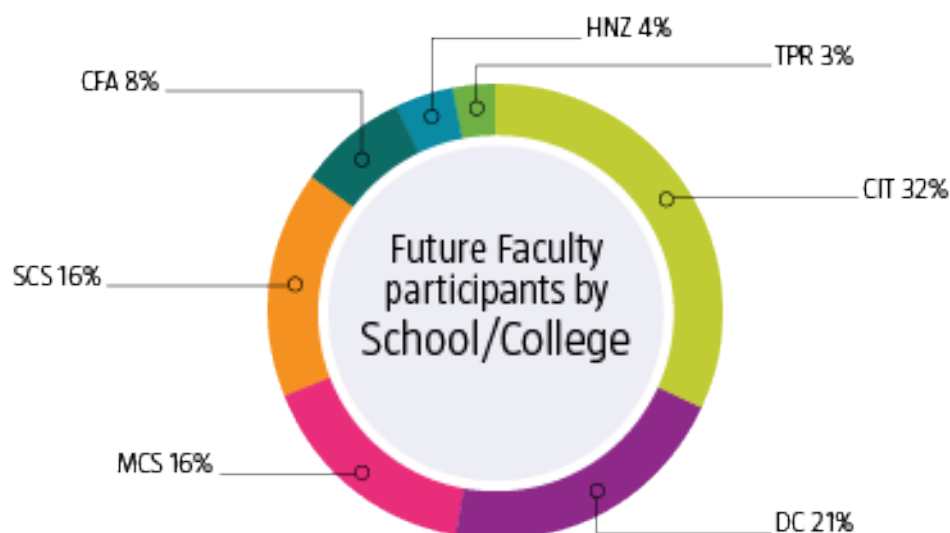
Future Faculty Program

Our Future Faculty Program helps graduate students and postdocs develop and document their teaching skills in preparation for a faculty career. Participants who complete the program praise it as giving them a competitive advantage in securing faculty positions. The program's requirements are:

- attending at least eight seminars, at least four of which must be designated as core topics
- participating in two teaching feedback consultations (e.g., classroom observation, early course feedback focus group) to receive formative feedback on teaching
- designing a course and syllabus that align with the participant's discipline and teaching goals
- creating a teaching philosophy statement

Upon completing these four requirements, participants receive a transcript that lists all of their Eberly activities.

This year the program attracted **67 new graduate students and postdocs**. Of the 212 graduate students enrolled in the Future Faculty Program during AY 2016-17, **20 students completed the program**.



Invited Orientations

Each August, we participate in both university- and department-level orientations for new graduate students. These orientations are a highly effective means of outreach and generate significant follow-up requests for one-on-one consultations as well as registrations for our seminars and workshops. At the university level, we presented a 50-minute session called "PhD Students and Teaching" that was attended by 127 newly admitted doctoral students. This provided both an overview of our services and evidence-based strategies appropriate for first-time TAs and instructors. We also participated in the Graduate Student Resource Fair during the university-wide orientation for new graduate students that typically draws several hundred doctoral master's degree students.

We also presented an overview of our graduate student services to 10 departments, attended by more than 228 new graduate students:

- Architecture
- Biomedical Engineering
- Computer Science
- Design
- Human-Computer Interaction Institute
- Institute of Software Research (SCS)
- Mechanical Engineering
- Modern Languages
- Psychology
- Robotics

Support for Undergraduate Teaching Assistants

Some departments rely heavily on undergraduate TAs. This year we presented 4 customized unit-level sessions, all in the Computer Science Department. Approximately 100 unique undergraduate TAs participated in these sessions.

Providing coordinated, thorough, and effective training programs for undergraduate TAs presents significant logistical challenges, both at CMU and other institutions. The Eberly Center is addressing this challenge in part by developing interactive high-quality online TA training. This year, we pilot-tested three online modules to train TAs in evidence-based practices for grading and giving feedback on student work (tailored to undergraduate and graduate TAs working in the Computer Science Department). To evaluate the effectiveness of these modules, we created direct assessments of conceptual and skills-based learning. In AY17-18, we will leverage the pilot test data to refine and re-deploy the modules for additional testing with computer science and/or science and engineering TAs in online and hybrid TA training formats. Pending results of these pilot studies, we hope to pursue broader adoption and use of these customizable modules in both quantitative and qualitative fields at CMU.

