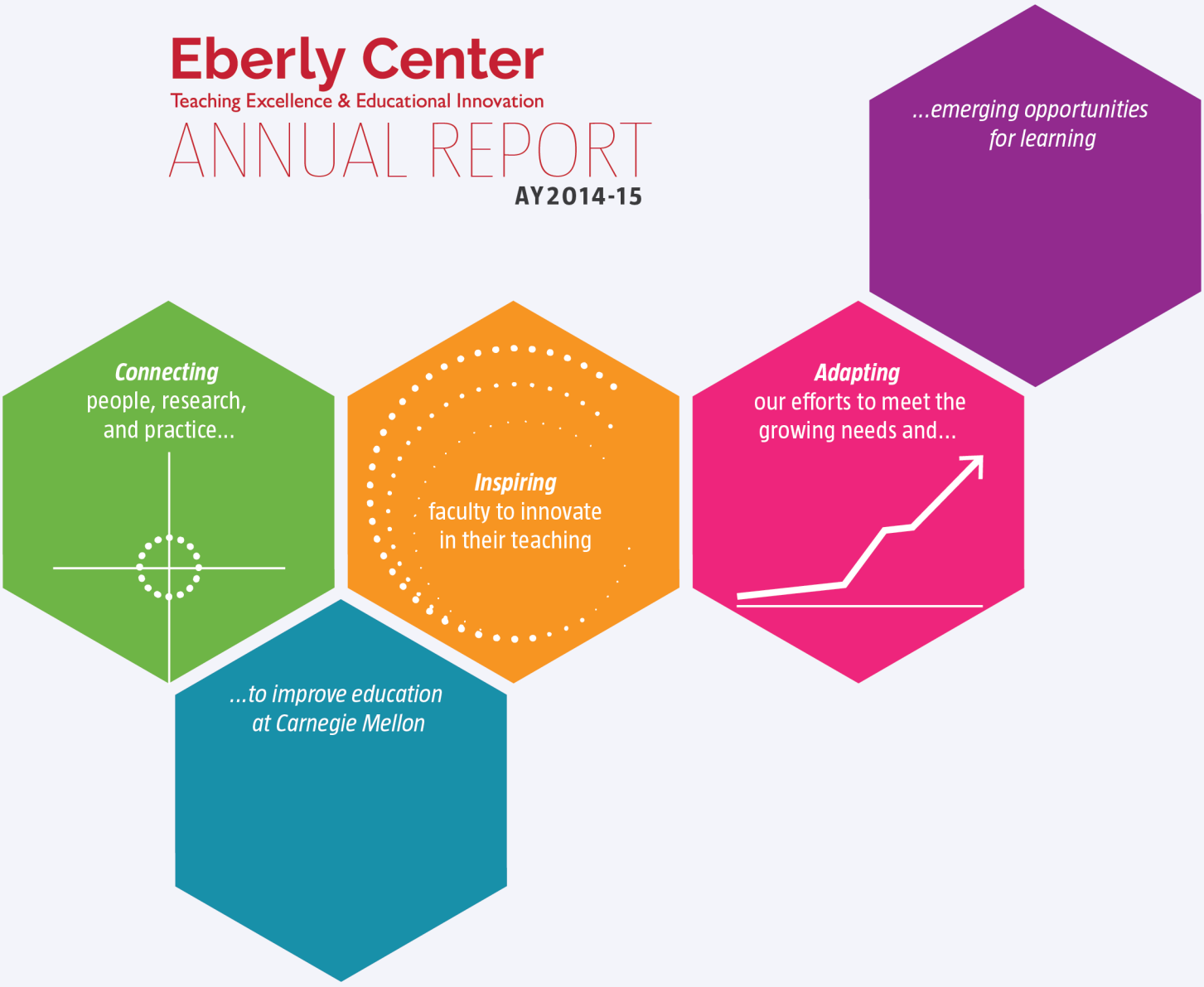
Eberly Center

Teaching Excellence & Educational Innovation

ANNUAL REPORT

AY2014-15



Carnegie Mellon University

Eberly Center for Teaching Excellence & Educational Innovation

Annual Report AY 2014-2015

Executive Summary

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

42% of our consultations helped faculty teach more effectively with educational technology.

Connecting. Inspiring. Adapting.
Those three words aptly describe the Eberly Center in 2014-2015. The support and services we provide to our faculty and graduate students 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 – through innovative, targeted programs. In AY2014-15, we have...

Provided 356 consultations on teaching and learning to 223 faculty members.

Served more than 280 unique graduate students through our seminars, workshops, one-on-one consultations, and TA orientations.

Developed 4 new Faculty Special Interest Groups to support faculty in creating instructional videos that work for learning, collecting data to improve learning outcomes, and applying the science of learning in STEM disciplines.

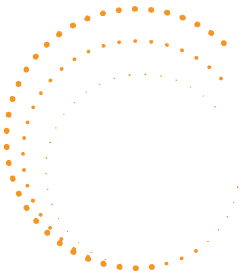
Provided 30 customized workshops and seminars, further tailoring our support for faculty as well as for graduate students.

Offered a 2-day Incoming Faculty Orientation to 42 new faculty hires.

Advised 22 programs and units on effective strategies for curriculum design and assessment, technology-enhanced learning, learning space design, and TA training.

Through these efforts, we reached faculty and graduate students across **all schools and colleges** at CMU and thereby have facilitated new strategies, technologies, and perspectives in teaching and learning, while building a community of educators.

An important component of teaching excellence and educational innovation – and hence of our work – is the effective use of 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.



Inspiring faculty and graduate students to innovate in their teaching.

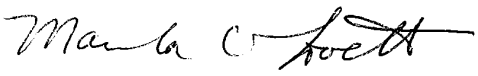
Adapting our efforts to meet the growing needs and emerging opportunities for learning.

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 is #3 on The Chronicle's "Top 10 Books on Teaching" and has a world-wide audience, with translations into Korean, Chinese, and Japanese. Our **award-winning website** received more than 3 million visits this year and is referenced by universities and teaching centers around the globe.

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 faculty **collect and use data** to improve their students' learning and by working with programs to support their **curricular transitions and innovations**.

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.

We supported 55 faculty members, including **ProSEED Simon Initiative Grantees**, in using learning outcome data to inform their instructional design and use of technology.



Marsha C. Lovett, PhD
Director

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 classroom observations, student focus groups, and examination of teaching materials.

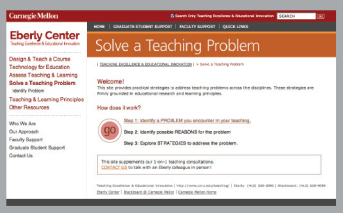
Research-based | We distill, synthesize and apply research, integrated from a range of disciplines, to help faculty and graduate students design and teach more effective courses. We also help faculty colleagues to conduct educational research in their disciplines where gaps in the literature exist.

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

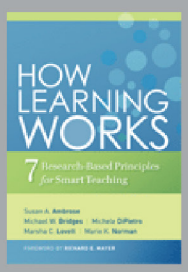
Significant milestones in Eberly Center's recent history

Solve a Teaching Problem
Award-winning site
launched



2008

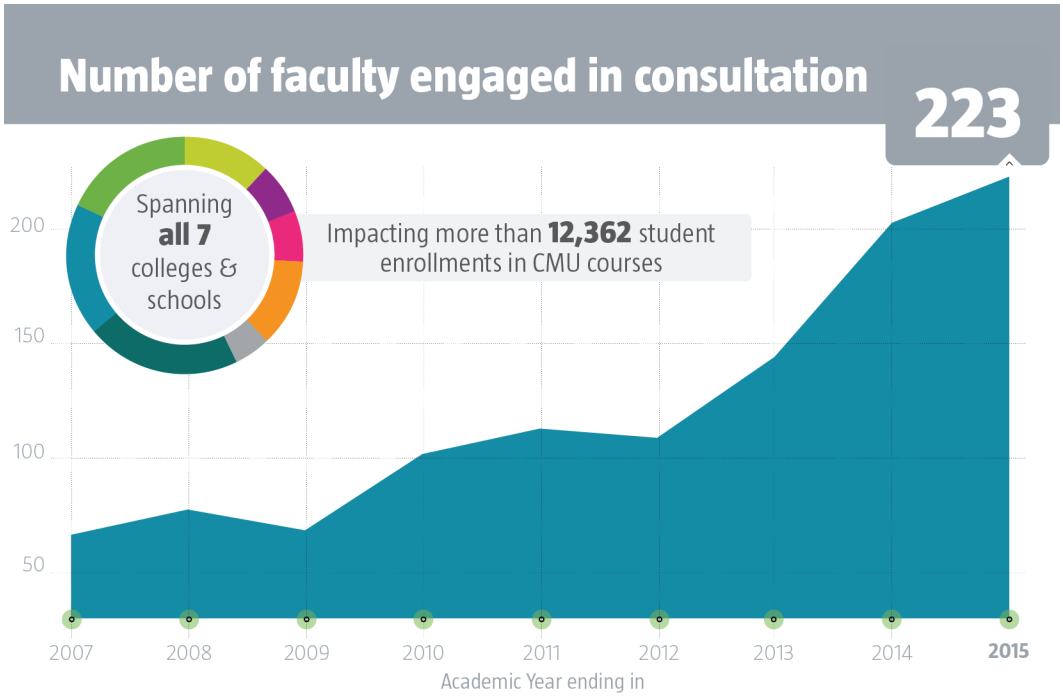
How Learning Works
published



2010

Learning Principles
pedagogical framework
for Open Learning Initiative

2010



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, but we are happy to meet with anyone who contacts us.

