Annual Report

Center for Teaching and Learning
Office of the Provost

2019-2020

CTL

COLUMBIA UNIVERSITY
IN THE CITY OF NEW YORK

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Our Mission

The Center for Teaching and Learning (CTL) partners with faculty, students, and colleagues across the University to support excellence and innovation in teaching and learning. The CTL is committed to advancing the culture of teaching and learning at Columbia through all of its programs, services, and resources.
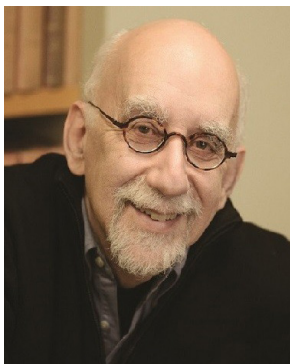
The CTL understands teaching as a critical practice, driven by inquiry, experimentation, reflection, and collaboration. We promote pedagogy that is inclusive, learner-centered, and research-based. We support the purposeful use of new media and emerging technologies in the classroom and online to foster the success of Columbia's instructors and students.

Our Vision

Our vision is a Columbia teaching community that innovates in evidence-based instructional practices and technology use, promotes and participates in the research on learning, and commits to creating inclusive and equitable learning environments.

Letter from the Provost

Ira Katznelson
Interim Provost

Dear Colleagues:

I am pleased to share with you the fifth annual report of the Columbia University Center for Teaching and Learning (CTL), an essential resource for the University's faculty, graduate instructors, and students.

The 2019-20 academic year, marked by the COVID-19 pandemic, presented an extraordinary challenge to Columbia's teaching community, as it did for higher education at large. Our instructors and staff demonstrated resilience, creativity, and empathy through the rapid transition to remote instruction.

This unprecedented turn has highlighted the CTL's contributions to the University. The staff's expertise in evidence-based strategies for online and hybrid teaching have been invaluable. Its programs and services continue to support the institution's commitment to excellence, innovation, and equity in teaching and learning.

This report offers a full account of the support the CTL provided during the transition to remote teaching in Spring 2020, as well as of the breadth of accomplishments in the preceding eight months. This work includes the use of new media and technologies in classrooms and online to foster the success of educators and students, the application of inclusive and equitable teaching strategies, and much more.

In this report, you will meet Columbians — graduate students, postdoctoral fellows, and senior faculty alike — drawing on the science of learning to transform how they teach, in partnership with the CTL. These educators include emerging scholars who take advantage of professional development programs to lay the foundations for successful careers among the professorial ranks. They also include established professors like the second cohort of Provost's Senior Faculty Teaching Scholars, announced in spring 2020. This group of senior faculty is working with CTL leadership to develop a year-long plan to strengthen the culture of teaching and learning within their schools and departments. Strong participation in these and other programs, as well as extensive partnerships with CTL staff, continue to affirm the value of the Center's important work.

As we navigate an unknown yet hopeful future, I look forward to the CTL's continued leadership in evidence-based teaching and learning strategies.

With appreciation,

Ira Katznelson
Interim Provost
Ruggles Professor of Political Science and History

Letter from the Vice Provost ———

Soulaymane Kachani
Vice Provost for Teaching,
Learning, and Innovation

Dear Colleagues:

This year, the Columbia Center for Teaching and Learning has transitioned from serving as an important resource for the teaching and learning community to functioning as an essential service of Columbia University.

Before, during, and after the transition to remote teaching in Spring 2020, the CTL provided teaching support on the individual, departmental, and school-wide level for faculty, graduate student instructors, and staff. Offerings included in-person and online workshops in both synchronous and asynchronous formats, ongoing Zoom drop-in hours, and a plethora of online resources and institutes to help faculty and graduate student instructors adapt to several teaching formats, best support their students, and prepare for the Fall 2020 semester.

In addition, the Office of the Provost facilitated several initiatives and events aimed at strengthening teaching and learning collaborations at Columbia. The annual Celebration of Teaching and Learning Symposium was hosted on February 18, 2020, at which the Provost welcomed over 250 members of the Columbia community to Low Library to celebrate the innovative efforts of faculty and graduate students in transforming their courses and pedagogies. This year's keynote speaker was Michelle D. Miller, Professor of Psychological Sciences and President's Distinguished Teaching Fellow at Northern Arizona University, and author of *Minds Online: Teaching Effectively with Technology* (Harvard University Press, 2014). We also hosted Provost's Conversations on Online Learning (PCoOL), a series of talks by leading experts on the future of education, specifically online learning. We welcomed founders and CEOs of OpenClassrooms, 2U, and edX as PCoOL speakers this year, and hosted our first virtual PCoOL

This year marked yet another impressive round of applications and awardees for Teaching and Learning Grants. Since 2014, the Office of the Provost has funded one hundred and sixty-nine grants involving faculty across all of Columbia's campuses to further enhance Columbia's learning environments for both teachers and students. There are many examples and more information on this year's projects in pages herein, as well as testimonials from faculty partners on their work with the CTL team.

I hope that the activities highlighted in this report will encourage you to meet our talented staff at the CTL, explore new ideas for your own teaching, and make new connections with a community of inspired teachers and learners at Columbia.

Sincerely,

Soulaymane Kachani
Vice Provost for Teaching, Learning, and Innovation

Letter from the CTL Executive Director

Catherine Ross
Executive Director of the Center
for Teaching and Learning

Dear Colleagues:

The Center for Teaching and Learning (CTL) collaborates with instructors, departments, and schools across Columbia's campuses to achieve the best teaching and learning experiences for instructors and their students. Our foundational value of inclusion undergirds all of the research-based, learner-centered, and reflective practices that we share with the teaching community at Columbia.

In this annual report, you will see highlights of our work across the broad spectrum of Columbia University's teaching and learning landscape. You will also see a new section dedicated to the incredible work that has happened as a response to the pandemic teaching conditions and the needs of instructors as they began to teach remotely. If there was ever a moment when every team and person in the CTL was called on to work together to support Columbia instructors, it was during this transition to remote teaching in mid-March. The CTL played an integral role in supporting instructors through this transition and we continue to work with university leadership and faculty partners to plan for the fall and spring semesters.

We owe many thanks to our collaborators in the Office of the Provost, in departments, schools, and partner administrative offices. The CTL has navigated a tumultuous year as part of a community dedicated to carrying on with teaching, described so eloquently by G. Gabrielle Starr in her June 1, 2020 piece in *The Chronicle of Higher Education* "After George Floyd's Killing, What Academics Can Do." She writes, "It is a small thing, in the larger scheme. Yet my work is to teach, to make it possible for others to teach, and learn, and grow. I will do this with ferocity in the coming months, for holding up that light of knowledge is something that, no matter how dark the night, is one of the best hopes for humanity."

We hope you find inspiration in these words and these pages, and we look forward to collaborating with you in the upcoming year.
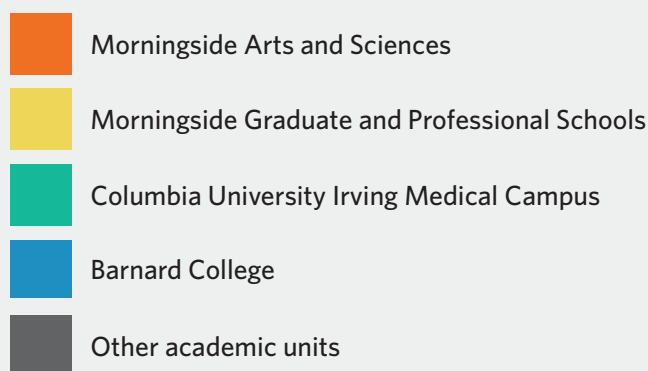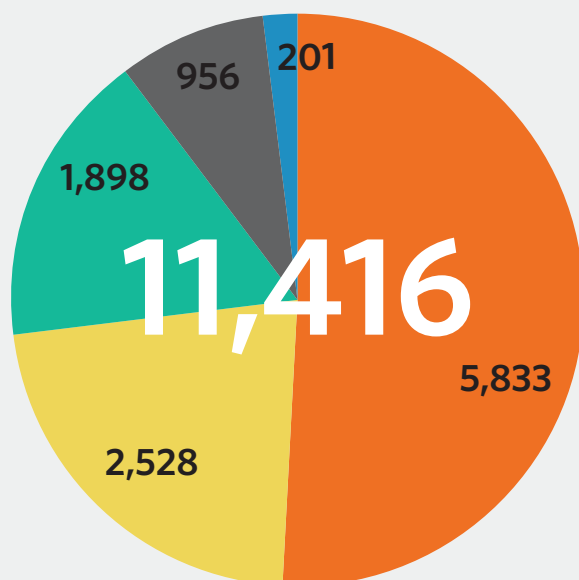
Sincerely,

Catherine Ross
Executive Director of the Center for Teaching and Learning

Annual Highlights

Interactions with Columbia-Affiliated Individuals

11,416

- 5,833
- 2,528
- 1,898
- 956
- 201

Legend:
- ■ Morningside Arts and Sciences
- ■ Morningside Graduate and Professional Schools
- ■ Columbia University Irving Medical Campus
- ■ Barnard College
- ■ Other academic units

Service to Columbia University

4,718 consultations and service interactions with Columbia-affiliated individuals

1,490 Columbia-affiliated participants in on-demand CTL courses

75 Graduate student fellows and teaching consultants

24 Projects awarded through the Provost's Teaching and Learning Grants

Service to Columbia University and Beyond

2,520,846 minutes watched
on ColumbiaLearn YouTube Channel

14,170 edX learners
that completed a Columbia MOOC course

259 Interactions with external visitors

41 CTL-developed software applications
with 258,889 users and 1,092,034 page views

Service to Faculty

- Total unique faculty served: **1,819**
- Total CTL interactions with faculty: **5,006**

Service to Graduate Students

- Total unique graduate students served: **1,274**
- Total CTL interactions with graduate students: **4,133**

Celebration of Teaching and Learning Symposium

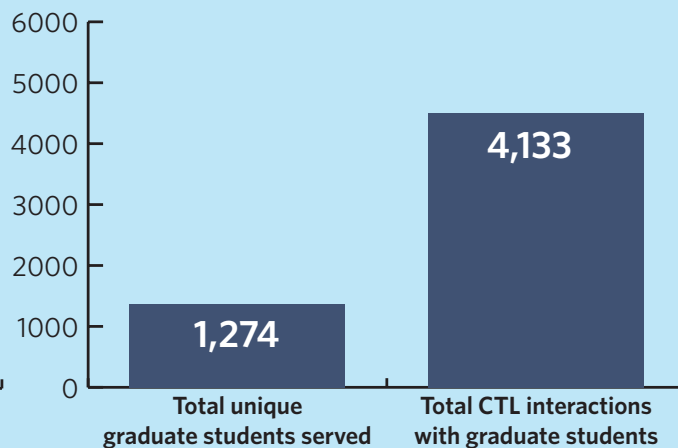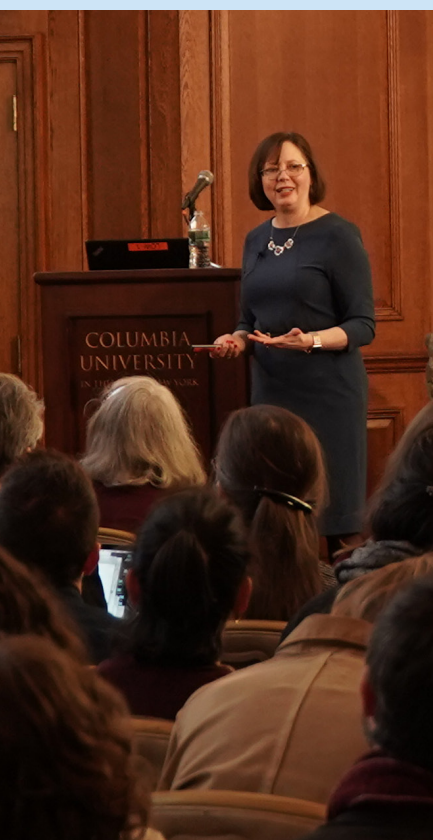The Office of the Provost and the Center for Teaching and Learning welcomed the Columbia community to Low Memorial Library for the Celebration of Teaching and Learning Symposium on Tuesday, February 18, 2020, to celebrate the ways that faculty and graduate student instructors are transforming their courses and pedagogies and impacting learning at Columbia. This year, over 250 participants attended the event, including attendees from 17 of the 20 Columbia schools and affiliates.

This year's keynote speaker was Michelle D. Miller, Professor of Psychological Sciences and President's Distinguished Teaching Fellow at Northern Arizona University, and author of *Minds Online: Teaching Effectively with Technology* (Harvard University Press, 2014). Dr. Miller's keynote, "Learning at the Intersection of Cognition, Motivation, and Technology: Fulfilling the Promise of Teaching with Technology" explored how we can leverage cognitive and motivational research to create technology-enhanced learning activities that make the most of how the mind works.

In addition to the keynote, the celebration included the Provost's announcement of the second cohort of the Provost's Senior Faculty Teaching Scholars, a faculty panel with two of the Provost's Innovative Course Design Grant awardees, and a reception and poster exhibition showcasing faculty, graduate students, postdocs, and staff who shared their teaching and/or curricular innovations, many of whom were also recipients of the Provost's Teaching and Learning Grants. For more details: **https://ctl.columbia.edu/about/cotl-2020/**

Michelle Miller delivers her keynote speech.

Recipients of the Provost's Teaching and Learning Grants, Wing Fu, Assistant Professor of Physical Therapy and **Vanessa Guida**, Lecturer and Course Co-Director, Undergraduate Writing Program at Columbia College, discussed the impact of redesigning their courses at the Celebration of Teaching and Learning Symposium.

Provost's Senior Faculty Teaching Scholars

The second cohort of the Provost's Senior Faculty Teaching Scholars was announced at the annual Celebration of Teaching and Learning Symposium on February 18th, 2020. Senior Faculty Teaching Scholars are outstanding teachers and well-respected researchers in their disciplines. In partnership with the CTL, the Scholars will have the opportunity to create a vision and plan for supporting, changing, and innovating the culture of teaching and learning within their own departments and schools as well as across campus. The cohort was designated in partnership with deans.

In partnership with the CTL, the Senior Faculty Teaching Scholars will choose from a range of teaching and learning initiatives including: building community among faculty through outreach; liaising and hosting events in the CTL; planning and facilitating disciplinary conversations, workshops, and/or panels; or proposing a project that has broad and sustainable impact on teaching and learning at Columbia that goes beyond a single course or curriculum. The leadership of the CTL will work with the Senior Faculty Teaching Scholars to develop a year-long plan that aligns their work with the needs of the Columbia teaching community.

Senior Faculty Teaching Scholars for 2020-2021

Sharon Akabas Institute of Human Nutrition, Vagelos College of Physicians & Surgeons	**Helen Lu** Department of Biomedical Engineering, Fu Foundation School of Engineering and Applied Science
Janis Cutler Department of Psychiatry, Vagelos College of Physicians & Surgeons	**Josef Sorett** Departments of Religion and African American and African Diaspora Studies, Social Science
Thomas Groll School of International and Public Affairs	**Weiping Wu** Graduate School of Architecture, Planning and Preservation
David Hwang School of the Arts	**Tian Zheng** Department of Statistics, Natural Sciences
Eleanor Johnson Department of English and Comparative Literature, Humanities	

The 2020-2021 cohort of the Provost's Senior Faculty Teaching Scholars with Interim Provost **Ira Katznelson**.

Thank-a-Prof Initiative

The CTL has run a Thank-a-Prof/Thank-a-TA initiative since the Spring 2019 semester to celebrate impactful teaching and learning at Columbia University and to recognize professors and TAs for their contributions. In the 2019-2020 academic year, students across departments and campuses submitted 851 thank you notes by hand or online to the CTL, and these were sent to the respective professors and TAs.

Sample thank you note from Fall 2019:

"Thank you for being such an inspiring, kind, and positive professor. I am a clinical student, but your class has made me rethink how I can make a difference in my community. I hope to have the opportunity to get involved with advocacy at a larger scale, and feel better equipped to do so because of your class. I'm so glad that I was able to have you as a professor. Thank you for all the wonderful classes and the opportunity to learn with you!"

– **Tori Guen**, Student, Columbia University School of Social Work (CSSW) '21 (writing to Jeanette C. Takamura, M.S.W., Ph.D., Dean Emerita and Professor, CSSW).