Program-Level Support

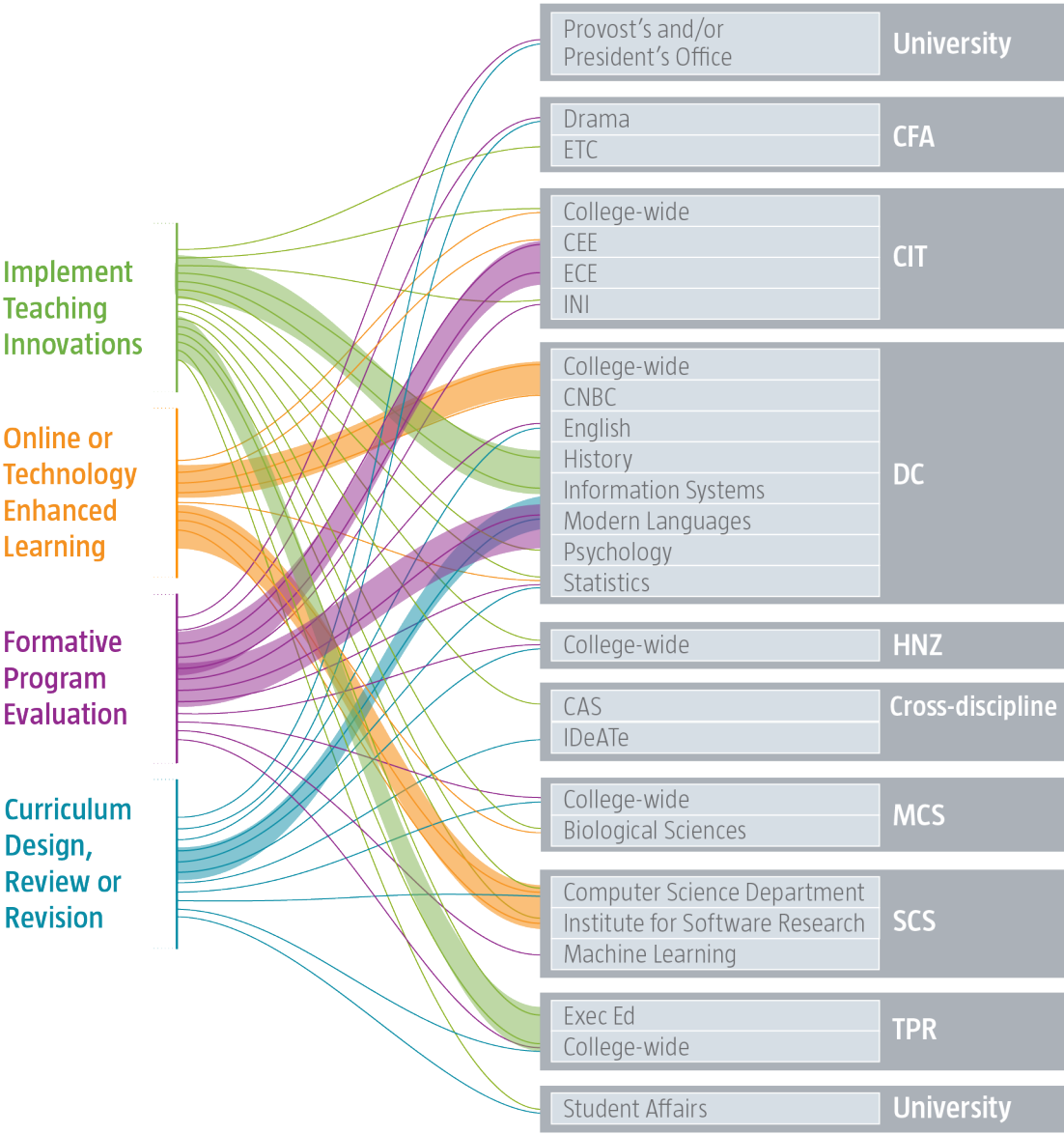
The Eberly Center provides customized consultation services to departments, schools, colleges and administrative units to support academic degree programs. For instance, Eberly colleagues help Deans, Department Heads, and groups of faculty to plan and implement program-wide educational activities, including:

- deliberate integration of emerging educational technologies
- iterative review and revision of programs and curricula
- design and preparation for teaching in online or blended modes

- collection of student learning data to inform formative program evaluation.