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

ProSEED Grants for Technology Enhanced Learning Innovations; Eberly Center responds to increase in faculty requests for help in using learning data

ProSEED

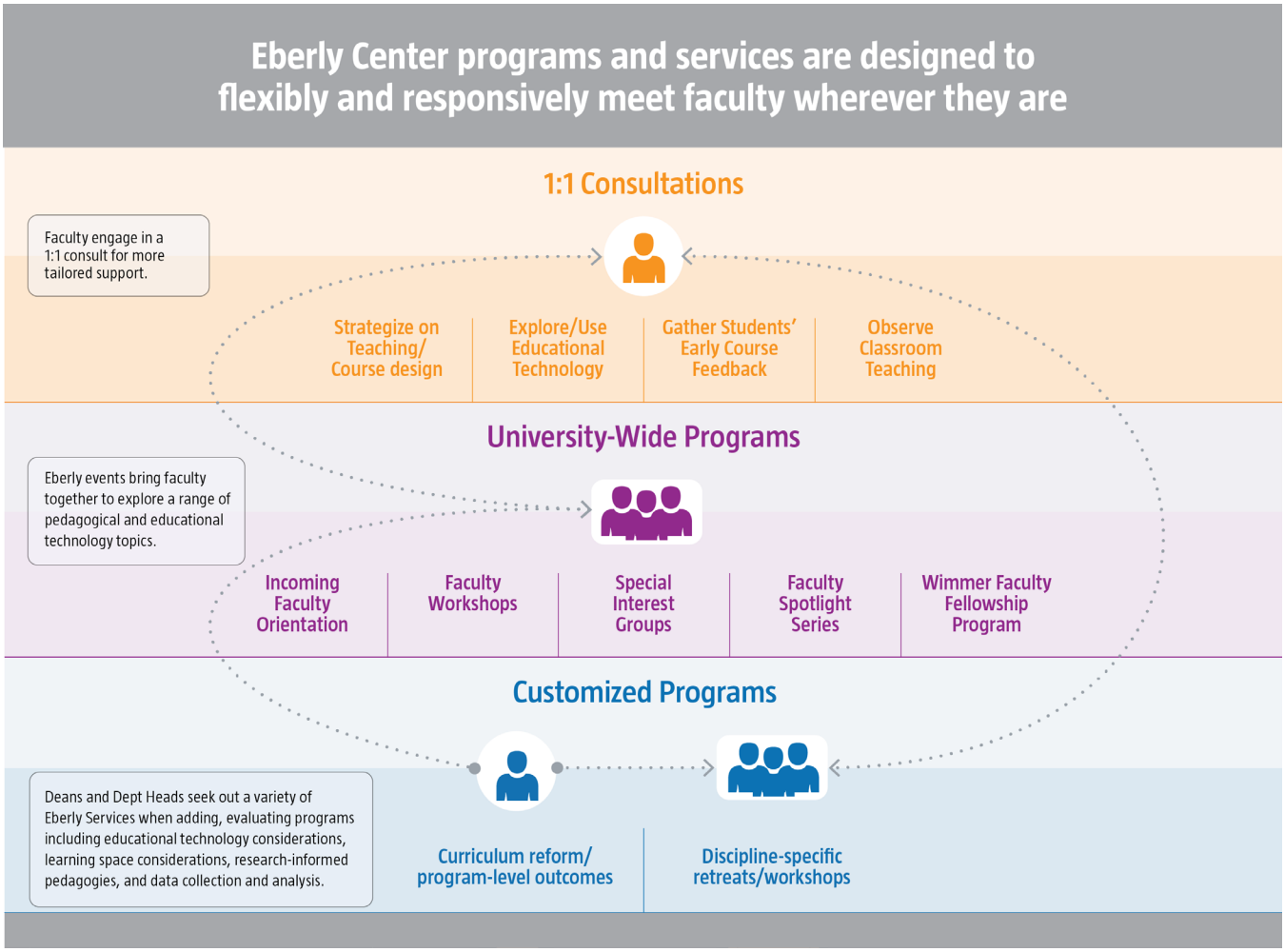
2014

Faculty Support

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 requrest a one-on-one consultation to implement 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. This year, we expanded two new series: *Spotlight on Innovative CMU Faculty Teaching* and *Faculty Special Interest Groups.* The latter was a finalist for the annual Innovation Award from the Professional and Organizational Developers Network in 2014.



Highlights of AY 2014-15

Faculty demand for Eberly Center programs and services reached an all-time high.

We provided 356 distinct consultation services to 223 faculty members (totalling more than 571 client meetings), representing all CMU schools and colleges and impacting more than 12,362 student enrollments in courses.

We supported 55 faculty members in using learning data to improve course design, teaching, and student outcomes.

179 faculty members attended our campus-wide programs.

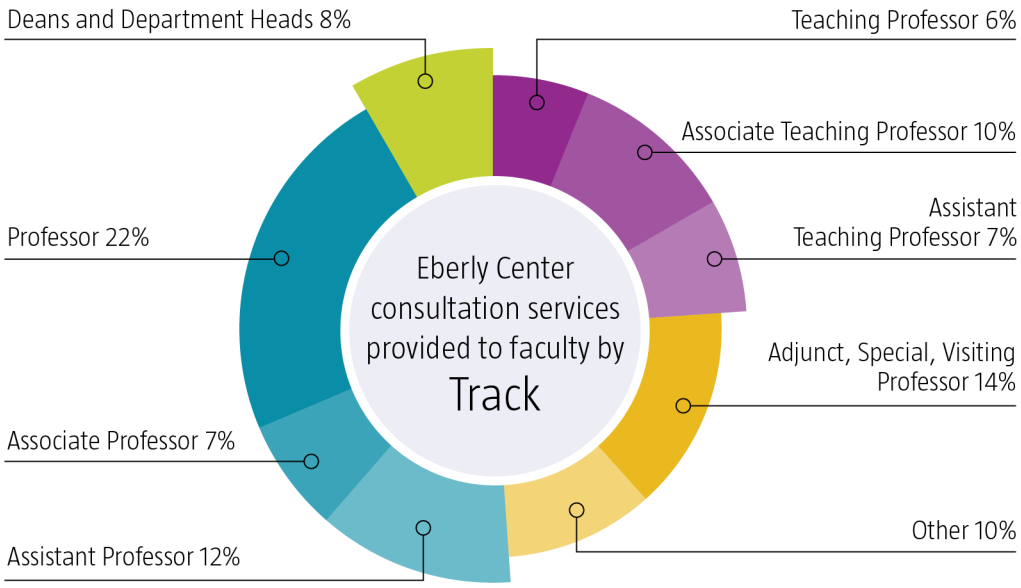
Four new Faculty Special Interest Groups met 12 times to support faculty in implementing evidence-based approaches to: creating instructional videos, collecting data to improve learning outcomes; and applying the science of learning in STEM disciplines.

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

Forty-two faculty (50% of new hires) attended Incoming Faculty Orientation, fostering an interdisciplinary community and culture around evidence-based teaching and learning.

The Wimmer Faculty Fellows Program supported six junior faculty members to enhance their teaching through concentrated work designing or re-designing a course, innovating new materials, or exploring a new pedagogical approach.

223 faculty were served in AY2014-15 by Eberly Center teaching consultations, reaching a new high.



Faculty Consultations

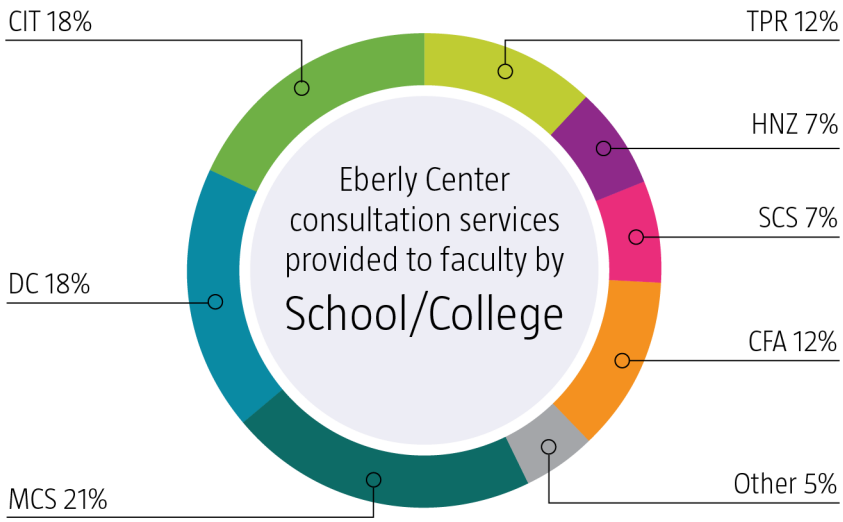
"Not only have my teaching evaluations improved, but my students are demonstrating greater mastery... I cannot say enough wonderful things about the [Eberly Center's] contributions to teaching in the academy."

– Associate Teaching Professor

Eberly consultants work with individual faculty members of all ranks and disciplines on any teaching or learning issue.

Consultations are tailored to the particular teaching context, draw on relevant educational research, and support implementation of evidence-based enhancements of teaching and learning. Common examples include improving students' learning in a course, incorporating a new pedagogical technique, teaching effectively with educational technology, designing or redesigning a course, and solving a teaching problem. To support teaching improvement, at the faculty member's request, Eberly colleagues also conduct classroom observations of teaching and/or gather confidential and anonymous Early Course Feedback from students via surveys and focus groups.

We served faculty in all seven CMU schools and colleges



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 179 faculty attended these events.