Professor's Response:

"I was blown away by the two notes received on the same day –Tori's note and one from a student from a year ago. While I hear regularly from former students, these notes through the Provost's Initiative were totally unexpected, deeply appreciated, and they reinforced my gratitude for the opportunity to learn along with our phenomenal students from all social work practice methods (policy, clinical, advanced generalist practice, and social enterprise administration) enrolled in my course. They are the future, and, like Tori, who received a prestigious fellowship recently, they deserve every opportunity to acquire the knowledge and skills that will enable them to advocate for and shape our national policies. The notes were at once humbling and re-energizing. Wow! Thank you!"

– **Jeanette C. Takamura**

Students read aloud their thank you notes.

Provost's Conversations on Online Learning

The Provost's Conversations on Online Learning (PCoOL) feature public talks by leading experts and peers on the future of education, specifically around online education.

This year's PCoOL series kicked off on October 17, 2019 with Chip Paucek, co-founder and CEO of 2U, Inc., discussing 2U's vision for online education and the future of higher education.

View recording of presentation:

https://online.columbia.edu/announcements/2u-online-education/

On January 31, 2020, Pierre Dubuc, co-founder and CEO of OpenClassrooms, discussed the company's mission to make quality education and career advancement more accessible and affordable.

View recording of presentation:

https://online.columbia.edu/announcements/openclassrooms-pcool/

On April 28, 2020, edX CEO and MIT Professor Anant Agarwal reflected on online education in the new normal of COVID-19, discussing changes he has observed and sharing insights on how it has impacted and expedited his vision for the future of modular education.

View recording of presentation:

https://online.columbia.edu/announcements/edx-pcool/

Soulaymane Kachani, Vice Provost of Teaching, Learning, and Innovation, interviews **Pierre Dubuc**, co-founder and CEO of OpenClassrooms.

CTL Response to COVID-19

Just as the Spring 2020 semester was gaining momentum, the CTL, like everyone else, had to quickly pivot to planning and implementing the switch to remote teaching. Efforts spanned a full range of teaching support: individual, departmental, and school-wide offerings for faculty, graduate student instructors, and staff; in-person sessions and both synchronous and asynchronous online sessions and workshops; self-paced options and ongoing Zoom drop-in hours. These activities are detailed below. While the work did sometimes feel overwhelming, it was an honor to have been able to serve the Columbia community in this time of disruption.

Support for Morningside Faculty

Sessions and Consultations

The CTL responded immediately to help support the Columbia University teaching community during the transition to online teaching. The morning after President Bollinger's announcement that classes would be facilitated remotely, the CTL Faculty Programs and Services (FPS) team led the first of many joint CTL-CUIT sessions which were offered to hundreds of faculty members and administrators across the university. In addition to these group sessions, the CTL immediately began to offer one-on-one support for faculty both in-person (initially) as well as on Zoom (through the semester).

On-Demand Resources

While the support sessions were critical in the earliest moments of the transition, the CTL also had to quickly pull together on-demand online resources that would be readily accessible to all instructors regardless of time and physical location. A wealth of on-demand resources was released — everything from Teaching with Zoom to Inclusive Teaching and Learning Online (see "Resources for Teaching Online" section below) — which faculty can access on the CTL website as soon as they need them.

Online Programming

The FPS team also transitioned CTL Institutes, Intensives, and Workshops To Go to online or hybrid formats for the Summer and Fall 2020 semesters, offering strategies and best practices for online or hybrid instruction and facilitating faculty conversations about adapting a face-to-face course for a virtual environment.

FPS Director **Amanda Irvin** leads a session with Arts & Sciences faculty on transitioning to remote teaching on March 9, 2020.

Support for CUIMC Faculty

Office Hours and Consultations:

The CUIMC CTL office also began offering daily in-person sessions and eventually, fully virtual Zoom office hours in early March 2020 to help faculty prepare for remote instruction. The office hours were crucial for the transition to online instruction and continue to be a resource for instructional support. Additionally, they have helped introduce new faculty to the CTL and planted seeds for new partnerships.

Requests from faculty included technical and pedagogical support: from basic functionalities of Zoom to online tools and strategies for keeping students engaged, as well as how to appropriately record and post lectures.

School and Department Level Support

At the school and departmental level, the CTL established a protocol for centrally managing both Zoom Pro accounts and class scheduling within CUIMC. The CTL partnered with CUIT to develop and implement this centralized model, met with administrative staff for each school (Mailman, VP&S, Dental and Nursing) to introduce the protocol, and supported the CUIT training for faculty. After creating documentation and facilitating training sessions, the CTL and CUIT provided troubleshooting support.

HIPAA-Compliant Zoom

Ensuring that video conferencing tools and protocols were HIPAA-compliant was among the biggest challenges for the medical campus. Zoom initially was not HIPAA-compliant and CTL staff worked tirelessly with CUIMC-IT and CUIT to implement a HIPAA-compliant Zoom sub-account and successfully did so in four short weeks.

Dean of Students COVID-19 Committee

CTL staff collaborated with education leadership at CUIMC to plan the campus's response to remote teaching and learning. One outcome of the CTL's participation in this committee was the development of a remote assessment guide. The CTL encouraged a model which includes remote unproctored exams and readministering of the student honor code. Examsoft was the primary supported tool for these remote assessments.

Post-COVID Recovery Task Force on Education

The CTL continued working with CUIMC leadership on two subcommittees reporting to the Post-COVID Recovery Task Force on Education. The Subcommittee on Best Practice for Online Teaching and Learning's charge was to develop specific guidance on best practices to convert in-person courses to a distance learning format in the event that courses need to be delivered via distance learning during the coming year and to review and identify CUIMC resources that would be needed to optimize education delivery. The Simulation and Lab Activities Subcommittee developed guidelines for delivering virtual simulations and for adapting patient encounters and science labs to allow for social distancing.

Preparing to Teach (Large) Classes Online

The CUIMC team also developed a custom workshop, launched in May 2020, to prepare CUIMC faculty to teach Summer and Fall 2020 courses. Topics included: (1) how to adapt your course for online instruction and (2) best practices for using online tools including Zoom, Courseworks, Panopto, and Poll Everywhere.

Support for Graduate Student Instructors

Starting in February 2020, the CTL's Graduate Student Programs and Services (GSPS) team began moving all workshops, seminars, fellowship activities, and teaching observation services online so that there was no interruption in the semester's activities. Participation counts in the newly online offerings rose in many programs, as graduate students worked with GSPS staff and each other to rise to meet the new challenges and opportunities entailed with teaching online.

TA and Instructor Support

GSPS instituted office hours for graduate students via Zoom, and created guidance for TAs on adapting instruction and office hours to online platforms. The number of individual consultations for graduate students in March 2020 rose almost 300% over March 2019, as GSPS staff helped graduate students adjust their teaching and professional development on a number of fronts.

Online Programming

Workshops, learning communities, and seminars for graduate students were moved online, resulting in jumps in registration. An online version of the Evidence-

Based Teaching in Science and Engineering seminar, for example, enrolled 44 in Spring 2020, up from 18 in Spring 2019. Journal Club sessions, which focused on literature about online teaching, also saw expanded enrollment.

Online Services

GSPS trained graduate student Teaching Consultants to run teaching observations, mid-course reviews, and microteaching practice sessions for graduate students online. All three services continued uninterrupted during Spring 2020.

Fellowship Support

GSPS helped Lead Teaching Fellows design and produce workshops for peers in departments that provided introductions to online teaching techniques and considerations. Teaching Observation Fellows shifted peer and faculty teaching observations to online classes. Teaching Assessment Fellows ran tutorials in assessment techniques for each other online and continued to consult on faculty projects over Zoom.

Instructional Technologies

The CTL Instructional Technologies group was instrumental in developing, supporting and implementing many of the in-person and online sessions, resources, and systems listed above, utilizing their expertise in media production and software development and design.

The Instructional Technologies group helped prepare, record, and bring online several contingency planning sessions with faculty as well as new instructional videos on teaching online with CourseWorks, Zoom, and Panopto. This work included research on the technology capabilities of Zoom and Panopto for internal and external use. One-on-one faculty support for using these technologies was also provided. The Instructional Technologies group provided guidance for the logistical use of virtual spaces for remote consultations and events that CTL staff ran with Columbia instructors.

Lastly, the group provided all CTL staff support with the infrastructure, internal documentation and communication, and training necessary to transition successfully to working remotely.

Resources for Teaching Online

The CTL developed the following online resources during the Spring 2020 semester to support Columbia instructors transitioning to online teaching. They can be found at ctl.columbia.edu/teachingonline.

Getting Started: Tools for Teaching Online

Teaching with CourseWorks

How to set up discussions, take attendance, create and grade assignments, and create online exams and quizzes using CourseWorks, Columbia's online learning management system.

Teaching with Panopto

Guidelines on how to use Panopto to securely host a variety of media to share with students, including uploading and recording video. This CourseWorks-

739 consults with Columbia-affiliated individuals in response to the remote learning transition between March 1st and March 31st

- Morningside Arts and Sciences — 418
- Morningside Graduate and Professional Schools — 151
- Columbia University Irving Medical Campus — 93
- Other Academic Units — 77

CTL Lead Teaching Fellow **Tomer Yavetz** leads a virtual event for fellow graduate students.

integrated tool supports in-video quizzes, video editing, screen captures, and more.

Teaching with Zoom

Guidelines for establishing a Zoom account, scheduling class sessions, hosting a class, taking attendance, and additional tools in Zoom.

Zoom Security and Privacy

An overview of Zoom settings and tools to help keep unwanted external participants from entering the class space and for managing disruptive participants.

Teaching with Technology: Going Deeper

Creating Online Exams

An overview of CourseWorks tools, options, and settings that can help implement exams efficiently and fairly and make the exam experience positive for both instructors and students.

DIY Video Production Essentials

Advice for video set up, recording, editing and publishing, including technical considerations for creating active and engaging classroom experiences using video.

Virtual Office Hours

An overview of Zoom and CourseWorks Conferences (BigBlueButton) capabilities for online office hours.

Pedagogical Strategies for Teaching Online

Adapting Your Face-to-Face Course to a Fully Online Course: A Guide

Suggestions for adapting the design of a face-to-face course by focusing on online capabilities, the intentional integration of technology, and emphasizing learner-centered and inclusive practices.

Asynchronous Learning Across Time Zones

Tips for setting up an online course that gives students and instructors the flexibility to engage with course material, activities, and each other from anywhere and at any time.

Five Strategies for Active Learning Using Zoom

Simple strategies that combine active learning principles with online tools to promote student access and engagement with content, facilitate sharing of ideas, and encourage reflection on learning.

Graduate Student TAs: Adapting Your Teaching

Resources that graduate student instructors can draw on to stay connected to students and maintain learning in classes in which they are acting as Teaching Assistants.

Inclusive Teaching and Learning Online

Strategies for inclusive online teaching structured around the five principles of inclusive teaching as outlined in the Guide for Inclusive Teaching at Columbia.

Hybrid & Online Teaching Institute for Faculty

To prepare Columbia faculty for the Fall 2020 semester, the CTL developed the Hybrid & Online Teaching Institute: a new online offering that guides faculty through adapting their courses to online, hybrid, or face-to-face formats. The institute consists of asynchronous, on-demand content hosted in CourseWorks followed by a synchronous online experience with CTL staff and other faculty participants. Together, these provide faculty with a comprehensive toolkit they can apply to their own course context whether this may be a seminar, small lecture, or large lecture class.

Asynchronous Module Topics	Live, Synchronous Session
Adapting Your Face-to-Face Class for Online: First Steps	• Discuss asynchronous content and share ideas and strategies with colleagues.
Welcoming Students to Online Learning and Creating Community	• Experience assessment tools.
Engaging Students in Active and Collaborative Learning Online	• Engage with a mini-case study based on Spring 2020 student feedback.
Assessing Student Learning Online	• Discuss applying strategies to different class formats.
HyFlex Essentials	

Format of Hybrid & Online Teaching Institute for Faculty

17,078 pageviews on pages related to teaching with technology on the CTL website from March 1, 2020 - March 31, 2020

2,186 views on ColumbiaLearn YouTube videos from March 1, 2020 - March 31, 2020

With spaces closed, the CTL was able to quickly and successfully pivot to planning and implementing the switch to remote teaching.

Provost's Teaching and Learning Grants

The Office of the Provost provided funding opportunities through four grant programs for faculty interested in integrating new educational methods and technologies into their classrooms and learning environments. The CTL provided logistical, organizational, and instructional support for faculty awarded funding from the Office of the Provost. (For more details on the CTL's involvement in the Provost's Teaching and Learning Grant projects, see page 60 in the Instructional Technologies section.)

Innovative Course Design Grants

The Office of the Provost's Innovative Course Design Grants provided faculty with funds of up to $20,000 and support from the CTL to develop innovative pedagogies and technology-rich learning strategies for Columbia courses.

SPRING 2020 AWARDEES

Below is the list of projects that will be developed and released in the 2020-2021 academic year with support or advice from the CTL.

Dana March-Palmer, *Assistant Professor of Epidemiology and Associate Dean for Educational Initiatives*
PROJECT: "Redesign for Student Mastery and Success in Research Methods: Quantitative Foundations (PUBHP6031)"

Nataliya Pilipenko, *Assistant Professor in Medicine and Psychiatry*
PROJECT: "Clinical Interviewing in Primary Care Settings"

Beth Barron, *Associate Professor of Medicine, CUIMC*
PROJECT: "Self-Directed Learning Resources for Clinical Skills"

Denise Cruz, *Associate Professor of English and Comparative Literature*
PROJECT: "Reimagining the Humanities Lecture in a Transnational, Post-Pandemic World"

Yevgeniy Yesilevskiy, *Professor and Chair of Mechanical Engineering* **Jeffrey Kysar**, *Lecturer of Mechanical Engineering*
PROJECT: "Introducing Experimental Design to Promote Active Learning"

Alexandra Watson, *Lecturer, First-Year Writing / English*
PROJECT: "Room to Improve: Digital Tools for Measuring Student-Writer Growth"

Isobel Contento, *Mary Swartz Rose Professor of Nutrition and Education* **Pam Koch**, *Associate Research Professor of Nutrition*
PROJECT: "Facilitating Students Learning the Processes of Designing Effective Environmentally Supportive Nutrition Education"

Ansaf Salleb-Aouissi, *Senior Lecturer in the Discipline of Computer Science* **Nakul Verma**, *Lecturer in the Discipline of Computer Science*
PROJECT: "A Fast and Effective AI Approach for Student Feedback in Proof-Based CS Courses"

Rym Bettaieb, *Lecturer in Arabic*
PROJECT: "Shahid Listening Website"

Christopher Tedeschi, *Associate Professor of Emergency Medicine, CUIMC*
PROJECT: "Wilderness, Environmental and Disaster Medicine: Reimagining an Austere Medicine Curriculum"

Ovita Williams, *Associate Director of Field Education/ Adjunct Lecturer, School of Social Work* **Courtney Cogburn**, *Associate Professor of Social Work* **Ericka Echavarria**, *Associate Director of Field Education, Adjunct Professor, School of Social Work* **Jaime Estades**, *Adjunct Professor of Social Work*
PROJECT: "Five Sessions: Practice Dynamics of Power, Race, Oppression, and Privilege Through Simulation Based Learning"

Karol DiBello, *Assistant Professor, School of Nursing*
PROJECT: "Flipped Classroom Redesign Proposal. Care Coordination. 2020"

Faculty Spotlight:

Yi Zhang, 2019 Innovative Course Design award recipient, *Associate in the Discipline of Industrial Engineering and Operation Research (IEOR)*

Yi Zhang worked closely with the CTL to redesign his course, Simulation, a core course for graduate students receiving their MS in Operations Research and MS in Industrial Engineering in the IEOR Department.

On the main challenges of the previous iteration of his course...

Yi: Due to the large class size, it is difficult for me to monitor the progress of each student and to offer immediate help. From the student perspective, they were not receiving valuable feedback while they were implementing their problem-solving process and had long waiting periods before receiving help.

On the auto-grading intervention and how it enhanced the student learning experience...