In academic year 2016-17, we provided 58 discipline-specific, program-level consultation services to 25 unique departments and academic programs, representing all seven CMU Schools and Colleges, as well as the Provost's and President's Offices. Program-level consultations often involve intensive work, leveraging multiple Eberly services.

We provided **58 discipline-specific, program-level services** to 25 unique departments, representing all seven schools and colleges.



Examples of Our Work at the Program Level

Heinz College

Although core competencies such as communication, critical thinking, and leadership are difficult to assess, they are key program outcomes, especially for students at the Heinz College. Program heads from Heinz reached out to the Eberly Center to tackle this important challenge, and we began a collaborative project to assess each of these outcomes on a rolling schedule, with the goal of providing feedback for program enhancement. For each competency, our process started by identifying core courses from the beginning and end of the program where relevant student work (e.g., course exams, project work) could serve as direct measures of students' growth in these areas. Eberly Center support for assessing these program outcomes has come into play at multiple stages:

- Developing common rubrics to systematically measure student performance across courses and assignments
- Training raters to apply these rubrics consistently and helping them calibrate on pre-set examples of student work
- Computing inter-rater reliability statistics and analyzing data for across-program trends
- Presenting results to the Heinz program heads and key faculty for their interpretation and use in course re-design and curriculum refinement.

Mellon College of Science

The Mellon College of Science (MCS) recently implemented a new Core Education curriculum that takes an innovative, holistic approach towards fostering student development in four dimensions: scholar, professional, citizen, and person. In AY 2016-17, the Eberly Center played an integral role in this work by providing consultations, committee service, and customized staff support for:

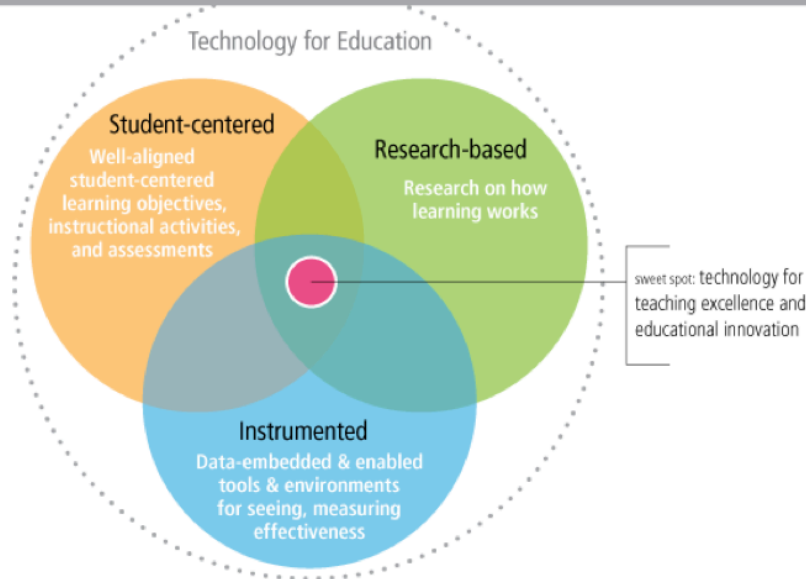
- refining the design of the first-year seminar course 38-101 EUREKA!: Discovery and Its Impact based on student data from the prior year's first run of this course
- conducting a randomized, controlled trial of online modules that teach students to leverage the power of teams and effectively resolve conflicts that naturally arise in teams
- fostering (and measuring) students' metacognitive skills (i.e., learning how to learn) through various interventions across the introductory science and math courses
- implementing a curriculum-level assessment plan, including metrics of student learning to iteratively inform course- and program-level improvements.

"The team at the Eberly Center has been a key partner in developing [our new online] program. The Eberly Center teaching consultants and instructional technology experts have helped us throughout the entire process — from program design and conception to technology selection and application, all the way to coaching individual faculty members developing courses for the online hybrid format. They have been a great partner to work with throughout the process, and their guidance and expertise has had a significant positive impact on our program."

— Program Director

Technology for Teaching, Learning, and Educational Innovation

When Eberly Center looks to the potential of technology for education, we look to these 3 dimensions or enablers:



49% of our consultations* helped faculty teach more effectively with educational technology.