Workshops

Workshops are stand-alone, 90-minute interactive sessions, designed and facilitated by Eberly Center staff. We presented four workshops in Fall 2014:

- *Avoid Death by PowerPoint: Leveraging Slides to Support Student Learning*
- *Incorporate Peer Evaluation Effectively: Students Learning From Students*
- *Jump-Start Your Spring 2015 Course Planning: A Syllabus (Re-)Design Workshop*

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 workshop.

Eberly colleagues design and facilitate SIGs, tailoring programs to meet the emerging needs of participants via seminar or round table 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 instructors. Seminar-style SIGs conclude via small group consultations in which 3-4 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.

We facilitated four SIGs in AY 2014-15, each serving a different cohort of faculty:

- F14: *Collecting Data To Improve Learning Outcomes*
  [seminar style for faculty considering]
- S15: *Collecting Data To Improve Learning Outcomes*
  [round-table style for faculty implementing]
- S15: *Applying the Science of Learning in STEM disciplines*
  [seminar style for Mellon College of Science]
- S15: *Creating Instructional Videos that Actually Work for Learning*
  [workshop style for faculty implementing]

"In the 15 years I've taught at CMU, your 3-part SIG 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

Spotlight on Innovative Teaching

Spotlight on Innovative CMU Faculty Teaching is a series highlighting an array of innovative, transferrable teaching methods and novel uses of educational technology that CMU faculty are currently using to enhance student learning. Four 60-minute sessions featured brief presentations by spotlighted CMU faculty, followed by informal roundtable discussions among faculty across disciplines. AY 2014-15 sessions included:

Enhancing Teaching and Student Engagement with Online Collaboration Tools
- Aisling Kelliher, Associate Professor, School of Design and Human-Computer Interaction Institute
- Bill Nace, Assistant Teaching Professor, Electrical & Computer Engineering

Transforming Courses by Infusing Active and Inquiry-Based Learning
- Maggie Braun, Assistant Teaching Professor, Biological Sciences
- Jeria Quesenberry, Associate Teaching Professor, Information Systems

Learning Between Disciplines via Making and Makerspaces
- Daragh Byrne, Intel Special Faculty, Architecture and IDeATe
- Garth Zeglin, Instructor/Project Scientist, Robotics Institute

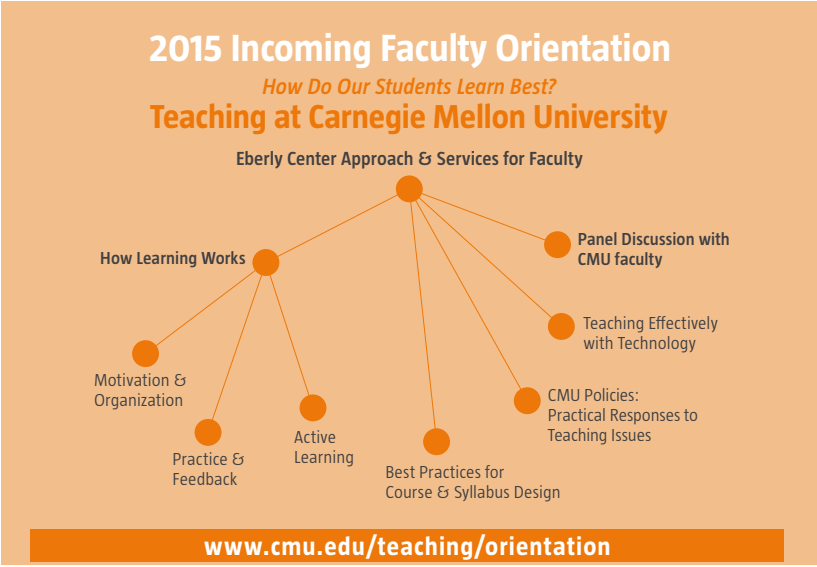
Leveraging Social Media to Foster Disciplinary Habits of Mind
- Kristin Hughes, Associate Professor, School of Design
- Costa Samaras, Assistant Professor, Civil and Environmental Engineering

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 re-designing 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 2014-15 Wimmer Faculty Fellows are:
- DJ Brasier, Assistant Teaching Professor, Biological Sciences, Mellon College of Science
- Jennifer Keating-Miller, Special Instructor, English, Dietrich College of Humanities and Social Sciences
- Ali Momeni, Assistant Professor, School of Art, College of Fine Arts
- Joshua Reiman, Visiting Assistant Professor, School of Art, College of Fine Arts
- Stacy Rosenberg, Assistant Teaching Professor, School of Public Policy and Management, Heinz College
- Shoba Subramanian, Assistant Teaching Professor, Biological Sciences, Mellon College of Science



Incoming Faculty Orientation

For over 30 years, the Eberly Center has offered programming to support newly hired faculty. We invite 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 2014, 42 new faculty attended. Participants rated the program as having *high value*: on average, rating it a 4.6 out of 5 (5 being *very helpful*). Additionally, most participants self-reported numerous ways in which they would incorporate research-based strategies from the program into their future teaching. 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

To accomplish these objectives, we presented a multi-day program of interactive, research-based workshops on topics related to teaching and learning. The program also included a panel discussion with award-winning faculty as well as a Q&A session with Eberly colleagues and the Vice Provost for Education to give participants ample time to ask questions about their new academic community.

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.

- *Academic Advising Models*
  School of Architecture
- *Designing Writing Assignments and Rubrics*
  Global Communication Center
- *Translating Your Course Online*
  Tepper School of Business
- *How Learning Works: Evidence-Based Teaching Strategies*
  Hunt Library

"I benefited substantially from the contributions and insight of [Eberly Center 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."
– Assistant Professor

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

– Herb Simon

Promoting Research on Teaching & Learning

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 teaching. This year, we supported **55 faculty members in using learning outcome data** to inform their instructional design and use of technology. These faculty members are taking a data-driven approach to improving education.

We promote our colleagues' work in this area through one-on-one consultations, supporting the ProSEED Simon Initiative Seed Grant program, and contributing to education-related grant work.

Consultations on the Scholarship of Teaching and Learning

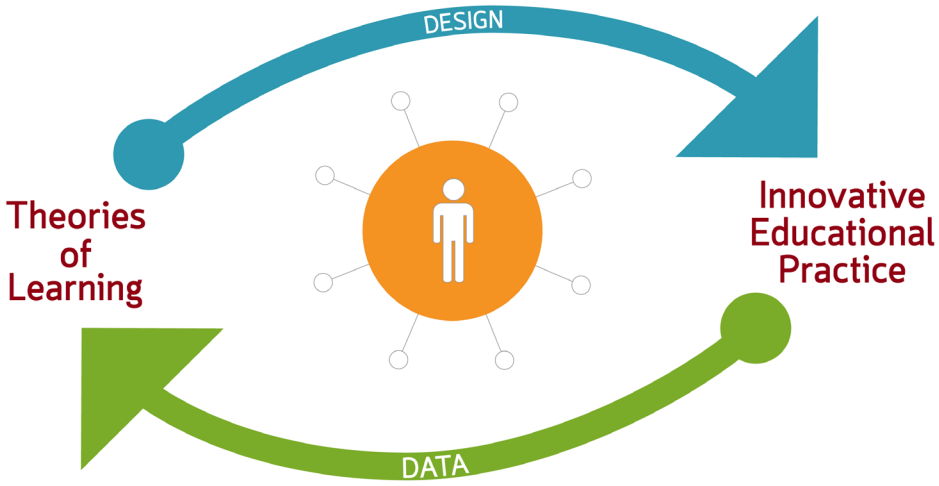
We work with faculty colleagues on disciplinary-based educational research – from designing a study and planning instructional interventions, to creating valid and reliable measures of learning, to identifying relevant journals and conferences for disseminating the work. Often these consultations stem 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:

- Developing and studying Prose Style online instructional modules with Chris Neuwirth, Professor of English.
- Collecting and analyzing quantitative and qualitative data from students and peer mentors in Modern Chemistry with Dave Yaron, Professor of Chemistry.
- Harvesting and analyzing online learning data from the OLI-French courses with Bonnie Youngs, Teaching Professor of French.
- Investigating the effects of formative assessment and simulations in the OLI module on DNA replication with D.J. Brasier, Assistant Teaching Professor of Biological Sciences and Gordon Rule, Professor of Biological Sciences.