For this project, we developed an immediate feedback system by incorporating auto-grading features into the lectures and making students the primary users of these features. When working on the in-class exercises, a student can submit their work electronically. The script will then run their response through various checkpoints to give them graded marks and provide individualized feedback [...] Students can then try to learn from the feedback and then correct their mistakes and submit their answers again. On the instructor side, I am able to observe the progress of the students. It is important for me to know where the students stand and adapt my teaching to student needs during the lesson.

On the results...

Students were very excited about the auto-grading features and were able to use these features effectively to improve their work. Based on our assessment, students with access to the auto-grading features were more confident in the subject matter. Across two lectures, students were assigned to either normal Python-based feedback (NIF) or the auto-grading feedback tool (IF-AT), so that half of the students were in the NIF condition in the third lecture and half of the students were in the auto-grading condition in the fourth lecture. From our objective measurement, we observed that students with access

"

to the auto-grading features received a grade that was 30-50% higher on average than those who did not. (All differences were statistically significant with p values < 0.015.). See Figure 1.

On the CTL support and collaborative team effort...

This project was an exhibition of great teamwork. Michael Tarnow, Learning Designer of Science and Engineering at the CTL, was very involved in the whole pipeline of the project. This project greatly benefitted from his expertise in educational technology and his valuable insights into pedagogical practices. During the proposal stage, I received valuable feedback from Jessica Rowe, the Associate Director for Instructional Technology at the CTL. During the assessment stage, I worked closely with Melissa Wright, the Associate Director of Assessment and Evaluation at the CTL and Megan Goldring, Ph.D. student in Psychology and CTL Teaching Assessment Fellow.
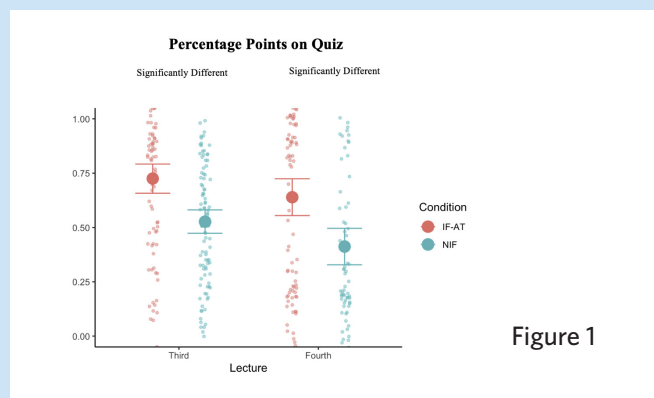
For the full spotlight: **https://ctl.columbia.edu/announcements/faculty-spotlight-yi-zhang/**

Figure 1

Faculty Spotlight:

Alfredo Spagna, 2019 Innovative Course Design Recipient, *Lecturer in the Discipline of Psychology and Director of Undergraduate Studies in Neuroscience and Behavior*

Eunjoo Byeon, *Course Developer, Student, School of Professional Studies*

Alfredo Spagna and Eunjoo Byeon worked with the CTL to design the new course Fundamentals of Human Neuropsychology with a blended learning approach to create a class environment that closely resembles a real-world research setting where collaboration and cooperation are key to discoveries.

On the blended learning approach and what activities and strategies have been helpful for student learning...

Alfredo and Eunjoo: We wanted to encourage students to develop their own knowledge base and to apply it to collectively solve problems. Therefore, we replaced the conventional in-class lecture with online learning of the most important material from the textbook, which students watched outside of class. This freed our in-class time for small and large group discussions as well as for individual activities. The online activities laid the groundwork for in-class activities, and involved watching short video lectures with transcripts and timestamps, answering quizzes on that week's content, and reading literature and classic neuropsychology case studies.

In-class activities we developed include various active learning components that can be flexibly adapted and incorporated. Such activities include using Poll Everywhere, the Audience Response System that prompts knowledge-based questions, group discussions about the case-study assigned for that week, and interactions with guest speakers working in the related field of neuropsychology.

Having a combination of ways to engage with the course material and ideas has been beneficial for students with different strengths and learning preferences, and has given all students a chance to be included. One benefit of such a modular approach is that we can review student performance and progress each week and for each activity. This allowed us to continuously adapt and improve our class, and to identify areas that we should spend more time on.

On how the course has been affected by the transition to remote learning due to COVID-19...

Alfredo and Eunjoo: The way we thought about the course in general was so flexible that we could really re-imagine how things worked [online] immediately. You can do Poll Everywhere, you can do discussion, you can watch a video; you can change everything on a day-to-day basis. Most of the content is asynchronous and then class time is used for the higher-level work that the students enjoy.

Compared to the other classes I was teaching, this one has given me the least stress [in the transition to remote teaching]. Because I knew that the textbook content was covered in the online portion, I didn't have to worry that my students weren't going to learn anything because of the current situation. Another thing that has gone smoothly with the transition is administering our assessments. Because the focus shifted from testing textbook knowledge to discussions and higher-level problem solving, we are less concerned about trying to control academic integrity. It's difficult to cheat on the exams because they're geared toward higher-level and critical thinking abilities. And we already have a measure of basic recall through the knowledge checks online and Poll Everywhere questions in class. We know what they know.

For full spotlight:

https://ctl.columbia.edu/announcements/ faculty-spotlight-alfredo-spagna/

Below is the list of faculty who released courses in the 2019-2020 academic year with support or advice from the CTL.

Fall 2019 Courses

Huiming Yin, *Associate Professor of Civil Engineering and Engineering Mechanics*
PROJECT: "Design and Development of a New Hybrid Learning Course of Energy Harvesting"

Kathy Shear, *Marion E. Kenworthy Professor of Psychiatry in Social Work*
PROJECT: "Developing Students' Clinical Skills via the Use of Scripted Realistic Client-Therapist Videos for Targeted Fine-Grained Practice and Meaningful Instructor Feedback and Coaching"

Yi Zhang, *Associate in Discipline in Data Science and Operations Research*
PROJECT: "Adopting Immediate Feedback Assessment Technique (IF-AT) for Computational Subjects"

Spring 2019 Courses

Alfredo Spagna, *Lecturer in the Discipline of Psychology*
PROJECT: "Do's and Don'ts in Cognitive Neuroscience: Promoting Critical Thinking using a Hybrid Neuropsychology Course"

Barbara Spinelli, *Senior Lecturer in Italian*
PROJECT: "Hybrid Learning and Multilingualism: Re-Designing an Introductory Italian Course for Plurilingual Speakers"

Pallavi Utukuri, *Assistant Professor of Radiology*
PROJECT: "Re-Imagining Radiology Education: An Interactive Blended Learning Approach to Radiology Education Using the Flipped Classroom Pedagogy"

Glenn Denning, *Professor of Professional Practice in International and Public Affairs*
PROJECT: "Global Food Systems - Hybrid Course Learning, Course Redesign and Delivery Proposal"

Martina Pavlicova, *Associate Professor of Biostatistics*
PROJECT: "Creating Online Version of the Course to Target the Broad Audience and Implementing Team Based Learning"

Nina Alvarez, *Assistant Professor of Journalism* **Ofelia Mangen,** *Educational Designer and Technologist, School of Journalism* **Amy Singer**, *Adjunct Faculty, School of Journalism*
PROJECT: "Video Newsroom: Meeting the Needs of a New Generation and a Changing Media World"

Innovative Course Module Design Grants

The Innovative Course Module Design Grants provided support to faculty who are interested in experimenting with one new pedagogical strategy or tool. Recipients received in-kind support from the CTL and up to $2,000 for a one semester period..

Below is the list of projects that will be developed and released in the 2020-2021 academic year with support or advice from the CTL.

Helen de Pinho, *Assistant Professor of Population and Family Health*
PROJECT: "Digital Instruction for Public Health Opinion Writing in the MPH Core Curriculum"

Natalie Voigt, *Assistant Professor, School of Nursing*
PROJECT: "Increasing Student Critical Thinking Through Case-Based Learning Modules in Medical Surgical Nursing Education"

Zhongqi Shi, *Senior Lecturer, East Asian Languages and Cultures*
PROJECT: "Exploring the Impact of Academic Podcasting on Foreign Language Learning"

Sara Kross, *Lecturer in Discipline, Director of the Master's Program, Ecology, Evolution & Environmental Biology (E3B)*
PROJECT: "Conservation in the City: Exploring Topics in Conservation Biology Through Problem-Based Learning in New York City Parks"

Fajardo Guadalupe Ruiz, *Senior Lecturer, Latin American and Iberian Cultures*
PROJECT: "The Columbia Corpus of Spanish Conversations: 7 New Clips"

Beth Hochman, *Assistant Professor of Surgery, Vagelos College of Physicians & Surgeons*
PROJECT: "Surgical Applications of Point of Care Ultrasound Course for Medical Students on Surgery Clerkship"

Victoria Malaney-Brown, *Director of Academic Integrity, Columbia College and Fu Foundation School of Engineering and Applied Science*
PROJECT: "Academic Integrity Pre-Arrival Tutorial

Faculty Spotlight:

Martina Pavlicova, Innovative Course Design Award
Recipient, *Associate Professor of Biostatistics, Mailman
School of Public Health*
Cale Basaraba,, *MPH, Ph.D. student in Epidemiology*

Martina Pavlicova and Cale Basaraba worked with the
CTL to redesign the course Applied Regression I, offered
to MPH and PhD students at the Mailman School of
Public Health. They redesigned the course to 1) address
students' disparity of foundational knowledge when
entering the course and 2) allow for more time during
class for in-depth learning of SAS, the main statistical
software used in the course

On flipping their classroom to improve student learning...

Martina and Cale: Previously, the structure of the
course provided only a short and basic introduction of
SAS, requiring students to primarily learn the software
without direct instruction, which resulted in a shallow
understanding of SAS. Additionally, the first three
lectures in the course originally provided a partial review
of materials that students had been exposed to in past
courses. However, because students come from a variety
of different backgrounds and departments across MSPH,
their foundational knowledge varied.

To address these issues, a flipped classroom approach
was implemented: the first three lectures of the course
were made into short videos that students watched
outside of class, and during the actual class time, this
material was summarized and reviewed with direct
application to SAS and a modified team-based learning
approach. The re-focused in-class portion of the course
allowed for a more in-depth introduction and use of SAS
by application to real-life statistical problems. The videos
provided to students were also enhanced by hotspots and
quiz problems that allowed students to personalize their
viewing experience, and either skip sections on which
they were already knowledgeable, or return and review
sections that contained new information for them.

On working with the CTL...

Martina and Cale: Working with the CTL and Learning
Designer Jason Guzman has been a dream come true. He
assembled a very strong team to help us implement our
ideas and achieve our pedagogical goals. By engaging CTL
assessment experts Melissa Wright, Associate Director
of Assessment and Evaluation, and Karin Christiaens,

Ph.D. Candidate in the Department of Art History &
Archaeology and CTL Teaching Assessment Fellow, we
gained valuable perspective and assistance in evaluating
the changes made to the course this semester. They were
able to organize and run focus groups with students,
design pre-course and post-course questionnaires,
and help us with the overall redesign of the course.
Throughout the process, Jason's technical expertise and
support was crucial in creating the hotspot videos and
hosting them on a university platform..

On the ease of transitioning online due to COVID-19...

Martina and Cale: The blended or "flipped" classroom
format—with self-paced video lectures and more
interactive classroom activities—also allowed for a
smoother transition to remote teaching and helped
students stay engaged online. In the CTL-led focus
groups for this course, students offered insights into
how the course supported their transition. One student
summarized their experience as follows:

*"Of all my classes this is one that has transitioned online the
best and the easiest. I've come up with a bunch of theories
about why, and it was already one of the better taught and
more thoughtfully taught classes, and so [. . .] there's a
reason why we're continuing with these quizzes, and going
into break-out groups, [. . .] and it's still highly interactive
even though it's a 100 person class. We had already set up
really good classroom norms and expectations—not formally,
but through being in class and so everyone knew that those
expectations still stand."*

Martina Pavilcova leading a discussion with her Applied Regression I
students.

Below is the list of faculty who released projects in the 2019-2020 academic year with support or advice from the CTL.

Fall 2019 Courses

Scott Banta, *Professor of Chemical Engineering* **Christopher Chen**, *Adjunct Assistant Professor of Chemical Engineering; Senior Assistant Director, Columbia Center for Teaching and Learning*
PROJECT: "Development of a Case & ARS Question Database for Introduction to Chemical Engineering"

Helen de Pinho, *Assistant Professor of Population and Family Health*
PROJECT: "Digital Instruction for Public Health Policy Advocacy"

Ana Maria Kelly, *Assistant Professor of Nursing*
PROJECT: "Implementing Case-Based Learning Through Technology into Medical-Surgical Nursing Education"

Spring 2020 Courses

Keri Bertino, *Adjunct Assistant Professor, Writing*
PROJECT: "Polyphonic Teaching for Polyphonic Texts"

Massive Open Online Courses (MOOCs) Grants

The Office of the Provost's Massive Open Online Courses (MOOCs) Grants provided faculty with funds of up to $25,000 and support from the CTL to develop innovative online courses. MOOC instructors partnered with the CTL on course design, media production, and course delivery.

Below is the list of MOOCs that will be developed in the 2019-2020 academic year with support or advice from the CTL.

Marni Sommer, *Associate Professor, Sociomedical Sciences* **Margaret Schmitt**, *Project Director, Gender, Adolescent Transitions and Environment (GATE), Mailman School of Public Health* **Caitlin Gruer**, *Program Manager, GATE*
PROJECT: "Menstruation in a Global Context: Addressing Policy and Practice"

Sheena Iyengar, *S. T. Lee Professor of Business, Graduate School of Business* **Harry West**, *Professor of Professional*

Practice in the Department on Industrial Engineering and Operation Research
PROJECT: "Think Bigger MOOC"

The MOOCs below were completed and released in the 2019–2020 academic year with support from the CTL.

VET 101: Supporting Student Veterans in Higher Education
R.J. Jenkins, *Curriculum Design Specialist, Center for Veteran Transition and Integration*

Protection of Children in Humanitarian Settings
Hanna-Tina Fischer, *Instructor in the Program on Forced Migration and Health* **Mark Canavera**, *Co-Director of the Care and Protection of Children (CPC) Learning Network* **Mike Wessells**, *Professor in the Program on Forced Migration and Health*

Large-Scale Teaching and Learning Grants

The Large-Scale Teaching and Learning Grants supported efforts around teaching initiatives and exploration at the school, department, or program level. Awards provided up to $20,000 per academic year plus in-kind CTL support. Below is the list of projects that will be developed and release Below is the list of projects that will be developed and released in the 2020-2021 academic year with support or advice from the CTL.

Below is the list of projects that will be developed and released in the 2020-2021 academic year with support or advice from the CTL.

Larry Jackson, *Associate Dean of Academic Affairs, Core Curriculum and Undergraduate Programs*
PROJECT: "Developing an Interactive Teaching Library for the Columbia College Core Curriculum Using CourseWorks"

Caroline Marvin, *Lecturer in the Discipline of Psychology* **Trisha Lindemann**, *Lecturer in the Discipline of Psychology* **Kevin Ochsner**, *Professor of Psychology*
PROJECT: "Refining Goals and Redesigning the Flagship Introductory Psychology Course: Fostering Engagement for Deeper, Longer-Lasting Learning"

Matthew Perzanowski, *Associate Professor of Environmental Health Sciences*
PROJECT: "MSPH School-Wide Teaching Assistant Training"

Susan Witte, *Professor of Social Work* **Karma Lowe**, *Assistant Dean, Diversity, Equity & Inclusion* **Desmond Patton**, *Associate Professor of Social Work; Associate Dean for Curriculum Innovation and Academic Affairs* **Monique Jethwani**, *Lecturer; Assistant Dean of Faculty Development* **Courtney Cogburn**, *Associate Professor, DSW Developer & Evaluator* **Jalana Harris**, *Lecturer, DSW Co-Convener and Instructor* **Zuleka Henderson**, *Lecturer, DSW Instructor* **Ovita Williams**, *Assistant Director of Fieldwork, DSW Co-Convener & Developer*
PROJECT: "Suffusing a Power, Race, Oppression and Privilege (PROP)"

SPRING 2019 AWARDEES

Below is the list of grants completed and released in the 2019–2020 academic year with support from the CTL.