**Does not include our dedicated help desk support for faculty and students using Blackboard or Canvas (course management systems).*

The Eberly Center *brings together key strengths in pedagogy and technology* to fortify and invigorate teaching excellence and educational innovation at CMU. With the ever-changing landscape of educational technology, this union is key to serving the immediate needs and growing aspirations of our teaching community. We continue to fine-tune and grow our portfolio of technology-enhanced learning services and tools.

Highlights of AY 2016-17

Transitioning to a new Learning Management System, Canvas

One of our biggest efforts this year was a year-long pilot study to explore the potential transition to a new learning management system. As a result, the university decided to transition from Blackboard to Canvas. The Eberly Center is central to providing this service to our teaching and learning community. To support the transition, we worked to put in place system integration; and beefed up our outreach and support. This work included:

- **Creation of new system processes** for automating Canvas course creations and student enrollments.
- **Outreach communications** where we presented at faculty senate and at **31 departmental meetings**.
- **How-to support offerings** expanded to help make the change as smooth as possible for faculty, including:
- **Canvas Clinics** to provide scheduling flexibility for faculty to drop in for support during regularly held open office hours.
- **Small group trainings** where we invited departments and other groups to request that we come to their location to help their faculty get set up with Canvas.
- **One-on-one Canvas how-to consultations** where we met with an individual faculty member to address their specific course context and needs.

Even with this additional effort to manage the transition from Canvas to Blackboard, our team continued to provide support to faculty and graduate students looking to incorporate technology-enhanced learning.

We supported **129 faculty** and staff members in their selection and use of technology-enhanced learning to address **156 distinct teaching and learning challenges** in CMU courses and academic programs.

For faculty looking to incorporate technology-enhanced learning (TEL)

Our 1:1 faculty and program-level consultations in 2016-17 included...

- Development of new OLI online modules
- Development of Canvas courses
- Autolab course support
- Best practices for creating and using instructional videos
- Online self and peer assessments
- Plagiarism-detection tools and secure testing tools
- Distance teaching using synchronous distance communication tools and course-capture technologies
- Annotation tools for in-class and online lectures
- Clickers for use in lectures to spur discussion and comprehension checks
- E-portfolio, blogs, and tools for reflective practice

Development of online course materials and tools:

- Center for Causal Discovery
- Chinese Learning Game
- CollabU
- Computing for Non-Majors
- Dextrin Futures
- Diagrammar
- Discrete Math Primer
- E-Learning Design Principles
- Evidence-based Management
- Prose Style
- Robotics
- Statistics
- Visual Design
- Eberly-initiated OLI modules to support faculty and graduate student programs:
 - Writing Effective Learning Objectives
 - TA Training/Grading

Core Applications We Provide

The Eberly Center licenses and/or centrally supports several core educational technologies including:

- *Canvas Learning Management System:* we ran a 3-semester formal pilot where Canvas was in use with live CMU courses:
 - Summer 2016: 7 course sites, 7 instructors, 172 student enrollments
 - Fall 2016: 36 active course sites (2 Qatar), 37 instructors, 2455 student enrollments
 - Spring 2017: 59 courses, 68 instructors, 2277 student enrollments
- *Blackboard:* While piloting and evaluating Canvas, we continued to support the community with using Blackboard, the university's primary learning management system during this time.
- *Open Learning Initiative,* the university's online course platform, supporting 99 instructors in development and use of OLI tools and courses.
- *Clickers,* the university's classroom response system.
- *Turnitin,* a plagiarism and peer evaluation tool.
- *Autolab,* a new central service to support faculty use of the tool at CMU.
- *LTI connectors* to a variety of educational technology tools including: CMU's *Open Learning Initiative* courses, *Piazza*, *WebAssign*, *Panopto*, and more.

TEL programs we facilitated

- *Dietrich College Summer TEL Bootcamp-* We designed and delivered a series of technology-enhanced learning workshops to 30 Ph.D. students and a few faculty members in May 2016.
- *LearnLab Summer School - OLI track*
- *Pittsburgh Council on Higher Education (PCHE) - Simon Summer Institute*
- *Teaching Effectively with Technology:* An Eberly Center seminar for CMU Graduate Students

We supported **129** faculty and staff members in their selection and use of Technology-Enhanced Learning to address **156** distinct teaching and learning challenges in CMU courses and academic programs.