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 **10 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:

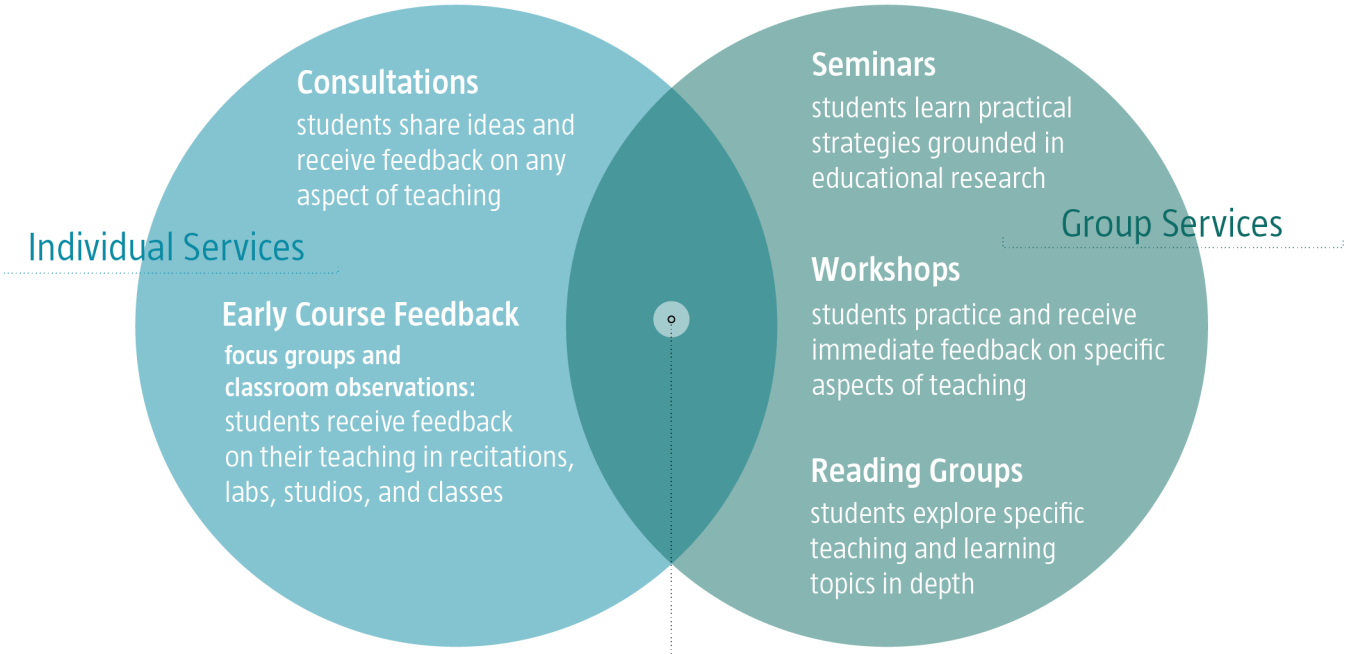
- Building a Learning Analytics System to Improve Student Learning and Promote Teaching Across Multiple Disciplines. (09/01/2012 - 08/31/2016). National Science Foundation, $496,315.
- An Integrated Leadership and Innovation Curriculum for Undergraduate Mechanical Engineering. (10/01/2013-09/30/2015). National Science Foundation, $199,975.
- 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. (07/31/14-01/31/16). Carnegie Corporation, $225,000.
- Understanding and Overcoming Institutional Roadblocks to the Adoption and Use of Technology-Enhanced Learning Resources in Higher Education (05/01/15-04/30/16). Carnegie Corporation, $1 million.
- Cultivating Digital Scholarship and Technology-Enhanced Learning in the Humanities. (09/01/14-08/31/19). Andrew W. Mellon Foundation, $2 million.

Graduate Student Support

We offer a wide range of services to graduate students to support them both 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, our services accommodate graduate students' 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.

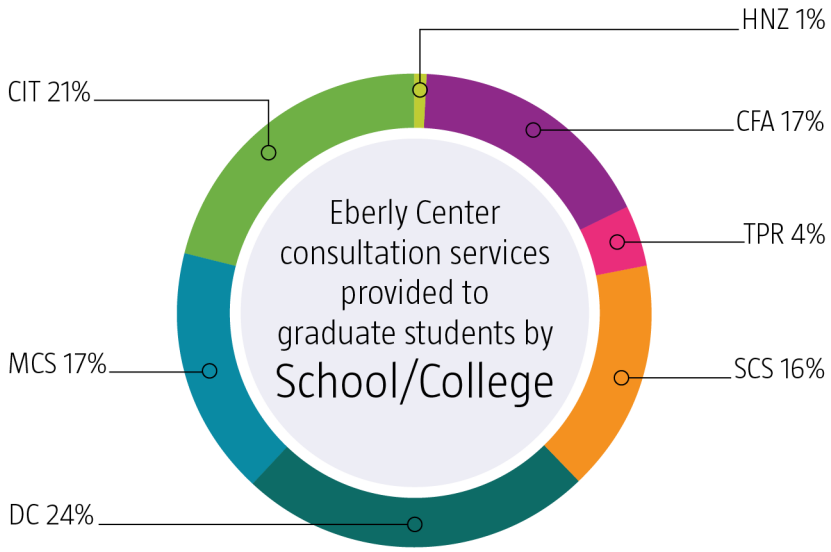
In addition to providing these services directly to graduate students, we participate in university- and unit-level orientations and professional development series, and we support graduate program coordinators and individual faculty members as they train and support their graduate students to be teaching assistants and instructors.

Graduate Student Programs



Future Faculty Program

students develop and document their teaching skills, through a mix of group and individual activities, to prepare for a faculty career



Highlights of AY 2014-15

Serving the diverse CMU community: Across all of our programs and services, we served more than 280 unique graduate students from all seven schools and colleges and from more than 40 programs.

Disseminating evidence-based teaching practices: We filled more than 560 seats at our university-wide seminars and workshops.

Preparing graduate students to teach as faculty: The number of graduate students participating in our Future Faculty Program continued to grow this year, increasing 50% from 67 to 102 students.

Responding to emerging needs and interests: We developed nine new seminars, workshops, and other group sessions to respond to new CMU policies and initiatives, new trends in TA responsibilities, and the increasing need to document teaching effectiveness for the academic job market.

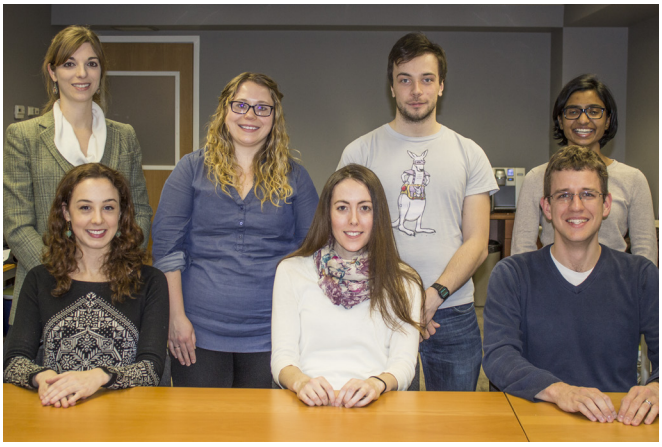
Graduate Student Consultations

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-ship to discuss strategies for facilitating student participation; then, during the semester of the TA-ship, the graduate student may request a classroom observation from an Eberly consultant to gain additional feedback. Because so many graduate students are enrolled in multi-year 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 **219 consultations** to 115 unique graduate students. Of these students, 83% were enrolled in doctoral programs and 17% were enrolled in master's programs.

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 2014-15, the Eberly Center worked with seven GTFS:



- Alissa Belotti, History
- Shanna Bowersox Bowman, Biological Sciences
- Matt Eicholtz, Mechanical Engineering
- Jessica Harrell, English
- Kate Hamilton, English
- Clive Newstead, Mathematical Sciences
- Niranjini Rajagopal, Electrical & Computer Engineering

Besides receiving the most in-depth professional development we provide to CMU graduate students, GTFs in turn contribute to the Eberly Center's graduate support activities. Last year, GTFs provided 1-on-1, confidential, consultation services (i.e., classroom observations, early course feedback, or teaching philosophy consultations) to 24 fellow graduate students. They also facilitated microteaching workshops, and the associated follow-up video consultations, for 36 graduate students, providing valuable, low stakes opportunities for practice and feedback on their teaching strategies.

University-Wide Programs

This year, **232 graduate students, from all 7 CMU schools/colleges**, attended our university-wide seminars and workshops.

Our university-wide graduate student 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.

Seminars

Our two-hour seminars cover a wide variety of topics related to teaching, learning, and professional development as an educator

We presented 16 seminars on 14 topics, including four 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 nine core seminars at least once each year. Note that our Future Faculty Program includes these core seminars as one of its requirements.

Fall 2014

- *New!* Promoting Peer Learning
- *New!* Leveraging Diversity and Promoting Equity in Your Classroom
- *New!* Flipping the Classroom
- Course and Syllabus Design
- Monitoring Your Teaching Effectiveness
- Planning and Delivering Effective Lectures
- Providing Helpful Feedback

Spring 2015
- *New!* Engaging Students in Active Learning in the Classroom
- Conducting Productive and Engaging Discussions
- Motivating and Engaging Students
- Supporting Student Learning through Good Assessment Practices

Summer 2014
- Encouraging Intellectual Development and Lifelong Learning
- Guiding Attention and Memory to Build Knowledge
- Course and Syllabus Design
- Crafting a Teaching Statement
- Leveraging Slides to Support Learning
- Providing Helpful Feedback

Workshops

Our workshops, usually 2.5 hours long, give participants the opportunity to practice and receive immediate feedback on specific aspects of teaching. This year, we facilitated four types of workshops:
- *Microteaching Workshop*
  Students teach a five-minute lesson and receive immediate feedback.
  Fall 2014 (three sessions)
  Spring 2015 (three sessions)
  Summer 2015 (two sessions)
- *Syllabus Workshop*
  Students share and receive immediate feedback on course syllabi.
  Summer 2015
- *Teaching Statement Workshop*
  Students share and receive immediate feedback on teaching statements.
  Summer 2015
- *New! Slides Workshop*
  Students share and receive immediate feedback on slides.

Customized Unit-Level Programs

As a complement to our university-wide programs, we develop and deliver seminars and other sessions that address specific unit-level needs. These requests come from a variety of sources: graduate program coordinators, faculty members and post-docs in a supervisory role, and graduate students who coordinate professional development activities or teaching training for fellow students in their departments.

Approximately **208 unique graduate students participated** in these customized sessions. This year we presented 12 unit-level sessions, four of which were new.