Carlos Alonso, *Dean of the Graduate School of Arts and Sciences*
PROJECT: "Extending Professional Development for Columbia Graduate Students: Teaching-Conference Support"

Jonathan Amiel, *Associate Professor of Psychiatry at CUIMC*
PROJECT: "Redesigning the Pre-Clerkship Curriculum with Deep Integration, Active Learning, and Competency-Based Assessment with Coaching"

Laureen Zubiaurre Bitzer, *Senior Associate Dean, Admissions and Career Planning, College of Dental Medicine* **Shubha Dathatri**, *Assistant Professor of Clinical Medical Education, College of Dental Medicine* **James Fine**, *Senior Associate Dean for Academic Affairs, College of Dental Medicine* **Aubrie Swan Sein**, *Director, Center for Education Research and Evaluation*
PROJECT: "Developing Dental Students as Primary Care Resources: Enhancing Clinical Education through an Innovative, Active-Learning-Oriented Educator Development Program"

Provost's Interdisciplinary Teaching Awards (ITA)

Provost's Interdisciplinary Teaching Awards (ITA) are designed to support faculty from different disciplines to work collaboratively on the design and launch of innovative interdisciplinary courses. Emerging from the deliberations of the Provost's Interdisciplinary Working Group, this program awards up to $20,000 to teams of two or more faculty from different departments or schools to develop and offer undergraduate or graduate courses that integrate content and perspectives from different disciplines to enhance student learning.

SPRING 2020 AWARDEES

Below is the list of projects that will be developed and released in the 2020-2021 academic year with support or advice from the CTL.

Michael Harris, *Professor of Mathematics* **Gayatri Chakravorty Spivak**, *Professor of English and Comparative Literature*
PROJECT: "Mathematics and the Humanities: An Interdisciplinary Innovation"

Sharon Akabas, *Associate Professor of Nutrition* **Laurel Daniels Abbruzzese**, *Assistant Professor of Rehabilitation and Regenerative Medicine (Physical Therapy)* **Sally Aboelela**, *Assistant Professor of Nursing*
PROJECT: "Interdisciplinary Weight Management Education to Address Weight Bias Across the Health Professions: Toward Improved Health Care for People with Obesity

Support for Faculty

4,237 interactions with Columbia faculty

1,986 services provided to Columbia faculty

904 faculty participants at CTL programs and events

CTL Assistant Director **John Foo** leads a session with faculty at the 2019 New Faculty Orientation.

CTL programs and services are grounded in teaching and learning scholarship, allowing faculty to explore, experiment, and reflect on their teaching practice. Faculty are introduced to innovative pedagogies and instructional technologies for integration into their classroom. The CTL encourages a learner-centered approach to teaching Columbia students and models and promotes teaching practices that cultivate inclusive and equitable learning environments. The CTL strives to meet faculty where they are in terms of geography, accessibility, and scheduling, to be responsive to the needs of the Columbia teaching community, and to make its programs, courses, and services accessible to all. This section highlights the range of programs and services offered to Columbia faculty.

What's New for Faculty

Students as Pedagogical Partners

In Spring 2020, the CTL launched Students as Pedagogical Partners (SAPP), its first initiative co-facilitated by undergraduate students, presenting an unprecedented opportunity to bring together faculty and students to work together towards transforming teaching and learning at Columbia. Including the learner perspective, their insights, and experiences, into discussions on pedagogy provides a unique opportunity for faculty to reflect on their teaching. The CTL hired seven Undergraduate Student Consultants on Teaching and Learning from across Columbia's campuses.

While originally scheduled as three in-person events for faculty, the SAPP initiative ran one in-person event focused on learner-centered teaching and then transitioned to an online format due to COVID-19. CTL staff and the student consultants partnered to develop online resources on active learning, learner-centered teaching, and inclusive teaching, and the student consultants provided helpful feedback and reflections for faculty on their individual online learning experiences.

Learn more at **https://ctl.columbia.edu/faculty/sapp/**.

On-Demand Teaching and Learning Support

This year, the CTL debuted a plethora of new online resources and self-paced courses for faculty. In response to COVID-19, the CTL created 17 new online resources to support instructors transitioning to teaching online. Resources ranged from Teaching with Zoom to Creating Online Exams to Inclusive Teaching and Learning Online.

The CTL also developed the Hybrid & Online Teaching Institute: a new online offering that guides faculty through

Students as Pedagogical Partners

Mae Butler
Sophomore
Columbia College

Donian Chyong
Junior
Columbia College

Haya Ghandour
Sophomore
School of Engineering and Applied Science

Jennifer Lee
Junior
Columbia College

Nicole Lyons
Junior
General Studies

Samatha McAlvey
Sophomore
General Studies

Kalisa Ndamage
Junior
School of Engineering and Applied Science

"[I learned] how much learning can truly be a partnership between instructors and learners. The CTL puts so much emphasis on the importance of learner voices and the way they and the rest of the Columbia community value and amplify said voices is truly amazing. Active participation from all sides of the education process is the best way to ensure success."

- Nicole Lyons

I have learned a lot about how professional pedagogical development services function within the context of a large research university like Columbia. This includes learning about how faculty at different stages in their career can be engaged and supported by the CTL, as well as what kinds of conversations about teaching and learning are already occurring among some faculty. In particular, I am thankful for the opportunity to learn from faculty who are working as educators about the other "side" of teaching and learning, as it has enhanced my understanding of my own teaching and learning experiences."

- Mae Butler

"Through the SAPP initiative, I was able to learn a lot more about the different methods and research supporting inclusive and accessible teaching and learning methods. In addition, I was able to work on my consultancy skills and learn how to develop resources for faculty with the guidance of the CTL staff. Overall, I learned more than I expected about pedagogy and the ways through which students and faculty can cooperate."

- Haya Ghandour

adapting their courses to online, hybrid, or face-to-face formats. The institute launched in June 2020 and consists of asynchronous, on-demand content hosted in CourseWorks followed by a synchronous online experience with CTL staff and other faculty participants. Together, these provide faculty with a comprehensive toolkit they can apply to their own course context whether this may be a seminar, small lecture, or large lecture class. Descriptions of each resource and the institute can be found in the CTL Response to COVID-19 section on page 14.

In addition, CTL staff developed resources on Case Method Teaching and Learning, Accessibility in Teaching and Learning, and Developing Poll Questions to Engage and Assess Science and Engineering Students and

"Setting aside dedicated time to work on the syllabus, guided by CTL staff, who started us off with useful exercises, then let us just devote time to working on the syllabus [was the most valuable part of the experience]. We arrived having had little time to think about the syllabus since we applied for the grant, and we left inspired about the course and with a syllabus well on the way to completion. We thought hard about the interdisciplinary aspects of the course, and the exercises facilitated this. Especially useful was the goal setting - what did we want students to KNOW and DO at the end of the course, and how did each module work toward that."

— **Pamela Smith**, *Seth Low Professor of History, Director, Center for Science and Society, regarding the Collaborative Interdisciplinary Course Design Institute*

Faculty from the Summer 2019 Active Learning Institute converse at a reunion lunch in Spring 2020.

launched three new online courses: Introduction to CourseWorks Online 2.0, Assessment and Grading in CourseWorks 2.0, and Course Design Essentials. Each of these encourages a learner-centered approach and models teaching practices that cultivate inclusive and equitable learning environments. See the Resources section on page 38 for more information.

Programs

The CTL offers professional development programs and events to connect Columbia faculty and instructors to effective teaching approaches, resources, and instructional technologies.

INSTITUTES AND INTENSIVES

The CTL offered the following institutes and intensives for faculty this year.

25 faculty participants in CTL institutes and intensives

Institutes

Institutes provide an immersive setting for faculty to develop new teaching approaches and skills with hands-on guidance from the CTL staff over a period of several days.

Active Learning Institute (Online)

In this four-day immersive online experience, held in June 2020, Columbia faculty explored the purposes and benefits of active learning and learned how to apply these research-based practices by developing their own active and learner-centered (face-to-face or online) course units. During the institute, faculty completed a series of hands-on activities and discussions over Zoom and CourseWorks (Canvas) to work through the essential components of designing engaging student learning experiences. Topics addressed included facilitating individual and collaborative learning activities, planning and creating effective online materials, and fostering and maintaining an inclusive course climate.

Blended Learning Essentials Institute (Online)

The Blended Learning Essentials Institute, held in June 2020, provided an overview of blended or hybrid learning and guided instructors through a research-based design process for a blended lesson or unit of study. Over the

four-day institute, faculty completed readings, workbook reflections, and discussion activities complemented by live, synchronous group discussion activities and one-on-one office hours. Throughout the institute and beyond, faculty will have access to CTL staff and a cohort of peers to discuss their work.

Collaborative Interdisciplinary Course Design Institute

This institute, held in October 2019, was organized for recipients of the Provost's Interdisciplinary Teaching Awards (ITA). The institute was intended for ITA teams to come together and collaboratively design new interdisciplinary courses. During the institute, teams worked on developing interdisciplinary student learning objectives, assessments and learning activities that align with the learning objectives, planned their approaches to co-teaching or team-teaching / course implementation, refined their course evaluation strategy, and left with the elements of a learner-centered syllabus.

CUIMC Summer Institute for Teaching and Learning

This two-day institute, held in July 2019, was devoted to exploring effective teaching and learning strategies in health sciences education. The CUIMC Summer Institute is designed for junior faculty and senior faculty taking on a new teaching role to develop their skills as educators, learn about interactive teaching techniques, and collaborate with other faculty across the campus. Topics covered during the institute included teaching and learning in the health sciences, effective course design, designing student-centered activities, and creating inclusive classrooms. The institute has been held annually since 2007 and had its largest attendance in 2019 with 31 faculty members.

Designing Interactive Learning Objects

This three-day institute, held in late July 2019, was devoted to exploring the effective design and integration of interactive learning objects into active learning environments. Examples of learning objects are quizzes, games, simulations, and interactive graphics and video. The inaugural institute introduced faculty to interactive digital activities that allow students to deeply engage with content, principles of online activity design, and assessment strategies to measure the impact on student learning. In addition to introducing best practices to inform the design of digital interactive learning objects, faculty experienced each step of the design process and engaged in peer review. Throughout the institute, faculty

focused on mapping activities to specific student learning objectives for a unit in their course.

Intensives

Intensives are an option for faculty who wish to take a deeper dive into topics but may not be able to commit to a multi-day institute. The two intensives below were held in December 2019.

Course Design Essentials

CTL staff guided participants through a day of interactive activities to design and plan new courses, or change the design of existing courses. Faculty walked away with the materials needed to create learner-centered courses. course materials.

Inclusive Teaching Intensive

Faculty meaningfully applied principles of inclusive teaching to their syllabi, assessment strategies, and classroom activities to create a course climate that maximizes learning for all students. In a cohort of peers, participants workshopped syllabi (including course content, policies, and accessibility standards) and committed to making changes to future practice.

TEACHING ORIENTATION

Teaching Orientations introduce faculty to teaching at Columbia and offer practical, evidence-based strategies they can implement on the first day of class.

The CTL held an orientation session for faculty from all campuses in late August 2019. CTL facilitators led sessions introducing participants to research-based and high-impact strategies to cultivate a learner-centered teaching

CTL Assistant Director **John Foo** with faculty at the Inclusive Teaching Intensive

culture and inclusive learning environment. Participants interacted with a panel of Columbia students who shared their most memorable classroom experiences, and a panel of Columbia faculty who shared insights and advice for those new to teaching at Columbia. At the end of the day, participants gathered with their colleagues for wine, cheese, and peer mentoring.

Faculty unable to attend the in-person Orientation offering were invited to enroll in the CTL's online New Faculty Orientation, a self-paced CourseWorks course.

"The Orientation enabled me to focus on my experiences and how I might bring them to life in the context of the syllabus for my first few classes. I was able to do this by leveraging what the CTL shared in terms of best practices for assessment methodologies, student engagement and inclusive participation.."

— **John Parkinson**, *Lecturer in the Discipline of Construction Administration, School of Professional Studies*

"I found answers to some of my long-lasting questions [during the Orientation], like how much to involve students in decision-making, whether students like to be challenged or not and how to ask for their pronouns. I became more conscious of my ways of teaching and how they are going to be perceived. In that sense, seeing the student side of the story was a great insight, as well as discussing the reflections with the fellow faculty. The more we share, the more we understand what we share."

— **Tugce Bilgin Sonay**, *Lecturer in Discipline, Department of Ecology, Evolution, and Environmental Biology*

WORKSHOPS AND EVENTS

Workshops and Events allow faculty to drop in to the CTL for 1-2 hours to explore timely topics related to teaching, learning, and instructional technologies. The CTL offered the following workshops and events for faculty this year.

Fall 2019 and Spring 2020

Introduction to CourseWorks (Canvas)
Faculty learned the basic features and functionality of the CourseWorks course management system, including how to migrate their content, navigate CourseWorks, manage syllabus and course materials, use quizzing tools, and utilize communication features in the system. The CTL also offers a self-paced, online course on how to use CourseWorks for teaching and learning as a flexible alternative to the face-to-face workshops.

Fall 2019

Discussion-into-Practice: Accessibility in Teaching and Learning
In this reading and discussion group, faculty participants discussed the literature and explored the topic of accessibility in the context of the teaching and learning environment. Participants reflected on their teaching, shared strategies, and considered how the literature can inform their practices. Readings included the article "Who Needs an Accessible Classroom?" by Sheryl Burgstahler, published in Academe, and a chapter from Reach Everyone, Teach Everyone: Universal Design for Learning in Higher Education by Thomas J. Tobin and Kirsten T. Behling.

Faculty converse during a break at New Faculty Orientation.

CTL Executive Director **Catherine Ross** leads a discussion at the New Faculty Orientation.

Engaged Lecturing

In this workshop offered on both the Morningside and CUIMC campuses, faculty explored the elements of an effectively designed and delivered lecture and left with strategies to maximize their students' learning. Faculty reflected on their own lecturing practices and developed a plan for increasing student engagement.

Faculty Learning Community on Inclusive Teaching - A Hybrid Offering

This learning community was held for Columbia faculty enrolled in the CTL's self-paced online course, Inclusive Teaching: Supporting All Students in the College Classroom. During two in-person meetings, participants identified strategies and talked through particular challenges related to reaching all students in the classroom space.

In the first meeting, participants shared what they hoped to learn in order to refine their inclusive teaching practices. Throughout the next couple of months, the CTL held online office hours and checked in periodically to answer questions, pose discussion prompts, and help faculty members track their progress. The second in-person meeting provided an opportunity for faculty to reflect on what they learned from taking the online course and how they will continue on their journey towards inclusive teaching.

Learning Through Discussion

Faculty explored a three-step process to ensure that students understand the why and how of discussion and leave class with clear takeaways. Faculty reflected on their discussion practices, applied a framework for design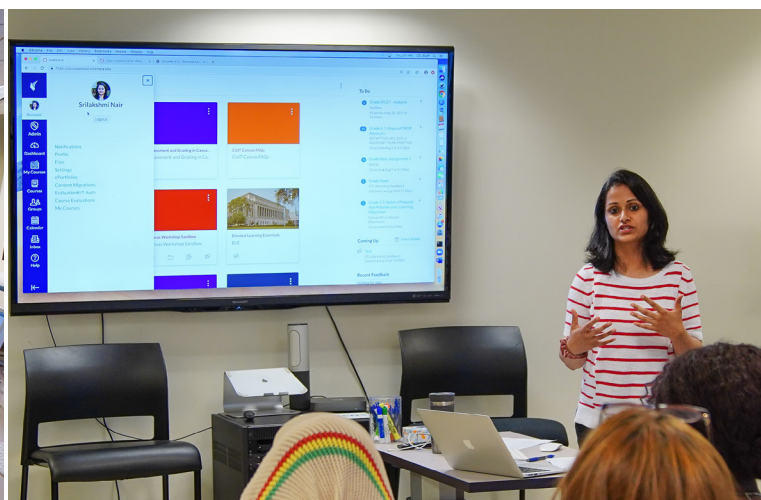ing, facilitating, and debriefing classroom discussions, identified new strategies to engage students in discussion, and considered how digital tools available at Columbia can support discussion contributions from all learners. This workshop was offered on both the Morningside and CUIMC campuses.

Small Changes to Foster Inclusive Teaching

Faculty learned inclusive teaching strategies they can implement immediately to create a more equitable classroom space and empower student learning, including establishing a supportive course climate, setting explicit expectations, constructing inclusive course content, and designing all aspects of class for accessibility. This workshop was offered on both the Morningside and CUIMC campuses.