Design of Learning Spaces

Today, we know a lot about how learning works and how teaching can be most effective. This has changed the educational paradigm to an active model: *learning is doing, interacting, constructing*.

Our teaching and learning spaces need to incorporate this new paradigm along with the latest learning science research.

The Eberly Center brings research-backed principles and technology-enhanced learning strategies to make classrooms function more effectively for teaching and learning.

Instrumenting the learning process enables data-based improvement. When data are collected and analyzed on the teaching and learning process, we gain efficiencies (e.g., teachers can target their time redesigning a course, students at risk can be identified before problems get serious, and administrators can learn about actual patterns of use of various instructional resources to make better allocations). Physical spaces, like online environments, can be instrumented to collect meaningful data.

Integrating technology to increase learning opportunities and decrease cognitive load. Classroom technology comes in many forms. It can augment and transform learning when it offers new opportunities for active engagement. But to achieve this potential, the cognitive load (or even distraction) from using a new tool must be minimized – through effective design and with attention to helping teachers and students become proficient in using the

technology. Technology-enhanced learning solutions address these issues when they are focused on student outcomes rather than the technology *per se*.

In AY2016-17, Eberly engaged in several key projects related to the design and evaluation of learning spaces including:

- New Tepper Building: designed several teaching and learning spaces, including the Teaching & Learning Laboratory and the Innovation Studio, to open in 2018
- Baseline data collection: quantitatively assessed almost 100 Registrar-controlled classrooms using industry-developed criteria, and conducted in vivo observations for a sample of eight of these classrooms
- Indoor public spaces: identified approximately a dozen indoor spaces (“nooks”) near high-traffic classrooms, and designed enhancements so these nooks could serve as informal learning and collaboration spaces.

In the new Tepper Building, the Eberly Center will be home to the Teaching & Learning Laboratory. This space will be instrumented to facilitate rich data collection on student-student, student-teacher, and student-material interactions. Faculty from all CMU programs will use this space to pilot-test new teaching and learning formats, to collect data on student learning in new formats, and/or to conduct learning science research within real course contexts.

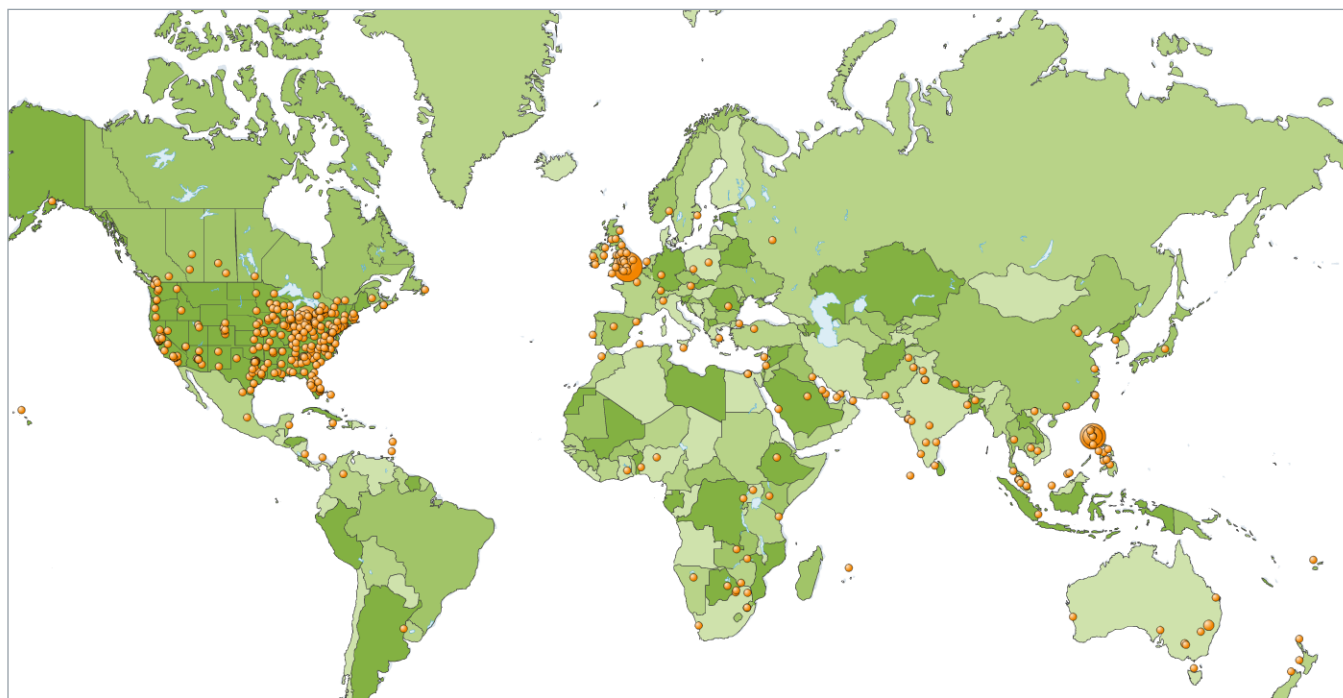
Our goal is to use technology deliberately to make learning more efficient and effective and ultimately to be a transformative power.