Biological Sciences
- Getting Started: Smart Strategies for Teaching and Learning
  Fall 2014: part of department orientation for new graduate students

Chemical Engineering
- Getting Started: How To Be An Effective TA
  Fall 2014: part of department orientation for new graduate students

Chemistry
- Motivation in Teaching and Learning
  Fall 2014: part of department orientation for new graduate students

Civil and Environmental Engineering
- Assessing Student Learning and Providing Helpful Feedback
  Fall 2014
- Working Well One-on-One
  Fall 2014
- Teaching Problem Solving
  Fall 2014

Computer Science
- Using Early Course Feedback
  Fall 2014
- Reflecting on Your Teaching
  Spring 2015

Dietrich College of Humanities & Social Sciences
- Technology-Enhanced Learning Bootcamp
  Summer 2015

Engineering and Public Policy
- Evidence-Based Teaching
  Spring 2015

English
- Facilitating Effective Discussions
  Fall 2014: part of department orientation for new graduate students

Mellon College of Science
- Coordinating Productive and Engaging Discussions
  Fall 2014

Philosophy
- How To Be An Effective TA
  Fall 2014: part of department orientation for new graduate students

Tepper School of Business
- Evidence-Based Teaching
  Spring 2015

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

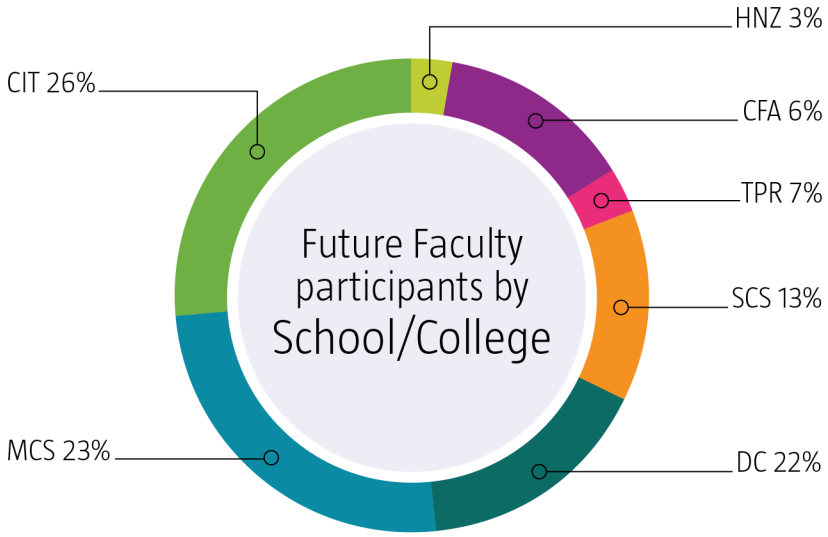
Future Faculty Program

Our Future Faculty Program helps graduate students develop and document their teaching skills in preparation for a faculty career. Graduate students 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 one's 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, graduate students receive a transcript that lists all of their Eberly activities.

Of the 102 graduate students enrolled in the Future Faculty Program, 90% are doctoral students and 10% are master's students. **Participation increased by almost 50%**, as 35 graduate students enrolled in the program this year. 13 students completed the program requirements.



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 approximately 175 master's and doctoral students. This session 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 that takes place during the university-wide orientation for new graduate students and typically draws several hundred graduate students.

At the department level, we presented an overview of our graduate student services for 11 departments to more than 350 new graduate students. For six of these departments, we also presented sessions tailored both to the discipline and to new graduate students' common teaching responsibilities in their program; these sessions are listed in the "Customized Unit-Level Programs" section. The list below summarizes our department-level orientation sessions:

- Biological Sciences
- Biomedical Engineering
- Chemical Engineering
- Chemistry
- Civil and Environmental Engineering
- Design
- English
- Mechanical Engineering
- Philosophy
- Robotics
- Tepper School of Business

Related Support for Post-Docs

This year, two individuals in post-doctoral positions have worked with the Eberly Center. Because post-docs at Carnegie Mellon typically hold limited or no teaching responsibilities and are at an early stage of their academic careers, their needs tend to be most similar to graduate students' and are met through the services we offer to graduate students.

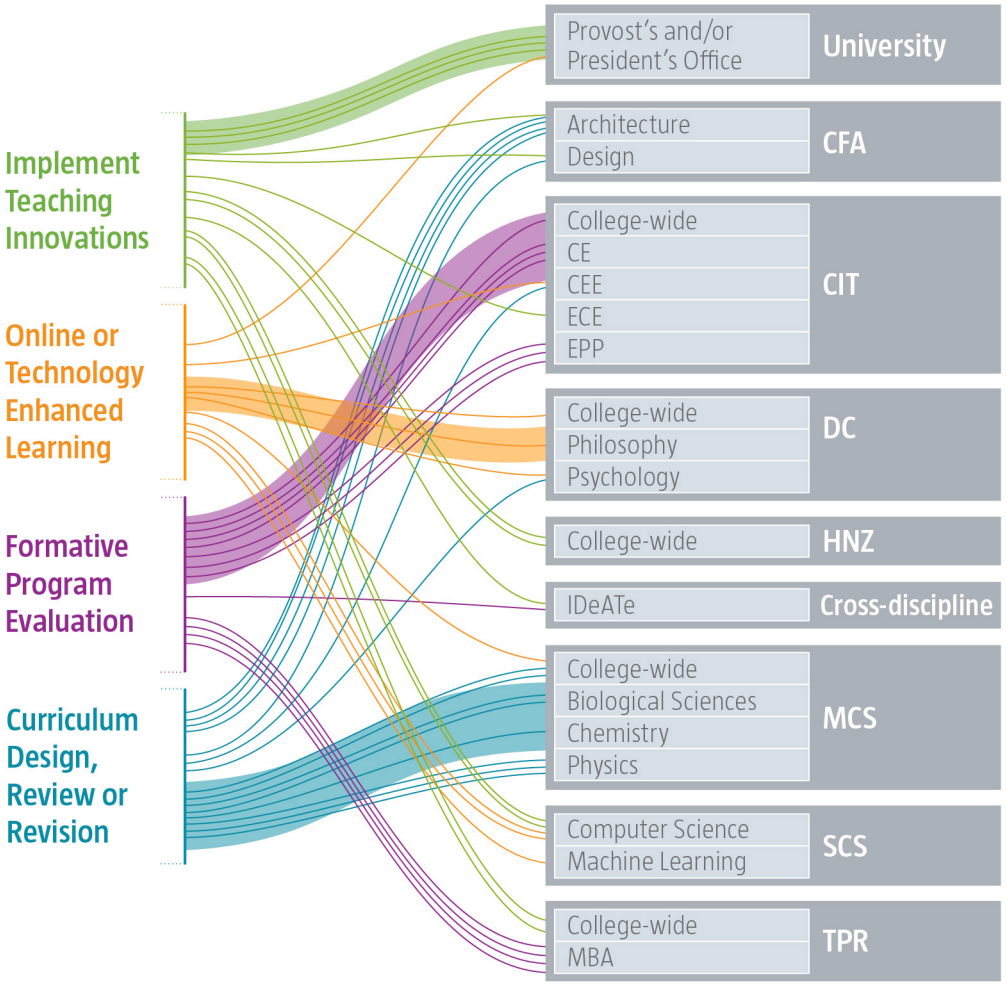
Program-Level Support

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 pedagogical innovations, 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
- leveraging existing data sources and identifying opportunities to measure student learning to inform formative program evaluation.

In academic year 2014-15, we provided 45 discipline-specific, program-level consultation services, serving approximately 50% of all CMU departments, including academic programs in all seven CMU Schools and Colleges, as well as the Library and the Provost's and President's Offices. Program-level consultations often involve a rich series of interactions and multiple Eberly services.

We provided 49 discipline-specific, program-level services to 15 unique departments, representing all seven schools and colleges.



Examples of our work: Translating strategic initiatives

Mellon College of Science

The Mellon College of Science (MCS) is developing and implementing a new Core Education curriculum which takes an innovative, holistic approach towards fostering the growth of students in four dimensions: scholar, professional, citizen, and person. In AY 2014-15, the Eberly Center played an integral role in this initiative by providing consultations, committee service, and customized staff support for:

- articulating program-level learning outcomes
- redesigning the curriculum to align with program-level learning outcomes
- developing and implementing the new first-year seminar course (38-101 EUREKA!: Discovery and Its Impact) for all 200 first-year MCS students
- evaluating, selecting, and adopting educational technologies
- designing and implementing a curriculum-level assessment plan, including metrics of student learning and collection of baseline data, to iteratively inform course- and program-level improvements.

IDeATe

In Fall 2014, the Integrative Design, Arts and Technology Network (IDeATe), an interdisciplinary collaboration among faculty and staff from 25 units in four CMU colleges, launched eight campus-wide, interdisciplinary concentrations and minors, providing integrative design experiences and connections to diverse networks of students. In AY 2014-2015, Eberly Center supported the implementation and ongoing evaluation of courses in this program, including:

- development and articulation of course- and program-level learning objectives
- design and implementation of courses using evidence-based teaching strategies
- effective selection, use, and development of educational technology
- design of new studio learning spaces to support pedagogical goals
- collection and analysis of student learning data to inform iterative course- and program-level improvements.

Tepper Hybrid MBA Program

This year, the second cohort of students enrolled in the Tepper School's Hybrid MBA program, a combination of highly interactive, online, distance learning and intensive, on-site weekends for working professionals living outside Pittsburgh.