555 faculty participants in CTL workshops and events

"With the guidance of folks at the CTL, I am gaining confidence in making my classroom more and more responsive to my students' voiced needs and priorities, while still feeling that I am providing useful guidance and facilitation through our classroom learning goals.**"**

— **Tom Rice**, *Lecturer in Discipline, Department of Astronomy, regarding the CTL Discussion-into-Practice: Accessibility in Teaching and Learning workshop*

CTL Learning Designers **Paul Stengel** and **Lakshmi Nair** present to faculty at the Introduction to CourseWorks workshop in August 2019

Teaching Large Classes
Faculty explored evidence-based strategies to make large classes more manageable and enjoyable for faculty and students alike. The focus was on overcoming the unique challenges of teaching large classes that pertain to engaging and building rapport with students, managing large amounts of grading, working with TAs effectively, and upholding academic integrity. This workshop was offered on both the Morningside and CUIMC campuses.

The Teaching Hour Series
The Teaching Hour series, co-sponsored by the Office of the Vice Provost for Faculty Advancement, aims

"The small breakout discussions were so useful, because they gave me the chance to share things I do in my courses with other instructors and with current students, and get specific feedback. I always solicit feedback from my own students as well, but I felt that the workshop discussions brought a new perspective to bear on my courses [...] Just hearing from the students about how specific policies feel from their perspective, and how certain styles of teaching or course requirements can make them feel more or less motivated, gave me a lot to think about. I left the workshop with several concrete ideas for how to change things about my classes, from small details of how attendance is counted, to bigger-picture things like how to build more learner-oriented exams."

— **Katherine Fox-Glassman**, *Lecturer in the Discipline of Psychology, regarding the With Learners: Learner-Centered Teaching in the Undergraduate Classroom workshop*

CTL Learning Designer **Mike Tarnow** presents at the Engage and Assess Science and Engineering Students with Poll Questions workshop.

to foster a teaching community among Columbia's underrepresented and diverse faculty populations. CTL staff hosted three sessions: for Black / Latinx faculty, for LGBTQ+ faculty, and for women of color faculty, to share their successes and concerns related to teaching at Columbia and to cultivate a community of peer mentorship. Participants explored issues of diversity from the perspective of instructors' positionalities, Columbia's student populations, as well as course content to collectively generate strategies to improve teaching practices and meet students' needs.

Spring 2020

Beyond Grades: Feedback for Learning
Faculty reflected on their current feedback practices and the individual and disciplinary assumptions that may inform them, explored the connection between feedback and student learning, and learned about giving feedback that is actionable, timely, and efficient. Through activities and discussion, participants crafted individual plans that incorporated evidence-based feedback strategies that are transparent, time-saving, and effective into their teaching practice. This workshop was offered on both the Morningside and CUIMC campuses.

Engage and Assess Science and Engineering Students with Poll Questions
In this workshop, Science and Engineering faculty learned how to develop questions that require students to use higher-order cognitive processes, such as applying concepts or evaluating hypotheses. They also learned how to incorporate these questions into their classrooms to assess their students' understanding in real time. This workshop combined the cognitive framework Bloom's Taxonomy and the audience response system Poll Everywhere, which can be used to implement polls in learning environments.

Provost Teaching and Learning Grants: Request for Proposals (RFP) Town Hall
Faculty learned about the different types of Office of the Provost Teaching and Learning Grants offered this year, which might be the best fit for their ideas, what kinds of projects are eligible for grants, and details about the application process.

With Learners: Learner-Centered Teaching in the Undergraduate Classroom
This workshop was designed and co-facilitated by the CTL's Undergraduate Student Consultants on Teaching and Learning who were hired as part of the Students as Pedagogical Partners initiative. Faculty learned about the

five key changes outlined in Weimer's *Learner-Centered Teaching: Five Key Changes to Practice* (2013) and reflected on their practice in dialogue with the student facilitators, who shared their experiences and perspectives as learners in learner-centered Columbia classrooms.

WORKSHOPS TO GO

The Workshops To Go program is an on-demand offering for departments or programs interested in hosting a short workshop for their faculty. All workshops present evidence-based practices and are grounded in the science of teaching and learning.

With each Workshop To Go offering, faculty receive resources, strategies, and practices that can help them address common challenges in their classrooms. Department chairs and program directors select from a list of session topics, offered in 30-, 60-, or 90-minute formats, based on the needs of their faculty.

Listed below are the Workshop To Go sessions and the departments, schools, and/or offices that requested them::

- **Learning Through Discussion:**
  CTL staff led this workshop for faculty at Columbia College, including in the Frontiers of Science and the Contemporary Civilization Core programs.

- **Small Changes to Foster Inclusive Teaching:** CTL staff led this workshop for faculty in Columbia College, School of Journalism, School of the Arts, School of International and Public Affairs, Earth and Environmental Sciences (online), and Otolaryngology (online).

Customized Workshops

In addition to Workshops To Go, department chairs and administrators requested customized workshops and information sessions to address the specific teaching needs of instructors in their schools, departments, and other academic units. During these workshops, participants worked through discipline-specific case studies and brainstormed strategies to implement in their own classrooms.

Schools & Offices

Arts & Sciences

- "Beyond Grades: Feedback for Learning" (October 29 & November 22): A two-part series, this custom workshop was developed with Shamus Khan, chair of the Sociology department, to address best practices regarding delivery and reception of feedback. Participants discussed their current practices regarding the delivery of feedback, and planned for

Kalisa Ndamage, Undergraduate Student Consultant on Teaching and Learning, converses with **Joseph Ulichny**, Associate in the Discipline of Chemistry, at the With Learners: Learner-Centered Teaching in the Undergraduate Classroom workshop.

Donian Chyong, Undergraduate Student Consultant on Teaching and Learning, converses with **Tugce Bilgin Sonay**, Lecturer in Discipline, Department of Ecology, Evolution, and Environmental Biology at the With Learners: Learner-Centered Teaching in the Undergraduate Classroom workshop.

changes to their teaching practice

Office of Faculty Advancement

- New Faculty Orientation (September 13, 2019): CTL staff facilitated an Inclusive Teaching session at the Office of Faculty Advancement's New Faculty

"The workshop helped me to reflect on my communication techniques and where improvements can be made. It also helped me to examine how clearly the learning goals and objectives of our exam were being articulated to the students and how we can improve on our transparency as it relates to assessment criteria [...] In addition to the inclusive teaching techniques and strategies the workshop taught me, I left with a reminder that being a good, fair, and effective teacher is a skill. Like any skill, it requires thoughtfulness, practice, and training."

— **Kaleigh Matthews**, *Graduate Program Manager, Earth and Environmental Sciences, regarding the* Small Changes to Foster Inclusive Teaching Workshop To Go Accessibility in Teaching and Learning *workshop*

"I found that speaking with Suzanna Klaf, CTL Associate Director, allowed me to articulate — and, in the process, to better understand — the priorities and objectives that guide my own teaching. At the same time, in the course of our conversations, Suzanna shared with me many valuable insights and suggestions, which helped me think in new, more productive ways about a whole range of teaching activities, from the crafting of course assignments, to the implementation of peer-review exercises, to the leading of class discussion. I left every one of my conversations with Suzanna with a renewed sense of pleasure and pride in my work as a teacher. Speaking with her has helped me understand that teaching itself is always also a learning process, a process of becoming. I have found this realization both humbling and exciting. It has allowed me to approach my own teaching with greater freedom, flexibility, openness, and creativity [...] Based on our conversation in January, I completely revised the assignment structure for my spring undergraduate seminar and integrated several peer-review exercises, which were enormously productive, both for me and my students."

— **Meredith Gamer**, *Assistant Professor, Department of Art History and Archaeology*

Orientation. Staff also provided a welcome and introduction to the CTL

School of Engineering and Applied Sciences

- New Faculty Orientation (August 15, 2019): CTL staff provided an overview of CTL services and resources for new SEAS faculty, including an overview of CTL workshops on Inclusive Teaching.

- New Chair Orientation (September 10, 2019): CTL staff shared CTL programs and services with new SEAS chairs.

- Teaching Innovation Lunches (November 7 and December 5, 2019, and February 6 and March 5, 2020): CTL staff co-hosted this SEAS initiative with the Dean's Office, and provided consultations and compiled resources as requested by faculty presenters.

School of Social Work

- New Faculty Orientation (August 8, 2019): CTL staff shared information on the CTL's services and resources as part of an orientation for new School of Social Work faculty.

- New Faculty Orientation: Intro to Courseworks and the CTL (January 8, 2020): CTL staff facilitated an introduction to CourseWorks and the CTL for School of Social Work faculty.

Union Theological Seminary

- Blended Learning Essentials (January 22, 2020): CTL staff facilitated a discussion on the what, why, and how of blended learning for UTS faculty. UTS faculty were informed of the resources available from the CTL.

Services

The CTL offers a range of services that guide Columbia faculty as they reflect on their teaching and implement effective practices.

CONSULTATIONS

Faculty requested 2,508 one-on-one consultations with CTL staff to receive support for their teaching and learning needs throughout the year. These consultations were offered both in-person and over the phone, either scheduled or during CTL walk-in hour support, and in Spring 2020 this offering was expanded to Zoom consultations and virtual office hours for immediate support. Common consultation topics

included course and curriculum design, inclusive teaching strategies, teaching and diversity statements, educational grants, assessment and evaluation, as well as instructional technologies and digital pedagogies.

TEACHING OBSERVATIONS

Through a structured process, CTL consultants observed instructors in the classroom and provided individualized feedback to improve their teaching. In the academic year 2019-2020, teaching observations were conducted for more than 24 faculty across 6 different schools within Columbia University. CTL staff also worked with schools, programs, and departments seeking to refine their peer teaching observation practice.

ASSESSMENT AND EVALUATION

Faculty requested 64 consultations focused on assessment and evaluation. CTL staff worked with faculty to identify and develop assessment methods, consult on assessment and evaluation strategies for grants that support teaching and learning, and provide professional development on a variety of assessment best practices.

LEARNING DESIGNER TECHNOLOGY SUPPORT

CTL Learning Designers help members of the Columbia teaching community effectively integrate instructional technologies into their teaching practice. Faculty and instructors can seek advice and support to experiment with a rich portfolio of online platforms and digital and media tools to turn classrooms and online environments into active spaces for learning. The CTL also supports custom software development and media production driven by the faculty's teaching and assessment goals. These efforts allow faculty to stay on the cutting edge of instructional technologies

This year the CTL supported a range of platforms and provided space, equipment, and education for the production of media and learning objects.

Audience Response Systems

Learning Designers aided faculty with the use of Audience Response Systems (ARS), which are used in classrooms of all sizes to engage participants. Instructors used ARS to communicate with learners, collect answers to questions, and provide real-time feedback. In Poll Everywhere, the ARS system used at Columbia, learners respond to questions using their own web-enabled

5,006 interactions with Columbia faculty

2,706 services provided to Columbia faculty

726 faculty participants at CTL programs and events

"The structure of the CTL Teaching Observations maximized deep engagement: the preparation meeting helped me articulate what the objectives of my lessons were, and Suzanna Klaf [CTL Associate Director] also gave me tips to align these objectives with my overall goal of more inclusive teaching. The debrief, guided by my own reflection and [the consultant's] meticulous notes, helped me trace how the activity fulfilled and fell short of my goals […] It was so helpful that I requested a second observation, the next semester, this time videotaped. What I appreciate about the CTL's observation feedback is that it is encouraging — teachers need to know what is working well just as much as they need to know what's working poorly. The critiques were very constructive and perhaps more importantly, doable! Having concrete steps (for example, start prioritizing the last 5 minutes of class to let students reflect, and to assess how students have absorbed the learning) really empowered me to feel like I could make manageable revisions to my course plans."

— **Alexandra Watson**, *Lecturer, First-Year Writing: The Americas, Department of English, Barnard College*

"I think it helps to constantly get feedback from another observer, from other colleagues, and from students. While the teaching evaluation is helpful for teachers to learn the students' impression toward them, the consultation helps me focus on how to improve the learning experience of the students and to make the teaching more effective. I implemented a few suggestions [from the consultation]. For instance, I have now begun each lecture with a 5-minute overview of the objective and content, and I now end the lecture with a summary of the key points. I have also introduced more in-class exercises and surveys so that I can ensure the students are ready for the next topics."

— **Steve WaiChing Sun**, *Assistant Professor, Department of Civil Engineering and Engineering Mechanics*

devices, such as a phone, tablet, or laptop..

URL: ctl.columbia.edu/resources-and-technology/
teaching-with-technology/tech-resources/ars/

CourseWorks Support

Columbia's learning management system, CourseWorks, is at the center of many instructional technology activities. CourseWorks is supplemented and enhanced by other tools that support a range of instructional objectives, such as tools for online collaboration, presentations, lecture capture, audience response, media annotation, and electronic portfolios.

URL: ctl.columbia.edu/resources-and-technology/
courseworks/

DIY Media Production Spaces

The CTL maintains two DIY Media Production Spaces with technology suited for producing instructional multimedia content, including interactive videos, screencasts, and annotated media. Instructors who request to use the facilities receive a consultation with a CTL Learning Designer, learn how to use the equipment and software, and discuss their learning goals for the course and how student learning can be enhanced using instructional media. As a support to faculty creating their own media, CTL Learning Designers and the media production team have produced the "Teaching with Do-It-Yourself 'DIY' Video" guide. This guide offers examples, principles, and best practices to help instructors create engaging classroom experiences using video, and provides information about the CTL's DIY Media Production Spaces.

URL: ctl.columbia.edu/resources-and-technology/
teaching-with-technology/diy-video/

Mediathread

Mediathread, an innovative platform developed at the CTL, supports collaborative multimedia analysis. Mediathread allows users to lift video, audio, and image items from a wide range of digital collections and then work with them in a course-specific website.

URL: ctl.columbia.edu/resources-and-technology/
teaching-with-technology/tech-resources/
mediathread/

Zoom

Learning Designers aided faculty in their use of the Zoom video conferencing tool, which is integrated with CourseWorks, to hold remote class sessions and office hours. Learning Designers provided technical and pedagogical support: from basic functionalities of Zoom to online tools and strategies for keeping students engaged, as well as how to appropriately record and post lectures.

Panopto

Panopto is a secure video recording, editing and hosting solution at Columbia. Instructors can use Panopto to record lectures, screen capture with voice over, and conduct in-video quizzes. Once these videos are recorded and finalized, they can easily be shared with students.

Online Resources and Courses

The CTL develops online resources for instructors covering a range of teaching and learning topics. These resources provide a concise introduction to pedagogical approaches, the basics of effective implementation, tips for getting started at Columbia University, and practical strategies to help instructors address the teaching and learning issues that they face in their classroom.

Teaching Guide

Guide for Inclusive Teaching at Columbia

In 2017, the CTL authored and released the Guide for Inclusive Teaching at Columbia, which has received widespread interest. The online version of the guide has been accessed over 16,691 times in 114 countries since its release. The guide offers five research-based inclusive teaching principles, as well as practical, accessible, and usable evidence-based strategies that instructors can use immediately..

URL: ctl.columbia.edu/resources-and-technology/
resources/inclusive-teaching-guide/

On-Demand Teaching Resources

Accessibility in Teaching and Learning

This new resource provides instructors with an overview of accessibility in teaching and learning and general "getting started" strategies for making learning resources, tools, experiences, and opportunities accessible to all learners. Creating an accessible learning environment for your students is an inclusive practice.

URL: ctl.columbia.edu/resources-and-technology/
resources/accessibility/

Blended Learning

The CTL's on-demand resource on blended learning describes the elements of an effective, learner-centered "blended" learning approach that integrates complementary face-to-face and online learning experiences in service of learning objectives. The resource poses questions that instructors can reflect on before designing their course as well as additional references and tools.

URL: ctl.columbia.edu/resources/blended-learning/

Case Method

Case Method is an active learning approach to teaching and learning in which students apply course content and grapple with real or imagined scenarios. Case Method teaching can help students develop more complex skills such as analysis, synthesis, and evaluation. This resource provides an overview of the what, why and how of teaching with cases. Instructors new to case method teaching are introduced to different approaches to teaching with cases, where to find cases, and can explore examples of successful Case Method teaching at Columbia University.