This public space in Wean Hall is one of the “nooks” to be enhanced with additional table surfaces, new power outlets, better lighting, etc. so that students and others can better use this space for collaboration and community. Key collaborators: Task Force on the CMU Experience (Campus Infrastructure working group, co-chaired by Marsha Lovett), Provost’s Office, and Campus Design & Facility Development.

Eberly Center Teaching Website Usage

25



	AY13-14	AY14-15	AY15-16	AY16-17
Pageviews	2,682,022	3,135,435	3,433,032	3,376,775
Visitors	1,386,828	1,696,208	1,816,940	1,829,374
Visits/Day	4,541	5,564	5,967	6,065

Eberly Center's teaching website located at www.cmu.edu/teaching is designed to guide faculty through the processes of creating and implementing courses, solving teaching problems, and assessing student learning. Indeed, our website allows us to support a far broader group of faculty, postdocs, and graduate students than we could through direct interaction, including CMU faculty at overseas campuses and programs.

Top 3 Most Viewed Areas of the Site

64% Assessment
27% Design & Teach a Course
9% Learning & Teaching Principles
Percentages are proportion of all page views.

We leverage the teaching website to rapidly respond to emerging faculty and graduate student needs by providing targeted, practical web resources and support.

For example, when we received a large volume of faculty inquiries regarding flipped classroom pedagogies, as part of our response, we created a web resource on the topic [www.cmu.edu/teaching/technology/flippingtheclass], featuring practices and lessons learned by CMU faculty.

We believe that maintaining a well designed, informative, user-friendly website is critical to our mission to support faculty colleagues and promote high quality teaching.

"Thank you for making your Eberly website available to the public – so often these pedagogical goldmines are password-protected. Your material represents a resource we could never compile in a small school like ours."

– sent to us from an international educator

Service to the Carnegie Mellon Community

To contribute to the CMU community and educational mission, Eberly Center staff serve on university committees, mentor CMU students, and teach CMU graduate and undergraduate courses. Our service during AY 2015-2016 is listed below.

University Committee Service

Lovett

- Simon Initiative, Co-Coordinator
- ProSEED/Simon Initiative Grant Review Panel, Member
- PIER Steering Committee, Member
- University Education Council, Member
- Ryan Award Committee, Co-Chair
- Doherty Award Committee, Co-Chair
- Computing @ Carnegie Mellon Advisory Committee, Member
- Digital Accessibility Working Group, Member
- Mellon College of Science Core Education Committee (and Steering sub-committee), Member
- Mellon College of Science LEAD committee, Co-Chair
- TEL Writing group, Member (plus active member of assessment sub-committee)
- Dietrich College General Education Committee, Member
- Teaching & Learning Spaces Committee, Co-Chair
- Task Force on CMU Experience (member) + Campus Infrastructure working group (co-chair), Academic Policies (member)
- Middle States Accreditation, Standard 5, Educational Effectiveness Assessment Committee, Consultant

Hershock

- Teaching Innovation Award Committee, Chair
- Academic Advising Award Committee, Co-Chair
- Graduate Student Concerns Committee, Member
- Computer Science Department TA Committee, Member
- Middle States Accreditation, Standard 3, Design and Delivery of the Student Learning Experience Committee, Consultant
- Graduate Student Teaching Award Committee, Co-Chair