When the Tepper School began exploring ideas for implementing this program, faculty leaders turned to the Eberly Center for both pedagogical and technological support. For example, Eberly colleagues raised specific pedagogical and technological questions to guide evaluations of different online platforms, tools, and instructional formats. We offered a workshop series tailored to support the faculty members who would be "translating" their courses to the online format. We provided 1:1 consultations as faculty members re-designed their courses, and we helped individual faculty members and program heads collect and analyze student learning data.

The Hybrid MBA faculty are now preparing for their third year, and the Eberly Center will offer similar support mechanisms for onboarding additional Tepper faculty as they prepare to teach in this new format.

Moreover, this work resulted in the creation and collection of valuable resources that the Eberly Center continues to leverage to support other CMU faculty transitioning to online/blended instructional format.

"Your workshops were invaluable in getting [faculty] prepared for the first year of the [FlexMBA] program and we would love if they could continue..."
– Professor

Technology for Teaching, Learning, and Educational Innovation

When the Office of Technology for Education merged with the Eberly Center for Teaching Excellence in 2013, the two groups did so with a deliberate goal of *bringing 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 was key to better serving not only immediate needs, but the growing aspirations felt and expressed by our teaching community.

Now, as the Eberly Center for Teaching Excellence & Educational Innovation, our portfolio of services has grown to extend our support and is tuned to enable broader and deeper impact at CMU.

42% 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 (course management system).*

Highlights of AY 2014-15

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

Our 1:1 faculty and program-level consultations in 2014-15 included...

- Development of models for online courses, modules
- Best practices for creating and using instructional videos
- Support for full course set-up in Blackboard and Canvas
- Online self and peer assessments
- Plagiarism-detection tools
- Distance teaching using synchronous communication tools and course capture
- Annotation tools for in-class and online lectures
- Clickers for use in lectures to spur discussion and comprehension checks
- E-portfolio tools, blogs, etc for reflective practice

For programs incorporating technology:

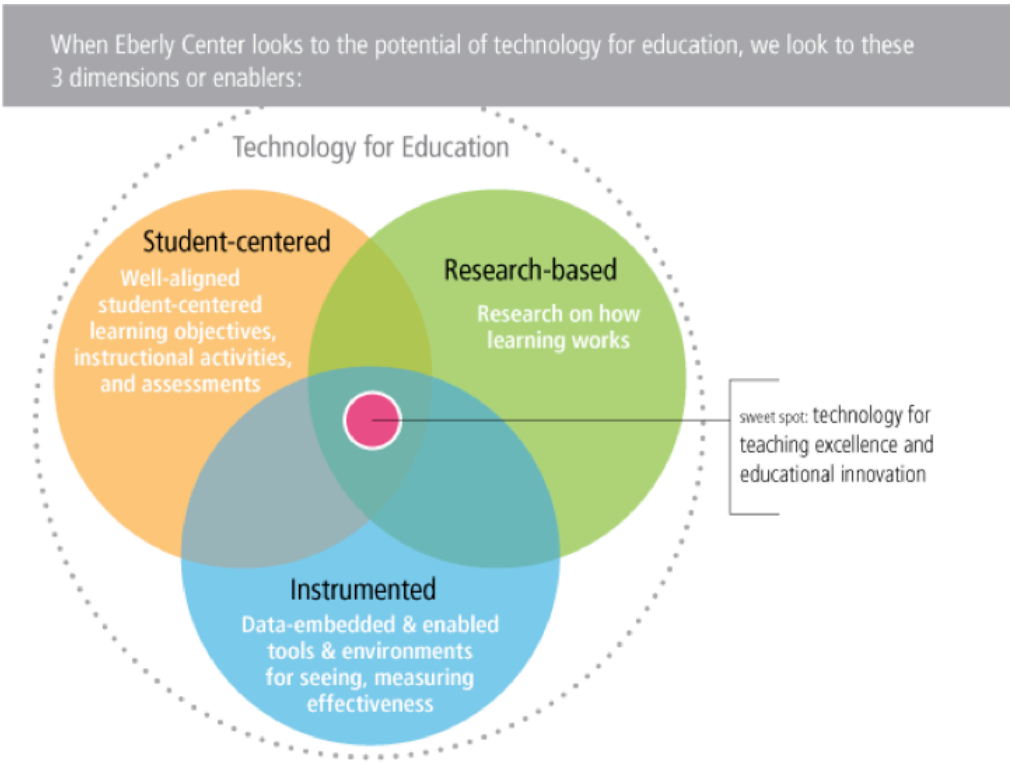
We developed design frameworks and models that facilitate the process for translating traditionally taught courses to online, leveraging the research on learning and student-centered design principles. We have applied these to support: Tepper's Hybrid MBA, IdeATe courses, ProSEED recipients, and others.

- *Dietrich College*, TEL Bootcamp: We designed and delivered a series of technology-enhanced learning workshops to about 40 Ph.D. students and a few faculty members in May 2015.

Collaborating with academic and administrative units:

We provide support to several broad impact educational technology projects, including investigation, design, effective use, and/or evaluation of online and hybrid teaching platforms, course capture, learning spaces, and digital accessibility.

- *Computing Services:* three discovery projects: course capture, software- or web-based conferencing, and mobile clickers (response system).
- *Tepper School of Business:* evaluate and support its online course platform Canvas, instructor-made videos, synchronous teaching tools, and other educational technology "plug-ins."
- *School of Computer Science:* evaluate effectiveness of the pedagogical design of the Citadel teaching clusters.
- *Mellon College of Science:* investigate and integrate technologies to support its revised curriculum.



Our Approach to Educational Technology

At Eberly, we work to make sure that technology is used deliberately for helping teachers teach and students learn; for the delivery of educational excellence and the invention and iterative improvement of educational innovations.

Goal identification and alignment

The (re)alignment/focus on goals is critical to the effective use of technology for education. When a faculty member comes to us asking about a technology and how to use it in their classroom, we begin by asking about their goals for their students' learning and how they envision using the technology. This simple interaction provides us with key insights: has s/he identified a gap or problem the technology can uniquely address and/or an opportunity afforded by a new technology?

Bringing the research on learning to bear

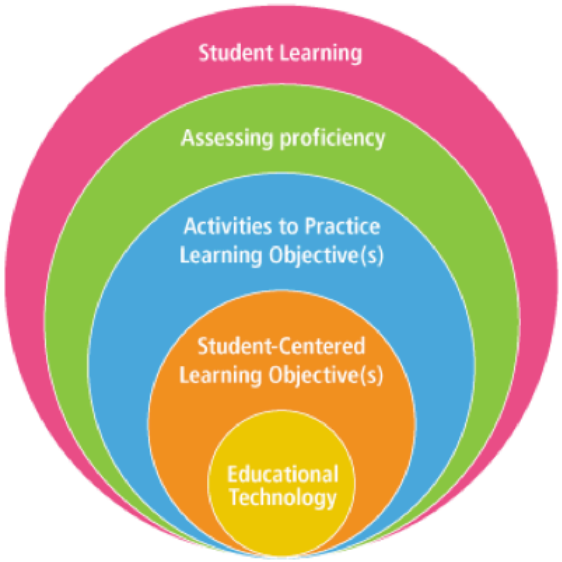
Through Eberly's and others' work on how learning works, we are able to leverage the research on learning and apply it to individualized contexts of our faculty.

Using a modular approach to design and data-informed iterative refinement

When we support the faculty with using educational technology for their teaching and students' learning, combined with the socratic method to elicit goals, vision, etc., we use a modular approach to design. For example, a faculty member comes in and wants to create instructional videos so that s/he can flip the classroom. We oftentimes suggest that they initially flip a class or a segment, and evaluate how it worked. We have worked with enough of these cases to identify affordances that faculty can leverage and a few common pitfalls that we can help our faculty colleagues avoid.

In AY2014-15, our ed tech team managed and provided help desk support to: 3136 Blackboard (Bb) courses; 1357 instructors; 94,409 student enrollments in Bb courses.

We look to technology through the lense of student-centered learning objectives. When technology operates as an enabler of this goal, it empowers teachers and learners.



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

Simplifying and leveraging the technology ecosystem

Focusing students' efforts and attention on the learning goals, rather then the technology, is key. We know that when technology is used effectively it can improve learning, but when there's a mismatch it can divert students' cognitive resources and the faculty's time. For reasons like these, we want faculty to consider several things, including:

- effectiveness and match of a particular technology for teaching and learning goals
- keeping students' cognitive focus on the learning task vs on learning how to use a technology
- responsibilities around technology use (e.g. student privacy, digital accessibility)
- training and amount of time needed (for both students and instructors) to ramp up to use a particular educational technology
- levels and types of support they have available to them when using centrally supported technologies versus off-the-shelf/commercial tools

Targeting uses of technology to solve problems and extend opportunities

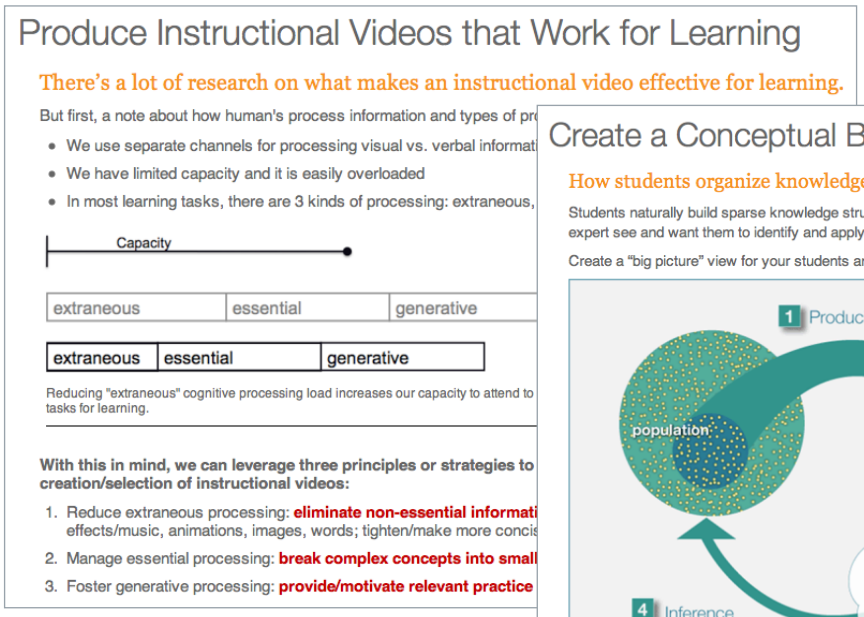
We spend time seeking out tools that will fill gaps and reduce common teaching and learning pain points, including:

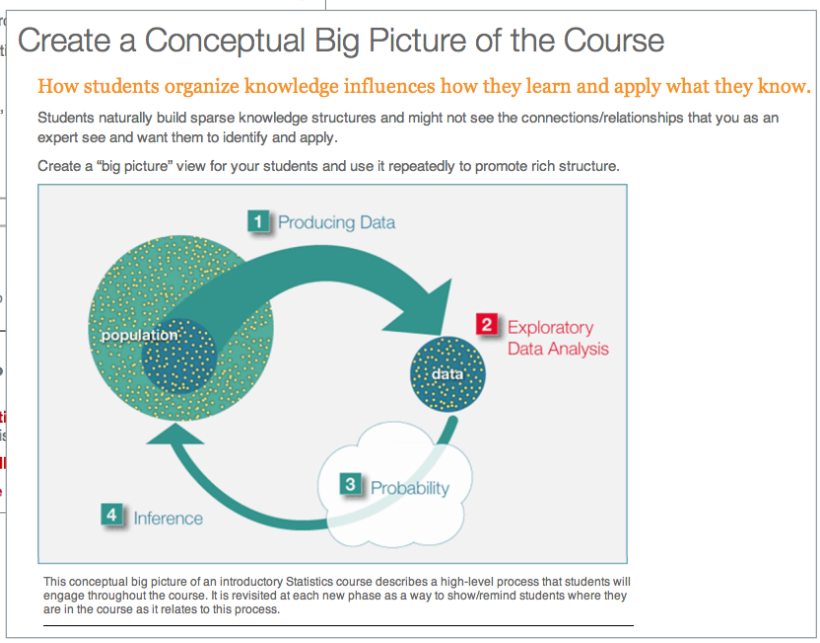
Providing students with sufficient targeted practice:

- Tools that provide students with opportunities for practice (e.g. Webassign problems, other currated content for providing supplemental practice)
- Technology environments that signal to students what they are doing right/wrong have potential to guide students' practice efforts. (e.g., feedback on quiz questions in Bb, inline assessments in OLI).

Providing timely feedback to students:

- Providing timely feedback is important for student learning and is sometimes difficult to do, especially in large classes and for written assignments. Instructors can use tools like Clickers, Turnitin or Blackboard's self and peer assessment tools to support this need.
- Crowdsourcing and responding to questions outside of class through Piazza.





Examples of how Eberly Center pulls from the research on learning and effective uses of technology and brings that to our faculty for application in designing and delivering their courses.

Compensating for expert blind spot:

- This well-documented teaching problem can be addressed by using technologies to unpack complex skills/tasks and make the component parts available to novices for practice and feedback. For example, OLI integrates the practice of defining learning objectives (LO) directly into the online course design process. The LOs are then mapped to related course activities. As students interact wth the course activities, data are collected and feedback is provided to both instructors and students about their learning. With the affordances of this technology and pedagogical guidance from Eberly consultants, faculty are in good hands for making their expertise accessible to novices.

Making grading of large class sizes more efficient:

- Managing grading of large classes via automated grading, use of rubrics, and peer review tools in *Blackboard*.
- Providing automated intermediate feedback to student on Computer Science programming assignments via *Autolab*.

Core applications we provide

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

- *Blackboard*, the university's learning management system, supporting 3136 courses, 1357 instructors, 94,409 student enrollments.
- *Open Learning Initiative,* the university's online course platform, supporting 46 instructors, 4230 student enrollments, 34 courses, 66 sections.
- *Clickers*, the university's classroom response system.
- *Turnitin*, a plagiarism and peer evaluation tool.
- *LTI connectors* to a variety of educational technology tools including: CMU's *Open Learning Initiative* courses, *Piazza*, *WebAssign*, *Panopto*, and more.

In AY2014-15, we provided design and development cycles to advance the Open Learning Initiative (OLI) environment.

We supported:
46 CMU instructors developing and using OLI courses;
34 courses;
4230 student enrollments in OLI courses.

Technology and the Pedagogical Design of Learning Spaces

Herb Simon's quote sums it up well... "Learning results from what the student does and thinks and only from what the student does and thinks. The teacher can advance learning only by influencing what the student does to learn."

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

New learning spaces should incorporate this new paradigm and leverage key themes coming out of the research on teaching and learning.

In AY2014-15, Eberly engaged in several key projects involving the design and evaluation of learning spaces including:

- Gates Citadel Clusters
- IDeATe (maker space)
- Steiner Studios, CMU-New York
- New Tepper Quad: several teaching and learning spaces including an instrumented *Teaching Lab Classroom* and an *Innovation Studio*

Integrating technology in ways that increase usability and decrease cognitive load promotes learning. The value delivered by technology in learning spaces must outweigh the cognitive cost of becoming proficient with that technology so that valuable time is not taken away from learning.

Immersive, authentic experiences promote transfer of learning. Working on real problems (or high-fidelity simulations) promotes students' motivation, and it gives them practice integrating and applying skills in complex situations. Building design should move beyond the notion of "classrooms" as the only sites for learning and make it easy and intuitive for students to access and share information, ideas, and tools with each other and with external partners, regardless of where they are.

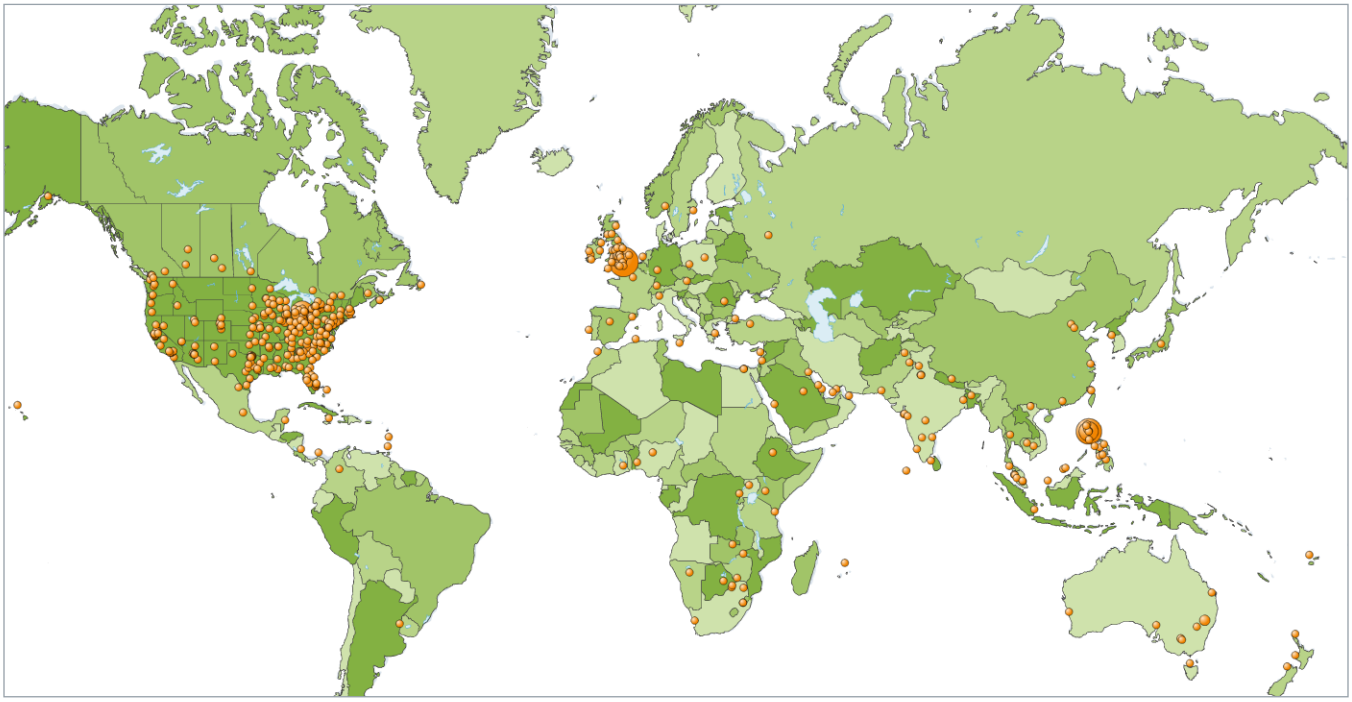
Instrumenting the learning process enables data-based improvement. When data are collected and analyzed in an automated manner, we gain efficiencies (e.g., teachers can target their time redesigning a course, students at risk can be identified before problems get serious, and administrators can learn about actual patterns of use of various instructional resources to make better allocations). Physical spaces facilitate this when they are instrumented so data are collected and aggregated.

Collaborative Teaching Cluster:
Eberly Center consultants observed classes being taught in the Collaborative Teaching Cluster and evaluated its effectiveness for teaching and learning.