URL: ctl.columbia.edu/resources-and-technology/
resources/case-method/

Online Courses

Assessment and Grading in CourseWorks 2.0

Version 2.0 of the Assessment and Grading in Course-Works online course was launched in August 2019 to provide instructors with an in-depth understanding of the latest assessment and grading features in CourseWorks. Participants learn about setting up assignments within CourseWorks using various tools. The course also helps participants navigate CourseWorks grading features to assess assignments, quizzes, and discussions. Since the original course launched in late Spring 2018, both versions of the course have together recorded 534 enrollments by faculty and instructors.

Blended Learning Essentials

This self-paced course provides an overview of blended learning and guides instructors through the design process for a lesson or unit of study. The course features videos of Columbia faculty and former recipients of the Provost's Innovative Course Design Grants, who share their blended teaching and learning experiences

Course Design Essentials

Launched in June 2020, this self-paced and self-enroll course brings the materials from the CTL's in-person Course Design Essentials offering into a CourseWorks course site to guide faculty through the design or redesign of a course. Participants learn about backward design, and consider learner-centered and inclusive teaching practices as they draft course learning objectives, assessments, and plans for learning experiences on downloadable worksheets.
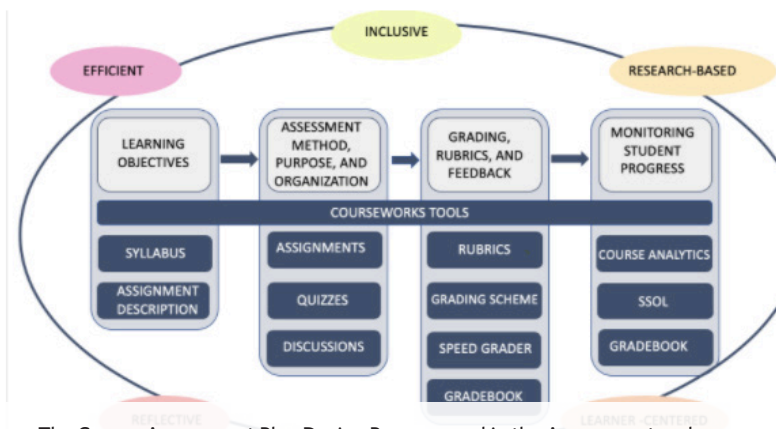
Inclusive Teaching: Supporting All Students in the College Classroom MOOC

In 2019, the Columbia CTL created and launched the first ever MOOC (massive open online course) dedicated entirely to the topic of inclusive teaching in higher education. The course provides practical, accessible, and usable strategies that instructors can implement in their classrooms to create and maintain a supportive learning environment for all students. This course aims to provide instructors with tools that are immediately applicable to their teaching contexts. Since its launch, over 9,956

"Although I have been teaching for about 5 years now, this was the first time I really had the opportunity to think first about the course objectives, then identify evidence for students' learning, and only then plan instructing activities and learning experiences. The course really walks you through the rationale of Backward Design in a very convincing way, and provides practical and first-hand experiences from fellow faculty that have used this methodology."

— **Alfredo Spagna**, *Lecturer in the Discipline of Psychology regarding the Blended Learning Essentials coursey*

The Course Assessment Plan Design Process used in the Assessment and Grading in CourseWorks 2.0 course.

people have enrolled in the course.

Introduction to CourseWorks Online 2.0

Re-launched in January 2020, Introduction to Course-Works Online provides instructors with an overview of the features and functionality of Columbia's learning management system, allowing them to build and support engaging courses. In this self-paced course, participants learn how to navigate CourseWorks, manage syllabi and course materials, and utilize communication features. The course provides tips and examples that highlight the use of CourseWorks tools as applicable to various teaching and learning contexts. Since its initial launch in Fall 2017, the course has recorded 783 enrollments by faculty and instructors.

New Faculty Orientation to Teaching

A self-paced course for faculty new to teaching at Columbia, this course provides instructors with an overview of the teaching and learning context at Columbia, learner-centered and inclusive teaching practices, strategies for engaging all students, and resources available to instructors and academic support resources for learners. This course is a flexible alternative to the CTL's in-person New Faculty Orientation to Teaching

Support for Columbia University Irving Medical Center

The CTL offered a range of faculty development programs and events on the Medical Center campus to provide CUIMC instructors with effective teaching approaches, resources, and instructional technologies. In addition to the CUIMC Summer Institute for Teaching and Learning, the CTL also facilitated several customized workshops and information sessions to address the specific teaching needs of schools, departments, and other academic units at CUIMC.

What's New for CUIMC Faculty

Designing Interactive Learning Objects Institute

The inaugural Designing Interactive Learning Objects Institute (DILO) was successfully launched in July 2019 with seven faculty participants representing all four CUIMC Schools: College of Dental Medicine, Mailman School of Public Health, School of Nursing, and Vagelos College of Physicians and Surgeons. The institute was run as a three-day workshop devoted to exploring the effective design and integration of interactive learning objects into active learning environments. Examples of learning objects include quizzes, games, simulations, interactive

graphics and video. The institute introduced faculty to interactive digital activities that allow students to deeply engage with content, principles of online activity design, and assessment strategies to measure the impact on student learning. In addition to being introduced to best practices to inform the design of digital interactive learning objects, faculty experienced each step of the design process and engaged in peer review. Throughout the institute, faculty focused on mapping activities to specific student learning objectives for a unit in their course.

Mailman School of Public Health Digital Learning Task Force

Mailman School of Public Health formed a Digital Learning Task Force (DLTF) charged with creating a comprehensive digital learning strategy for the school. This project was supported by a Provost's Large Scale Teaching and Learning Grant awarded in Spring 2018. The DLTF, led by Julie Kornfeld, Vice Provost for Academic Programs and Associate Professor of Epidemiology, included faculty and staff participants from across Mailman and Columbia, including staff from the CTL who provided critical

932 faculty enrolled in on-demand CTL courses

- Morningside Arts and Sciences — 348
- Morningside Graduate and Professional Schools — 261
- Columbia University Irving Medical Campus — 115
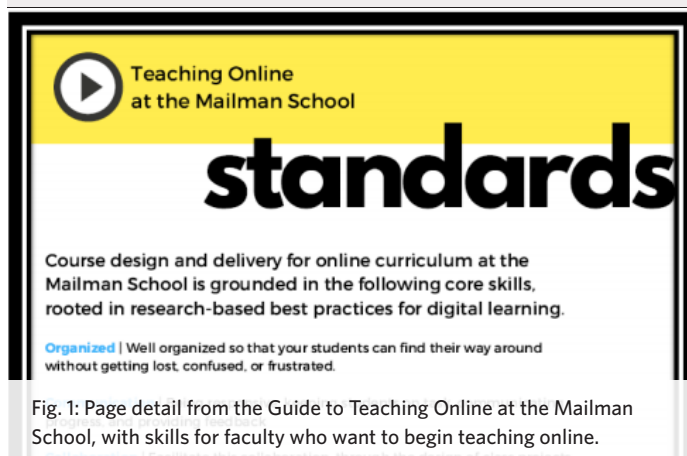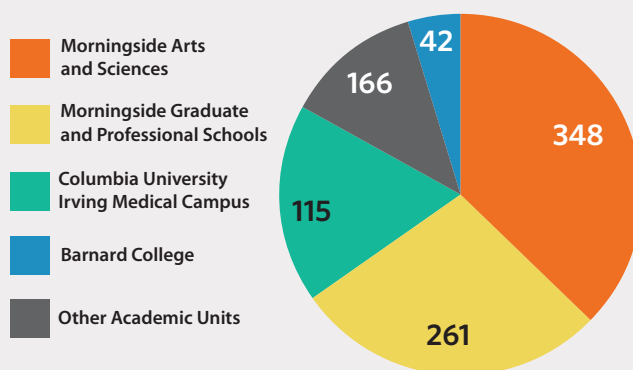- Barnard College — 42
- Other Academic Units — 166

Fig. 1: Page detail from the Guide to Teaching Online at the Mailman School, with skills for faculty who want to begin teaching online.

guidance and support for the project.

The DLTF was guided by the following principles: to continue leadership in public health education excellence, to reach learners in new ways, to identify best practices to organize and support digital curriculum, and to ensure sustainable and scalable digital course development policies and practices. The task force formed subgroups who reviewed research and relevant literature and conducted interviews with other online programs at Columbia and beyond. The subgroups produced the following recommendations and best practices:

- Course Development Subgroup: developed Guide to Teaching Online at the Mailman School (Fig. 1), which included a course development roadmap, standards and best practices, and links to additional resources.

- Monitoring and Evaluation Subgroup: developed a comprehensive evaluation plan for monitoring online courses and programs.

- Faculty Compensation Subgroup: developed a compensation matrix for consideration and also provided a set of recommendations for next steps

Support for Curricular Changes at Vagelos College of Physicians & Surgeons

In the fall of 2019, the Fundamentals Curriculum Revision Committee at Vagelos College of Physicians & Surgeons (VP&S) was formed to develop a new high-level vision for curriculum reform for the Fundamentals Curriculum (the first one and a half years of the MD program). The committee was created as part of a Provost's Large-Scale Teaching and Learning Grant awarded in the spring of 2019. Committee work continues through Spring 2020 and into the summer, with the 13 committee members meeting weekly. CTL staff are represented on the committee and provide integral guidance and planning.

The goal of the Committee is to implement a new curriculum that incorporates: 1) broader medical education trends, including interactive and active learning modalities, 2) the ability for integration across subject areas (e.g., Pediatrics, Ob-Gyn, Nutrition, Health Systems Sciences, Public Health, and Geriatrics), and 3) an emphasis on skill development over content memorization to help prepare students to adapt to an ever-changing and complex healthcare system

Customized Workshops

The CTL facilitated the following customized workshops for CUIMC faculty:

- "Introduction to CourseWorks" (August 26 and September 4, 2019, and January 22, 2020): CTL

1,149 interactions with CUIMC faculty
843 services provided to CUIMC faculty
125 CUIMC faculty participants at CTL programs and events

staff facilitated sessions for Mailman School of Public Health Core courses' teaching assistants and Biostatistics teaching assistants on the basic features and functionality of the CourseWorks (Canvas) course management system, including how to migrate their content, navigate CourseWorks, manage syllabus and course materials, use quizzing tools, and utilize communication features in the system.

- "Irving REACH Fellowship Video Workshop" (October 16, 30, and November 6, 2019): CTL staff facilitated sessions for Project REACH (Reach and Engage to Advance Community Health), a fellowship designed to address training needs in community engagement for Columbia graduate students working with staff from local community-based organizations in Upper Manhattan. The sessions trained participants in video production techniques needed to complete a culminating media project that promoted a community-based organization with whom students had partnered.

CTL Associate Director Ashley Kingon works with faculty at the Designing Interactive Learning Objects Institute in Summer 2019.

Support for Graduate Students ⎯⎯

4,133 interactions with Columbia graduate students

1,106 services provided to Columbia graduate students

2,418 graduate student participants in CTL programs and events

The 2019-2020 Teaching Assessment Fellows with CTL Senior Assistant Director **Chris Chen** and Associate Director **Melissa Wright**.

The CTL supports the professional development of Columbia graduate students across the University with current or future teaching responsibilities. This support includes an array of offerings for graduate students to help them reflect on, improve, and measure their teaching at Columbia. Graduate students participating in the CTL's programs and services develop a sense of pedagogical agency, interdisciplinary exchange, and peer-driven inquiry that helps prepare them for the future in a variety of academic and professional settings.

What's New for Graduate Students

Teaching Assessment Fellows

In 2019, the CTL launched the Teaching Assessment Fellows program (TAF), a new fellowship for graduate students. Six Columbia University doctoral students were in the inaugural cohort. They worked closely with the CTL to define research questions for teaching interventions, learn about strategies and methodologies for evaluating student learning, and create data-based analysis of learning activities (both in-person and online) to share with faculty. Through these activities, TAFs helped to extend the CTL's capacity to offer assessment support for multiple teaching projects at Columbia funded by the Office of the Provost (see page 20).

Online Resources

Over the 2019-2020 academic year, the CTL developed several new digital resources for graduate students to help them advance teaching practices. These included the Learning Objectives Generator to support the development of targeted objectives for an assignment, a thematic unit, or a course; the Assessing Teaching and Learning Seminar, a four-week asynchronous intensive enabling participants to define an original research

question and create their own Teaching as Research (TaR) project proposal; and Digital Teaching Portfolio templates for doctoral students completing the Advanced Track of the CTL Teaching Development Program, enabling them to showcase original teaching materials, insights, and evidence of teaching efficacy gathered from across their time at Columbia.
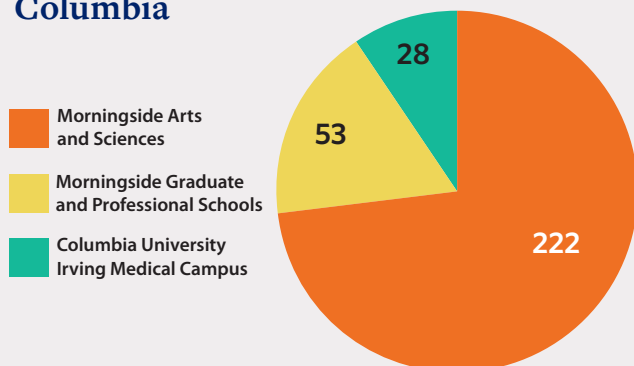
Programs & Services

TEACHING DEVELOPMENT PROGRAM

The CTL Teaching Development Program (TDP) allows Columbia doctoral students to cultivate, document, and articulate their teaching development across the arc of their graduate school career. Graduate students can participate in the TDP program on either of two tracks: Foundational or Advanced.

Completion of a TDP track earns a letter from the CTL outlining track competencies and certifying completion. Completion is also noted on Columbia transcripts for doctoral students in Arts and Sciences and Fu Foundation School of Engineering and Applied Science departments.

303 participants in the Teaching Development Program across Columbia

- Morningside Arts and Sciences — 222
- Morningside Graduate and Professional Schools — 53
- Columbia University Irving Medical Campus — 28

CTL Senior Assistant Director **Ian Althouse** leads a session at the Fall 2019 Teaching Orientation.

BEGINNING TO TEACH

The CTL offers programs and services throughout the year that introduce graduate students to fundamental concepts and practices in student-centered teaching. They help to deepen the experience of TAships, connecting early instructional experience to proven and sustainable pedagogical practices. Participation in these offerings with subsequent reflection helps to satisfy the Foundational Track for graduate students enrolled in the Teaching Development Program.

"The TAF program provided a rare opportunity to learn ways to assess the effectiveness of different instructional methods. For me, the most valuable part of the TAF program was its mentorship and collaboration across disciplines. I worked closely with staff specializing in assessment and learning design at the CTL, acquiring new skills in academic research. Without the TAF program, I never would have been exposed to the varied approaches to teaching and learning at CUIMC. After observing a class up at the medical campus and implementing a focus group with those students, I have gained new perspectives on teaching and learning that I plan to implement in my own classroom […] I plan to implement some of the best practices from focus groups in my own classroom with the aim of being more of a facilitator who motivates students' critical thinking versus a lecturer.**"**

— **Karin Christiaens**, *PhD student, Department of Art History & Archaeology*

Teaching Orientations

Teaching Orientations introduce graduate students to a range of teaching resources, procedures and policies at the university, and practical, evidence-based strategies that they can implement on the first day of class.

This year, the CTL ran orientations to teaching for graduate students in Arts and Sciences, SEAS, and in individual departments. The orientations featured sessions on topics such as establishing classroom policies, grading tactics, and inclusive teaching practices. A campus resources session featured representatives of campus services and support offices providing guidance on common challenges faced by new teaching assistants.

Essentials of Teaching and Learning

The Essentials sequence of workshops familiarizes graduate students with frameworks and tools they can use to facilitate student learning. Completion of the Essentials sequence is a requirement for completion of the CTL's Teaching Development Program for graduate students.

2019-20 *Essentials sequence* (*ran each semester*)

Creating Inclusive Learning Environments: Participants learned about the key terms, frameworks, and principles of inclusive teaching, focusing on strategies and tools for including all students in the learning process.

Learning Objectives and Backward Design: Participants learned about backward design: an end-in-mind approach to instruction to facilitate students' learning.