Brooks

- Digital Accessibility Working Group, Member
- Dietrich College General Education Committee, Member
- E-Portfolio Working Group, Member

Walsh

- Graduate Student Concerns Committee, Member
- Graduate Student Teaching Award Committee, Co-Chair

Weiss

- Mellon College of Science, First-Year Undergraduate Seminar (EUREKA) Course Design Committee, members (and chair of lesson planning subcommittee)
- MCS PROPEL (Junior Seminar) Committee, Member

Ph.D. and Master's Thesis Committees (Member)

Lovett

- Anita Delahay, Psychology/PIER, Ph.D., advisor
- David Gerritsen, HCI/PIER, Ph.D., dissertation committee member
- Amadee Martella, Psychology/PIER, Ph.D., co-advisor

Hershock

- Jessica Harrell, English, Ph.D., Mellon Technology-Enhanced Learning Fellowship, Advisor (completed August '16)

CMU Courses and Classes Taught

Lovett

- 85-715: Graduate Research Methods, Spring '17
- 05-748: Research Methods for the Learning Sciences, co-taught Verbal Protocol Analysis unit, Spring '17

Brooks

- 51-371: Design Futures, Peter Scupelli, School of Design, guest instructor, Fall '17

Hamilton

- 51-396: Design Ethos and Action course, Peter Scupelli, School of Design, co-instructor, Spring '17

Richards

- Summer College Preview Program, Qatar, Instructor, Computer Science, Summer '16

Walsh

- 79-364: The Birth of Modern Childbirth, 1600 to the Present, Spring '17

Weiss

- 38-101: EUREKA! Discovery and Its Impact, MCS, Fall '16

External Visibility/Professional Work

For over 30 years, the Eberly Center has been one of the premier teaching and learning centers in US higher education. To maintain the visibility of the Eberly Center and contribute to the national and international dialogue in educational development and the learning sciences, we engage in a variety of professional activities outside the University. In addition to publications, awards, and invited presentations, this work includes serving on external committees, boards, and peer-review panels. We also frequently host visiting faculty and administrators from other institutions seeking to establish effective teaching centers at their own institutions.

In the news



Understanding Learning Science and Its Value to Educators

By Michael Feldstein
Posted on February 8, 2017

In a world where we are constantly bargained with product claims about “learning science,” most educators have very little sense of what that really means and how it is relevant to what they do.

Eberly Center and Simon Initiative colleagues speak on this topic: ... educators are empirical, whether they are consciously aware of it or not. The heart of learning science is making that empiricism conscious...

<https://mfeldstein.com/understanding-learning-science-and-its-value-to-educators/>



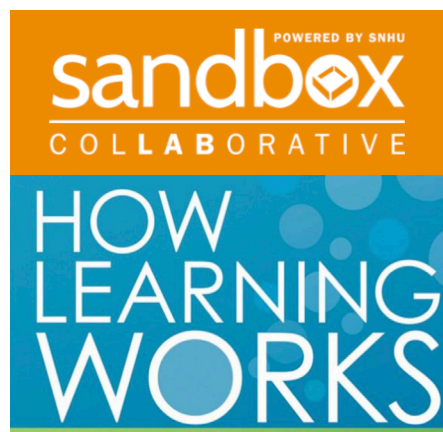
Easing Instructional Designer-Faculty Conflicts

By Emily Tate
May 3, 2017

During course development, designers and content experts often spend months together -- meeting, brainstorming, ... editing and revising course material. ...but at times, the designer and instructor are at odds.

“We’re getting the busiest-of-the-busy faculty who are doing this work,” Lovett said. “The biggest thing we can do to reduce tension around time is being really clear with faculty members about the amount of time and the kinds of activities they’ll be doing.” – **Marsha Lovett**

<https://www.insidehighered.com/digital-learning/article/2017/05/03/easing-conflicts-between-instructional-designers-and-faculty>



Podcast: Learning About the Science of Learning

Marsha Lovett interviewed by Brian Fleming
June 19, 2017

“...the approach we take at Carnegie Mellon is that we’re really interested in studying learning not just in the laboratory, as I said earlier, but in real classroom and real online learning situations. What that means is **we’re studying learning as it occurs** over longer periods of time so we’re able to improve our theories and models of learning with that longer-term data.” – **Marsha Lovett**

<http://www.sandboxcollaborative.org/2017/06/19/learning-about-the-science-of-learning-how-learning-works/>

Awards

Aidan Kestigian and Mary Glavan (Eberly Center Graduate Teaching Fellow and guest speaker, respectively) are the 2017 recipients of the Dietrich College of Humanities and Social Sciences' Graduate Student Teaching Award.