A few insights: the configuration performs as designed in supporting both individualized and group work, as well as provides clear and sufficient pathways for the instructor to move freely throughout the space to observe up-close and respond to students' work during classtime. While the monitors situated on the desks might obstruct line-of-sight for some students, instructors can avoid this by presenting their instructional material on the wall monitors located near each table/grouping. The lectern control panel user interface offers a lot of control and as a result is a bit complex for some to operate at the same time they are focused on teaching; therefore, some instructors make sure to have a TA on hand to manage setup and swtiching between the various technology presentation options.

Annual Report
AY 2014-2015

Eberly Center Teaching Website Usage



	AY11-12	AY12-13	AY13-14	AY14-15
Pageviews	892,474	1,428,607	2,682,022	3,135,435
Visitors	341,820	608,841	1,386,828	1,696,208
Visits/Day	1,102	1,981	4,541	5,564

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 5 Most Viewed Areas of the Site

46% Assessment
31% Design & Teach a Course
11% Solve a Teaching Problem
7% Learning & Teaching Principles
3% Technology for Education

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 new 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 2014-2015 is listed below.

University Committee Service

Lovett
- Simon Initiative, Co-Coordinator
- ProSEED/Simon Initiative Grant Review Panel, Member
- Pittsburgh Science of Learning Center, Executive Committee, Member
- PIER Steering Committee, Member
- University Education Council, Member
- University Promotion & Tenure Committee, Member
- Ryan Award Committee, Chair
- Doherty Award Committee, Co-Chair
- Computing at Carnegie Mellon Advisory Committee, Member
- Digital Accessibility Working Group, Member
- MCS Core Education Committee (and Steering sub-committee), Member
- GCC Advisory Board, Member
- Academic Review Board, Committee Member
- TA Issues Working Group, Co-Chair

Hershock
- Academic Advising Award Commitee, Co-Chair
- Graduate Student Teaching Award, Chair
- Graduate Student Concerns Committee, Member
- Computer Science Department TA Committee, Member

Brooks
- Digital Accessibility Working Group, Member
- Course Capture Discovery Pilot, Eberly Lead
- MCS Non-Technical Core Education Committee, E-Portfolio Working Group, Member

Dwyer and Weiss
- Mellon College of Science, First-Year Undergraduate Seminar (EUREKA) Course Design Committee, members (and chairs of lesson planning subcommittee)

Ph.D. and Master's Thesis Committees

Lovett
- Iris Howley, Language Technologies, Ph.D. Committee Member (defense: August, 2015)

CMU Courses and Classes Taught

Lovett

- Spring 2015, Psychology, 85-715 *Graduate Research Methods*, required core course for Psychology graduate students

Hershock

- Fall 2015, Mellon College of Science, 38-801 *Evidence-Based Teaching in STEM*, graduate-level course on research-based teaching strategies and the science of learning applied to college-level STEM instruction

Brooks

- Spring 2015, School of Design, 51-396/796 Design Ethos & Action, Guest lecture on: *Dexign The Future*
- Fall 2014, School of Design, 51-387/787 Introduction to Dexign The Future, Guest lecture on: *Dexign The Future*

Richards

- Summer 2015, Computer Science, *Summer College Preview Program (CMU-Qatar)*, Project Course. High school juniors & seniors are introduced to computer science using robots.

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.

Publications

Ambrose, S. A., & ***Lovett, M. C.*** (2014). Prior knowledge is more than content: Skills and beliefs also impact learning. In V. A. Benassi, C. E. Overson, & C. M. Hakala (Eds.) Applying science of learning in education: Infusing psychological science into the curriculum. Retrieved from the Society for the Teaching of Psychology web site: http://teachpsych.org/ebooks/asle2014/index.php

Brooks, J. (2014). Wonder, Play, Learn: How Might Students Wonder and Play Their Way into Deep Learning. http://repository.cmu.edu/theses/70.

Dwyer, H., Jasieniuk, M., Okada, M, & Shapiro, A. (2015). Molecular evidence for hybridization in Colias (Lepidoptera: Pieridae): are Colias hybrids really hybrids? Ecology and Evolution, 5:2865-2877.

Ishizaki, S., Karatsolis, A., Rohrbach, S., Kaufer, M., & ***Lovett, M.*** (2015) Designing an online learning environment to support the development of rhetorical skills. Professional Communication Conference (IPCC), 2015 IEEE International.

Karatsolis, A., Ishizaki, S., ***Lovett, M.***, Kaufer, M., & Rohrbach, S. (2015) Practikon: An online practice environment to support the development of rhetorical awareness in technical communication. Proceedings of the 122nd Annual Conference of the ASEE. Seattle, WA: ASEE.

Remington, T., ***Hershock, C.***, Klein, K., Bleske, B., & Niemer, R. (2015). Lessons from the Trenches: Implementing Team-Based Learning Across Several Courses. Currents in Pharmacy Teaching and Learning, 7(1), 120-131.

Wright, M. C., McKay, T. ***Hershock, C.***, Miller, K., & Tritz, J. (2014). Better than expected: using learning analytics to promote student success in gateway science. Change: The Magazine of Higher Learning, 46(1), 28-34.

Awards

Eicholtz, Matt *(former Eberly Center graduate teaching fellow),* CMU Graduate Student Teaching Award (2014-15).

Richards, Meg, Science, Play and Research Kit (SPARK) Competition, Gordon and Betty Moore Foundation, Honorable Mention – Prototype Category: "Hexpods" (2014).

External Presentations, Seminars and Workshops

Dwyer, H. and Brooks, J. (2014). Communities of practice: strengthening institutions of higher learning. 39th Annual Professional & Organizational Development Network in Higher Education (POD) conference, Dallas, TX. November 2014.

Hershock, C. (2015). Evidence-based teaching strategies. Youngstown State University, Youngstown, OH. January 2015 [Invited keynote].

Lovett, M. C. (2014). Transforming how we teach and learn. World Economic Forum: Annual Meeting of the New Champions. Tianjin, China. September 2014. [invited IdeasLab presenter]

Lovett, M. C. (2014). Cognitively informed analytics to improve teaching and learning. Singapore Management University's Teaching Innovation Week, Singapore. September 2014. [invited keynote]

Lovett, M. C. (2014). Incorporating educational technology to improve students' learning. Singapore Management University's Teaching Innovation Week. September 2014.

Lovett, M. C. (2014). Leveraging technology for learning and learning science. IEEE International Professional Communication Conference. October 2014. [invited speaker]

Lovett, M. C. (2014). Learning science and pedagogical innovation in the humanities and social sciences. Reinvention Center, Washington, DC. November 2014. [invited panelist]

Lovett, M. C. (2015). Learning science for better learning. Annual Meeting of the Association of Independent Technical Universities, Clearwater, FL. January 2015. [invited keynote]

Lovett, M. C. (2015). Learning science for better learning. Training Tomorrow's Surgeon. UPMC, Pittsburgh, PA. March 2015. [invited talk]

Lovett, M. C. (2015). Learning engineering: Applying research and data to improve outcomes. MIT xTalk Cambridge, MA. April 2015. [invited talk]

Lovett, M. C. (2015). Technology-Enhanced Learning: Best Practices and Data Sharing in Higher Education. Association of American Universities Presidents Meeting. Washington, DC. April 2015.

Lovett, M. C. (2015). Cognitively informed learning analytics for multimedia instruction. Teaching and Learning with Multimedia, University of New Hampshire, Durham, NH. April 2015. [invited keynote]

Lovett, M. C. (2015). Learning science for better learning: The Simon Initiative. Café Scientifique at the Carnegie Science Center. Pittsburgh, PA. May 2015.

Lovett, M. C. (2015). Faculty roles and opportunities for educational innovation. Reinvention Center Vice Provosts' Annual Meeting. Pittsburgh, PA. June 2015.

Lovett, M. C. (2015). Deliberate Instruction: Applying principles of learning to enhance instruction. Society for Teaching and Learning in Higher Education, Vancouver, BC, Canada. June 2015. [invited keynote]

Lovett, M. C. (2015). Technology-Enhanced Learning: Best Practices and Data Sharing in Higher Education. Association of Public and Land-grant Universities Annual Meeting, Washington, DC. June 2015.

External Committees, Boards and Journal/Proposal Reviews

Lovett

- National Science Foundation, Review Panelist
- Review of Educational Research, Editorial Board Member & Reviewer
- Journal of Experimental Psychology: Learning, Memory & Cognition, Reviewer
- Singapore Ministry of Education, Tertiary Education Research Fund, Grant Reviewer

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

- Asistente Universidad de Concepción, Chile
- Don Bosco Institute of Technology, Mumbai, India
- Flinders University, Australia
- Fudan University, China
- National University of Singapore
- Singapore Institute of Technology
- Association of College and University Educators (ACUE)
- Carthage College
- NHL University of Applied Sciences, The Netherlands

AY2014-15 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
Judy Brooks, MDes, Director of Educational Technology & Design
Heather Dwyer, PhD, Teaching Consultant
Raphael Gachuhi, Software Engineer
Chad Hershock, PhD, Director of Faculty & Graduate Student Programs
Lorelei Hoover, Educational Technology Support Specialist
Michelle Pierson, Business Administrator
Meg Richards, Senior Systems Software Engineer
Katie Walsh, PhD, Teaching Consultant
Emily Weiss, PhD, Postdoctoral Teaching Consultant

Former:
Heather Marin, Blackboard Help Desk Support
Ruth Poproski, PhD, Teaching Consultant & Research Associate
Hilary Schuldt, PhD, Associate Director & Coordinator of Graduate Programs

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