Active Learning: Participants practiced developing class activities aligned with learning objectives that incentivize all students to participate.

Assessment and Feedback: Participants learned approaches for assessing student learning and providing feedback that encourages students to focus more on their improvement and less on bottom line scores.

ADVANCING YOUR TEACHING

Graduate students wishing to develop advanced teaching practices and engage more deeply with a community of peers can participate in a range of advanced programs, seminars, and institutes at the CTL. These offerings help participants engage with the scholarship of teaching and learning within a community of peers invested in teaching, apply conceptual frameworks and emerging technologies to innovate their teaching, and cultivate transferable professional skills.

Seminars

Seminars provide the opportunity for cohorts of graduate students to engage in a sustained series of conversations, modules, and workshops focused on selected topics in teaching and learning over the course of the semester.

This year the following seminar programs were offered to graduate students.

160 graduate student participants in CTL seminar programs

Assessing Teaching and Learning Seminar (*Online*)

In this online seminar, over the course of five modules, participants gained an understanding of Teaching as Research (TaR) by defining an original research question and developing their own TaR project proposal to measure an aspect of their own teaching practice, drawing on the support of an online community of peers and the instructor. Along the way they learned about relevant data collection and assessment tools, both quantitative and qualitative, and completed a methods and data analysis section. The seminar culminated in the presentation of fully developed TaR proposals.

Collaborative Learning Seminar

The Collaborative Learning Seminar was a four-week intensive for Columbia graduate students and postdocs interested in exploring small group learning activities and the instructional methods and technologies that support them. Working in groups, participants experienced various cooperative interactions and supported each other's exploration of collaborative learning. By the end of the seminar, each participant had designed a collaborative learning activity linked to learning objectives that was ready to run in a class or show to colleagues.

Graduate Students converse at the Fall 2019 Orienation

Course Design Seminar

The four-week Course Design Seminar allowed participants to explore evidence-based, inclusive instructional design practices and engage in supportive peer review processes. Participants applied the principles of backward design and inclusive teaching to develop context-specific learning objectives, assessments, and a range of activities that facilitate student learning within the context of a single course. The seminar culminated in participants creating a syllabus of their own design.

Evidence-Based Teaching in Science and Engineering Seminar (Online in Spring 2020)

This series was offered during the fall and spring semesters for Morningside and CUIMC graduate students, respectively, and was designed for postdocs and graduate students teaching science and engineering. Participants applied the principles of backward design to develop student learning objectives, assessments, and active learning activities in order to better facilitate student learning. The seminar culminated in each graduate student developing a course syllabus or a multi-part learning experience of their own design.

Advanced Topics in Teaching Workshops

In 2019-20, the CTL provided several advanced workshops to graduate students looking to acquire new pedagogical frameworks and to innovate their teaching

1,965 graduate student participants in CTL workshops and events

Fall 2019

Designing and Using Effective Rubrics: In this session, participants learned to apply an inclusive teaching lens to assessment design and feedback delivery through the development of rubrics. Participants explored three types of rubrics and tried their hand at developing an inclusive rubric for assessing student participation—an area often assessed, but at risk of being inconsistent or measured by opaque criteria

Hacking Common Classroom Environments and Challenges: In this session, participants learned about different classroom "hacks"—low- or no-cost spatial, pedagogical, and/or reflective interventions—that foster a positive classroom climate and support active learning. Participants walked away with a robust toolkit of strategies to re-imagine and re-purpose the quality and suitability of their classroom environments.

How Can Technology Impact Learning?: This session engaged some of the literature examining technology's role in supporting students' learning and considered how technology can support and impede our desire to develop accessible learning experiences for our students.

Spring 2020

Case-based Instruction in Science and Engineering: Participants learned how case-based instruction—a strategy used commonly in medicine, law, and business—can be used by instructors in science and engineering to help students make connections between what they learn in the classroom and the world beyond. In this session, participants learned about the resources they can use to start building their own cases and discussed how these

Graduate students at an Essentials of Teaching and Learning workshop.

"Because the Learning Communities this spring were broadly focused on inclusive teaching and breaking down disciplinary boundaries, the opportunity to work through my own biases and assumptions with graduate students from other departments was highly valuable. Having participated in the Learning Communities, I now have a plethora of concrete, research-based tools to communicate more effectively with my students. The experience has left me feeling better equipped to teach students with more diverse identities and backgrounds in my future classrooms, whatever the level or setting."

— **Mary Catherine Stoumbos**, *Ph.D. student, Department of Music*

strategies are relevant for their own individual teaching practices.

Introduction to Research Mentorship: In this session for graduate students who mentor other researchers, participants developed structures to help set the terms of a successful research mentorship, discussed approaches on how to handle difficult situations, and discussed how these situations identify expectations that are important for mentors to align with mentees

Fall 2019 and Spring 2020

Learning by Observing: The Art of an Effective Teaching Observation: This workshop provided participants with a model for conducting observations of teaching that focus on instructional intention and student engagement, as well as insights about the observer's own teaching development.

Graduate students participate in activities at a Teachers' Lounge.

Learning Communities, Journal Clubs, and Lounges

CTL Learning Communities, Journal Clubs, and Lounges are offerings for graduate students that build community around teaching development. They are designed to organically address graduate student interests as they cultivate instructional practices in today's teaching and learning environments.

CTLgrads Learning Communities

Drawing on support from the CTL, Senior Fellows from the CTL's fellowship programs work in interdisciplinary pairs or groups to design and co-facilitate sequential discussions on teaching and learning topics. This year Senior Fellows hosted the following learning communities for their peers:

Fall 2019

Mastering Techniques for Active Learning

- Palani Akana, Ecology, Evolution and Environmental Biology
- Alex Ekserdjian, Art History and Archaeology

Spring 2020

Assumptions & Inclusivity: Increasing Transparency in the Classroom

- Valerie Bondura, Anthropology
- Karin Christiaens, Art History and Archaeology
- Zachary Domach, Religion
- Almudena Marín-Cobos, Latin American and Iberian Cultures

The Stories We Tell: Storytelling as Pedagogical Strategy

- Emma Le Pouésard, Art History and Archaeology
- Caitlin Morgan, Classics

From Student to Expert: Breaking Down Disciplinary Tasks in the Classroom (Online)

- Velia Ivanova, Music
- Jeffrey Sherman, Electrical Engineering

CTLgrads Journal Club

CTLgrads Journal Club for graduate students and postdocs meets every other week through the academic year. This year's sessions introduced participants to the research on teaching various disciplines (also known as Discipline-Based Education Research, or DBER) and engaged peer-reviewed articles through group discussions. Participants focused on how they can use education research in their own fields and beyond to

inform their own teaching practices.

Teachers' Lounges and Language Lounges

In the CTL's Lounges, graduate students, and CTL staff converse informally about teaching approaches, drawing from research and one another's classroom experiences. In 2019-20, CTL Lounges explored research about and techniques for increasing accessibility in teaching and learning, including Universal Design for Learning (UDL).

Fall 2019

Language Lounge: Accessibility and Language Instruction

Participants considered how accessibility intersects with language instruction, including how tools such as visual media, movement, and sound may be disinclusive or create unanticipated barriers to entry for students.

Language Lounge: Making Classwork Accessible

Participants examined the intersections of evidence-based language instruction and the frameworks presented by UDL to consider ways to make classwork more accessible to all students. In particular, how to engage audiovisual materials and handouts in the classroom to align with evidence-based practices without sacrificing the inclusion of all students.

Teachers' Lounge: Banning, Allowing, and Needing Devices in the Classroom

Participants engaged in research on the use of electronic

Graduate students participate in activities at the Hacking Common Classroom Environments and Challenges workshop.

devices during class, considered when devices may be desirable and even necessary for some or all students, and discussed effective and inclusive ways to frame policies in this area.

Teachers' Lounge: Learning Preferences and Universal Design

Participants looked at definitions and frameworks for Universal Design for Learning (UDL) and thought about ways to pursue diversity engagement, content representation, and student activities in their own classes.

Spring 2020

Teachers' Lounge: Making Assessments Accessible

Participants discussed the application of Universal Design principles to the evaluation of student performance and thought about ways to design and offer multiple modes of assessment to ensure that the ways we assess learning are clear and accessible to all of our students.

APPROACHING THE JOB MARKET

Approaching the Job Market Workshops

The CTL offers an array of workshops for graduate students preparing to represent their teaching experiences and priorities in applications, interviews, and campus visits. In 2019-20, these workshops included the following.

Summer 2019

Representing Your Teaching Summer Intensives: In a week of events, participants focused on representing

"It was really interesting to hear a wide variety of points of view about a pedagogical topic that doesn't have a clear resolution (how to include technology in the classroom). As always, I find that one of the greatest benefits of CTL events is that they bring together people from different disciplines and with vastly different backgrounds and perspectives, leading to really productive and interesting conversations.**"**

— **Tomer Yavetz**, *Ph.D. student, Department of Astronomy, regarding the CTL workshop* How Can Technology Impact Learning?

> "The Language Lounges on UDL in Fall 2019 have influenced the way I present classwork to students (specifically, listening). The discussions we had in the joint Language Lounge/Journal Club on case studies caused me to reflect on the way I present grammar to my students as a series of case studies. Overall, I left every session feeling invigorated, ready to try new things in my teaching, both emotionally and practically, since the Language Lounges always offer concrete takeaways and resources [...] The Language Lounges have been some of the most exciting and helpful offerings from the CTL for me! I walk away from them excited to get back in the classroom and try new things."
>
> — **Isabella Livorni**, *PhD student, Italian and Comparative Literature*

their teaching in different parts of their academic job application: teaching statements, teaching portfolios, syllabi, diversity statements, and presenting their teaching in interviews and on the market.

Teaching Statement Online: In this multi-week online workshop, participants learned about, wrote, and revised a teaching statement in order to define their instructional values and prepare for the academic job market.

Fall 2019

Building Your Teaching E-Portfolio: In this session, participants examined sample teaching e-portfolios and determined what effective communication, design, and layout look like in the digital environment.

Writing a Diversity Statement: In this workshop, participants learned about the components of a reflective and thoughtful diversity statement and brainstormed their first draft.

Fall 2019 and Spring 2020

Building Your Portfolio: Participants learned about the content and purpose of a teaching portfolio on the academic job market, and began to assemble portfolios and polish teaching materials through peer review. (Online in Spring 2020)

Syllabus from Scratch: Participants explored key elements of an effective syllabus and defined learning goals and assessment methods to promote student learning. (Online in Spring 2020)

Writing a Teaching Statement: Participants gathered ideas and drafted components of their teaching statement, and shared drafts with peers for feedback.

SERVICES

The CTL offers a number of services to help graduate students at Columbia become reflective and effective instructors.

Consultations

Graduate students requested 946 one-on-one consultations with CTL staff to receive support for their teaching and learning needs. Common consultation topics included syllabus design, integrating instructional technologies into class activities, lesson planning, and creating and refining a teaching statement and teaching portfolio.

Microteaching

The CTL offered microteaching practice sessions for small groups of graduate students and postdocs to rehearse teaching practices and get direct feedback and support. These sessions were led by doctoral students who completed CTL training to become Microteaching Facilitators.

Mid-Course Reviews

The CTL offered Mid-Course Reviews for graduate student instructors seeking quick, anonymous student feedback on their teaching. This confidential service paired instructors with trained peer consultants who solicited feedback directly from students in the instructor's section or course. Participants gained insight on how their teaching practices impact students' learning in their course.

Teaching Observations

Graduate students requested teaching observations to receive individualized feedback on their teaching. Through a structured process, CTL-trained peer consultants observed instructors in the classroom and provided suggestions to improve their teaching. The CTL also worked with schools, programs, and departments seeking to refine their peer-to-peer teaching observation practices.

Teaching Consultants

Teaching Consultants are graduate students who are trained by the CTL to provide classroom teaching observations, facilitate microteaching sessions, and run mid-course reviews for graduate student peers who request these services.

2019-2020 *Senior Teaching Consultant:*

Zachary Domach, Religion

2019-2020 *Teaching Consultants:*

Sean Colonna, Music	**Catherine Hoar**, Earth and Environmental Engineering
Tara Kuruvilla, Art History and Archaeology	**Adam Matthews**, History
Anna Schirrer, Anthropology	**Mary Catherine Stoumbos**, Music

FELLOWSHIPS

CTL Fellowships provide Columbia doctoral students with an opportunity to apply for a paid, sustained professional development experience.

This year the CTL offered the Lead Teaching Fellowship, the Teaching Observation Fellowship, the Teaching Consultant opportunity, the Teaching Assessment Fellowship, the Technology and Design Fellowship, and the CIRTL Fellowship, as well as support for doctoral students attending teaching conferences.

Lead Teaching Fellows

Lead Teaching Fellows produce teaching-related events and workshops for peers in their home departments with support from the CTL. The fellowship provides an interdisciplinary professional development experience for students across campus who are committed to exploring and advancing pedagogical practices.

This year Senior Lead Teaching Fellows mentored a roster of 35 Lead Teaching Fellows as they designed and produced 72 teaching-related workshops and discussions across the University. See page 54 for a list of workshops facilitated by Lead Teaching Fellows for their schools and departments. Fellows also participated in a series of interdisciplinary gatherings to plan and reflect on their departmental events.

"The set-up of the microteaching service is excellent. The atmosphere of the group is incredibly valuable: the other participants and the facilitator take one another seriously, listen actively, and provide constructive critique. Without having opportunities like microteaching, TAs would be thrown into the classroom without a chance to practice and receive feedback on how they are doing. Therefore, I believe the microteaching sessions are essential to our training as teachers and communicators [...] The microteaching helped me see my strengths as a teacher, as well as what I need to work on to improve my skills. It helped me realize that I can restructure my lessons to center around the students, and create ways for bringing students into the lesson..**"**

— **Lian Kirit Limperis**, *Ph.D. student, Department of Biological Sciences*

SUPPORT FOR GRADUATE STUDENTS

2019-2020 *Senior Lead Teaching Fellows*

Alexander Ekserdjian, Art History and Archaeology	**Emma Le Pouésard,** Art History and Archaeology
Neil Foegen, Chemistryy	**Caitlin Morgan,** Classics
Palani Akana, Ecology, Evolution and Environmental Biology	**Velia Ivanova**, Music

Hadeel Assali, Anthropology	**Stephanie Ratté,** Anthropology
Olivia Clemens, Art History and Archaeology	**Lucy Wang,** Art History and Archaeology
Tomer Yavetz, Astronomy	**Zhexi Lin**, Chemical Engineering
Aladdin Douba, Civil Engineering and Engineering Mechanics	**Siyan Wang**, Civil Engineering and Engineering Mechanics
Elizabeth Heintges, Classics	**Cat Lambert**, Classics
Adam Massmann, Earth and Environmental Engineering	**Julian Spergel**, Earth and Environmental Science
Stefanie Siller, Ecology, Evolution & Environment Biology	**Prachi Patel**, Electrical Engineering
Abby Schroering, English and Comparative Literatures	**Xan Holt**, Germanic Language
Amy Leech, Germanic Languages	**Lynton Lees**, History
Isabella Livorni, Italian	**William Dougherty**, Music
Mary Catherine Stoumbos, Music	**John Raterman**, Nursing
Alan Burke, Pharmacology and Molecular Signaling	**Yarran Hominh**, Philosophy
Andrew Richmond, Philosophy	**Ricky Clark**, Political Science
Colleen Wood, Political Science	**Ellen Tedeschi**, Psychology
Grace Bickers, Religion	**Joseph Fisher**, Religion
Erica Eliason, Social Work	**Sam Han**, Social Work
Joss Greene, Sociology	**Miguel Ángel Garrido**, Statistics
Sandra Aguilar-Gomez, Sustainable Development	

Teaching Observation Fellows

Teaching Observation Fellows work closely with the CTL, peer mentors, and each other across the academic year to assess and reflect on targeted elements of classroom teaching. The fellowship helps them to develop critical perspectives on the design, implementation, and assessment of teaching by observing each other in various settings and offering structured feedback.