Emily Daniels Weiss, Teaching Innovation Award (as part of the MCS First Year Seminar Team)

External Presentations, Seminars and Workshops

Judy Brooks, "Open Learning Initiative Track" (online course design). PSLC Summer School. PCHE Summer School.

Peter Scupelli and Judy Brooks, "Dexign Futures: a flipped, Open Learning Initiative course" (Poster). Carnegie Mellon Teaching and Learning Summit, Pittsburgh, PA. October, 2016.

Jessica Harrell, "Technology Enhanced Learning: Transformative Writing Practices in the Humanities." (Poster). Carnegie Mellon Teaching and Learning Summit, Pittsburgh, PA. October, 2016.

Jessica Harrell, "Using Google Drive to Create a Collaborative Writing Community." (Poster) Carnegie Mellon Teaching and Learning Summit, Pittsburgh, PA. October, 2016.

Chad Hershock, Heather Dwyer, and Megan Sanders, "Technology-enhanced TA development: An online training module approach", POD Network in Higher Education Conference, Louisville, KY. November, 2016.

Chad Hershock, "How Learning Works: Evidence-Based Teaching Strategies", Bowling Green State University Teaching Fair, OH. March, 2017.

Chad Hershock, "Engaging Students Via Effectively Implementing Active Learning", Bowling Green State University Teaching Fair, OH. March, 2017.

M.C. Lovett, (2016). Improving teaching and active learning. White House Symposium on Higher Education, Washington, DC, November 2016. [panelist]

M.C. Lovett, (2016). Professional development for faculty & staff that facilitates applying research on inclusion and achievement. Reinvention Center 2016 Biennial National Conference, Crystal City, VA, November, 2016.

M.C. Lovett, (2016). How learning works: Translating learning research to teaching practice. New Mexico State University, Las Cruces, NM, September 2016.

M.C. Lovett, (2016). Metacognition: Helping our students become self-directed learners. New Mexico State University, Las Cruces, NM, September 2016.

Katharine Walsh, "Teaching and Learning in Full- and Condensed-Course Formats" (Poster) Carnegie Mellon Teaching and Learning Summit, Pittsburgh, PA. October, 2016.

External Presentations, Seminars and Workshops (continued)

Emily Daniels Weiss, "Using Exam Wrappers as an opportunity for students to practice metacognitive skills" (Symposium talk). Biennial Conference on Chemical Education, Denver, CO. August, 2016.

Emily Daniels Weiss, "EUREKA! and the MCS Metacurriculum" (Poster). Carnegie Mellon Teaching and Learning Summit, Pittsburgh, PA. October, 2016.

Emily Daniels Weiss, "Opportunities for Metacognitive Development in a First-Year Seminar Course" (Poster). POD Network in Higher Education Conference, Louisville, KY. November, 2016.

External Committees, Boards and Journal/Proposal Reviews

Marsha Lovett NSF proposal reviewer for Cyberlearning

Katharine Walsh, Scholarship Committee, Professional and Organizational Development Network, member

Katharine Walsh, Conference Presentation Reviewer (Committee), Professional and Organizational Development Network Annual Conference, reviewer/member

External Colleges and Universities Visiting to Learn About Eberly Center's Work/Approach

- UCLA, Kumiko Haas (July, 2016)
- Notre Dame, Paul Turner & Brian Burchett of Academic Technologies group (Sept, 2016)
- Dale Pike (and Tegan), Virginia Tech (Sept, 2016); other VATEch group (May, 2017)
- Brad & Xudong Deng, Singapore Institute of Technology (May, 2017)

AY2016-17 EBERLY CENTER STAFF MEMBERS

Marsha Lovett, PhD

Director, Eberly Center for Teaching Excellence & Educational Innovation
Co-Coordinator, The Simon Initiative
Teaching Professor, Psychology

Diana Bajzek, Senior Technology Solutions Specialist

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Meg Richards, Senior Systems Software Engineer

Megan Sanders, PhD, Postdoctoral Research Associate and Teaching Consultant

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