This year, two Senior Teaching Observation Fellows mentored 14 Teaching Observation Fellows. The Fellows participated in formal observations of one another's teaching, microteaching practice sessions, and observations of faculty. Upon completing the fellowship, Teaching Observation Fellows are qualified to join a cohort of trained Teaching Consultants in the CTL in future years

2019-2020 Senior Teaching Observation Fellow

| Tylar Colleluori, Italian | Katherine Fein, Art History & Archaeology |

2019-2020 *Teaching Observation Fellows*

Claire Dillon, Art History and Archaeology	**Emma Ianni**, Classics
Tim Randolph, Computer Science	**Caleb Tulloss**, Electrical Engineering
Lauren Horst, English and Comparative Literature	**Milan Terlunen**, English and Comparative Literature
Thomas Preston, Germanic Languages	**Hazel Rhodes**, Germanic Languages
Amanda Hardin, History	**Althea SullyCole**, Music
William Frey, Social Work	**Nicholas Pang**, Sociology
Sara Samuel, Sociomedical Sciences	**Anne Potter**, Theatre

Center for the Integration of Research, Teaching and Learning (CIRTL) Fellowship

CIRTL Fellowships are a key component of Columbia's institutional partnership with the Center for the Integration of Research, Teaching and Learning (CIRTL) Network. The fellowship provides science, technology, engineering, and math (STEM) doctoral students with opportunities to serve in a leadership role on campus and network with STEM leaders across more than 40 member institutions.

This year's CIRTL Fellows were Michael Ginsberg (Earth and Environmental Engineering) and Jeffrey Sherman (Electrical Engineering). Drawing on resources provided through the CIRTL Network and the CTL, they promoted and supported CIRTL learning communities and workshops on the Morningside and CUIMC campuses, contributed to CTL programming, and served as mentors to STEM peers during the year.

Teaching Assessment Fellows

Teaching Assessment Fellows (TAFs) are Columbia University doctoral students who work closely with the CTL during the academic year to support and assess teaching initiatives. TAFs engage directly with strategies and methodologies for evaluating the efficacy of teaching, as they help to analyze the impact of teaching projects proposed by Columbia faculty and funded by the Office of the Provost.

TAFs and Spring Project Assignments:

- **Valerie Bondura**, Anthropology: Consulted on several projects
- **Karin Christiaens**, Art History & Archaeology: Focus group and survey design and analysis for Applied

Regression (Martina Pavlicova, Public Health)

- **Jessie Oehrlein**, Applied Physics and Applied Mathematics: Quantitative and qualitative survey data analysis, CTL Inclusive Teaching: Supporting All Students in the College Classroom (MOOC)

- **Almudena Marín-Cobos,** Latin American and Iberian Cultures: Entry ticket data analysis, Hybrid Learning and Multilingualism: ReDesigning an Introductory Italian Course for Plurilingual Speakers (Barbara Spinelli, Italian)

- **Megan Goldring**, Psychology: Data analysis for Simulation Modeling and Analysis (Yi Zhang, IEOR)

- **Zachary Domach**, Religion: Survey design and analysis for DESIGN Online (Isobel Contento and Pamela Koch, Teachers College)

Technology & Design Fellows

CTL Technology & Design Fellows are doctoral students interested in user experience and information design, media analysis, and/or educational technology who work

Graduate students at the Fall 2019 Lead Teaching Fellow Kickoff event with CTL Assistant Director **Caitlin DeClercq**

closely with the CTL to improve the use of technology in learning. In Spring 2020, these fellows focused on Mediathread, a web-based community platform that supports multimedia analysis in many courses at Columbia and beyond. For more information about Mediathread, visit mediathread.info.

Technology and Design Fellows:

- **Alma Igra,** History
- **Kodiak Soled**, Nursing

Student Spotlight

Miguel Ángel Garrido, *Ph.D. Student in Statistics; Lead Teaching Fellow, 2019-2020*

On what he has enjoyed most about the Lead Teaching Fellowship....

Miguel: I would mention three experiences: First, getting to know better the teaching practices of my colleagues in the department; in particular what they enjoy doing and are really good at [...] Second, getting to see changes in the department and how the teaching experience of my peers is improving [...] Finally, last but not least, collaborating with my LTF peers, Senior Lead Teaching Fellow (program mentor), and people in the CTL: these conversations broadened my grasp about education across fields, helped me understand better the issues within my department, and provided creative solutions that sometimes are difficult to learn about if we do not leave our own disciplinary bubbles.

Teaching Conference Support

Doctoral students who wished to attend conferences or training centered on teaching practices in higher education were sponsored by the GSAS Office of the Dean and funded by the Office of the Provost. Students received funds for attending or presenting at a conference, or participating in training that helped them develop as instructors or explore discipline-based educational research (DBER).

Supported Students and Conferences

On how interacting with peers through the CTL and LTF program has strengthened his own teaching practices...

One of the things that I have appreciated the most is to work with people from other disciplines [...] Having to communicate with them and having to explain to them the rationale behind my ideas made me realize that biased perception is something we, as statisticians, need to overcome and fight against. This had great implications for my students: now I can better understand why they are struggling with a particular concept and how that can be related with the particular background they come from. In addition, it helped me improve my communication skills and manage in a more sophisticated way the different layers of profundity I need to use when I share my ideas.

A strategy from his own teaching practice that new graduate student instructors might consider incorporating into their own practice...

I think one of the most successful techniques that I introduced in my office hours is collaborative work among students: during my first years, I tried to do everything for my students and that wasn't a well-planned strategy. I ended up working too hard and students weren't learning as much as I wanted. Recently, I have redesigned my office hours to take on more of a workshop format: I give students the opportunity to discuss the problems with their colleagues and ask the questions they have. Students seem to be happier with the new environment, there is a higher participation in the office hours, and students—and I—get a more realistic picture of their knowledge and skill level.

Read the full Student Spotlight here:
ctl.columbia.edu/announcements/
student-spotlight-miguel-garrido/

- **Laura Bryson Tedford** (Germanic Languages) - American Council on the Teaching of Foreign Languages (ACTFL) Annual Convention, Washington, DC

- **Valerie Bondura** (Anthropology) - 2019 POD National Conference, Pittsburgh, PA

- **James Callahan** (Chemistry) - Biennial Conference on Chemical Education (BCCE), Corvallis, OR - cancelled due to COVID-19

- **Karin Christiaens** (Art History & Archaeology) - 2019 POD National Conference, Pittsburgh, PA

- **Richard Clark** (Political Science) - International Studies Association, Honolulu, HI - cancelled due to COVID-19

- **Zachary Domach** (Religion) - 2019 POD National Conference, Pittsburgh, PA

- **Katherine Fein** (Art History & Archaeology) - Bard College Institute for Writing and Teaching Core Workshop, Annandale-on-Hudson, NY

- **Rachel Field** (Biomedical Engineering) - ASEE Annual Conference & Exposition, Montreal - cancelled due to COVID-19

- **Almudena Marín-Cobos** (Latin American and Iberian Cultures) - 2019 POD National Conference, Pittsburgh, PA

- **Thomas Preston** (Germanic Languages) - American Council on the Teaching of Foreign Languages (ACTFL) Annual Convention, Washington, DC

- **Sara Samuel** (Sociomedical Sciences) - Global Health & Innovation Conference, New Haven CT) - cancelled due to COVID-19

- **Chloe Vaughn** (Germanic Languages) - American Council on the Teaching of Foreign Languages (ACTFL) Annual Convention, Washington, DC

- **Kevin Windhauser** (English and Comparative Literature) - College English Association, South Carolina) - cancelled due to COVID-19

- **Noah Zucker** (Political Science) - International Studies Association, Honolulu, HI - cancelled due to COVID-19

CUSTOMIZED PROGRAMS

- Three sessions for SEAS Orientation, August 26 and 28, 2019 (Framework for Teaching and Research, CTL Resource Panel, and Grading and Feedback)

**27 requests for customized workshops
72 workshops facilitated for departments by Lead Teaching Fellows
255 graduate student participants in customized workshops**

- Three IEOR department microteaching sessions, August 29, 2019

- Three Chemical Engineering department microteaching sessions, August 29, 2019

- Two APAM department microteaching sessions, August 30, 2019

- Five Core Preceptor microteaching sessions, August 28, 2019

- Inclusive Teaching Workshop, Core Orientation, August 29, 2019

- Active Learning session (Biology, Chemistry, Physics Departments), August 28, 2019

- Introduction to the Teaching Statement (School of Social Work), September 23, 2019

- Beyond Grades: Feedback for Learning (Sociology), October 28, 2019

- Representing Teaching in the Academic Job Market (MESAAS), November 11, 2019

- Beyond Grading: Techniques for Feedback (Sociology), November 22, 2019

- Introduction to the CTL (Sustainable Development), January 23, 2020

- Introduction to the CTL and Inclusive Teaching (Film Department), January 23, 2020

- Introduction to Mentorship for PDL (SEAS), January 29, 2020

- Colloquium on student motivation (MESAAS), March 23, 2020 (Online)

- Inclusive Syllabus Design, Core Orientation, May 22, 2020 (Online)

Peer Observation Programs

The CTL runs Peer Observation Programs (POP) in GSAS's Teaching Scholars program and the Core Curriculum. POP participants pair up, observe one another's classes, and debrief with each other while

drawing on guidance and instruments provided by the CTL. POP meetings in the CTL allow the full cohort of participants to prepare for and reflect on the peer observation process. The following POP programs were held in the 2019-2020 academic year:

- Teaching Scholars POP Kickoff, September 20, 2019
- Core POP Kickoff, October 16, 2019
- Teaching Scholars POP Mid-Semester Meeting, October 31, 2019
- Core POP Mid-Year Meeting, February 5, 2020

- Teaching Scholars POP Mid-Year Meeting, February 7, 2020
- Teaching Scholars POP Mid-Semester Meeting, March 11, 2020

Student Spotlight

Michael Ginsberg, *Ph.D. Student in Earth and Environmental Engineering; CIRTL Fellow, 2018-2020*

On his motivation to apply to be a CIRTL Fellow at the CTL...

Michael: "Educators have a tremendous influence on their students. They have the potential to inspire or discourage and the opportunity to shape the future not just through their research, but through their students. This entails a great deal of responsibility. In my experience both as a student and educator, middle and high school teacher, and technical trainer, I have learned that evidence-based teaching is a learned skill that takes new knowledge and practice. Being a CIRTL Fellow with the CTL has allowed me to explore my interest in cultivating a culture of evidence-based teaching and collaboration across disciplines at Columbia."

On what he has enjoyed most about being a CIRTL fellow....

"Being a CIRTL fellow has been incredibly enriching. I have most enjoyed developing the asynchronous online Teaching as Research (TaR) course for the Columbia community that we piloted in Spring 2020 [through the Assessing Teaching and Learning Seminar (Online)]. Also, I enjoyed taking the CIRTL course "Planning your TaR Project" where I got to plan my own TaR project. It has been great to be a part of the TaR leader learning community, and gain exposure to education research through the CTL Journal Club. Through all of these experiences, I have a much better understanding of how being a committed educator provides value to a university and is an integral part of a successful academic career."

On speaking as a panelist at the CIRTL Forum conference...

"The conference made me feel connected to the vibrant community of teaching and learning professionals throughout the network. Speaking as a panelist was a real honor and an affirmation of the importance of my work with the CTL. It gave me a platform to share my experience developing a TaR program and to reach out for collaboration. Preparing my remarks on being a change leader and on diversity, inclusivity, and equity made me think anew about my own life path in promoting positive change within universities, at times pushing the envelope, and just how aligned my work with the CTL is with this mission. In addition, the conference motivated me to become even more involved with the network through new research partnerships."

Read the full Student Spotlight feature on Ginsberg's teaching experience and insights at:
ctl.columbia.edu/announcements/
student-spotlight-michael-ginsberg/

LTF events are led by Lead Teaching Fellows to serve graduate student instructors in their respective departments. Below is a list of events designed and facilitated by Lead Teaching Fellows in the 2019-2020 academic year. In response to the rapid move to online teaching spurred by COVID-19, several Lead Teaching Fellows opted to create asynchronous resources to better meet the needs of their departmental colleagues in Spring 2020. These resources are listed below.

Anthropology

- Teaching Strategies for Political Charged Times (Hadeel Assali, Fall 2019)
- Building a Departmental Teaching Resource & Archive (Stephanie Ratté, Fall 2019)
- Anthropology TA Orientation (Stephanie Ratté, Spring 2020)

Art History and Archeology

- Grade-a-Thon: How to Give Qualitative Feedback (Lucy Wang, Fall 2019)
- Orientation for Incoming Teaching Assistants (Olivia Clemens, Fall 2019)
- The TA is In: Office Hours as Teachable Moments (Lucy Wang, Spring 2020)
- Online Resource: Art Humanities Instructors Peer to Peer Resource (Olivia Clemens, Spring 2020)

Astronomy

- Teaching Observation and Mentorship Network for Astronomy: Kick-Off Meeting (Tomer Yavetz, Fall 2019)
- Virtual Pedagogy and Teaching with Zoom (Tomer Yavetz, Spring 2020, Online)

Chemical Engineering

- Effective TA Strategy (Zhexi Lin, Fall 2019)
- How to Give Better Presentations (Zhexi Lin, Spring 2020)

Civil Engineering & Engineering Mechanics

- How to Foster Semester-long Research Groups in Lab Environment (AlaEddin Douba, Fall 2019)
- How to Make a Great Presentation (Siyan Wang, Fall 2019)

- Online Resource: Teaching Statement: Beyond TA Work (AlaEddin Douba, Spring 2020)
- Online Resource: Emerging from Your Ph.D. into a Faculty Position (Siyan Wang, Spring 2020)

Classics

- Facilitating Undergraduate Research in the Classics Classroom (Elizabeth Heintges, Fall 2019)
- Inclusive Teaching: Rubrics and (Re)Assessing Student Participation (Cat Lambert, Fall 2019)
- Bringing Antiquity to Life: Teaching with Material Culture and Columbia's Collections (Elizabeth Heintges, Spring 2020)
- On Not Knowing (X): Teaching without Expertise (Cat Lambert, Spring 2020)

Earth and Environmental Engineering

- Git for Course Deployment and Websites (Adam Massmann, Fall 2019)
- Document, Organize, Share: Make Your Course Contributions Immortal and Toss a Lifeline to Future TAs (Adam Massmann, Spring 2020, Online)
- Earth and Environmental Science
- Digital Tools in Natural Science Labs, The Best and the Worst (Julian Spergel, Fall 2019)
- Improving TA support in the Department of Earth and Environmental Sciences (Julian Spergel, Spring 2020, Online)

Ecology, Evolution and Environmental Biology

- Connect, Share, Learn: Enhancing the E3B TA Experience (Stefanie Siller, Fall 2019)
- Online Resource: What Makes a Mentor? Building Mentorship Skills and Practice (Stefanie Siller, Spring 2020)

Electrical Engineering

- Workshop on Teaching Practices in STEM Followed by Hands-on Outreach (Prachi Patel, Fall 2019)
- Compilation of Teaching Materials for Online STEM Outreach (Prachi Patel, Spring 2020, Online)

English and Comparative Literature

- Introduction to Teaching University Writing (Abby Schroering, Fall 2019)
- Online Resource: Motivating Students to Learn Online

During Times of Disruption (Abby Schroering, Spring 2020)

Germanic Languages

- Learner Autonomy in the Foreign Language Classroom (Xan Holt, Fall 2019)
- Authentic Materials in the Language Classroom (Amy Leech, Fall 2019)
- Effective Strategies for Classroom Discussion Online and Face-to-Face (Xan Holt, Spring 2020, Online)
- Inclusive Teaching in the Language Classroom (Amy Leech, Spring 2020)

History

- Next steps as a TA: Grading and Feedback (Lynton Lees, Fall 2019)
- Orientation for First-Time History TAs (Lynton Lees, Spring 2020, Online)

Italian

- Selecting, Introducing, and Incorporating Authentic Materials in the Italian Language Classroom (Isabella Livorni, Fall 2019)
- Participation in the Online Italian Language Classroom: Making Space for Students to Practice Production (Isabella Livorni, Spring 2020, Online)

Music

- Music Department Pedagogy Orientation (Mary Catherine Stuombos, Fall 2019)
- Graduate Teaching Orientation (William Dougherty, Fall 2019)
- Music Department Observation Workshop (Mary Catherine Stuombos, Spring 2020)
- Teaching with Zoom and Online Pedagogy Practices (William Dougherty, Spring 2020, Online)

Nursing

- Nurse Educators: The Next Generation (John Raterman, Fall 2019)
- Stage Tips for Teachers (John Raterman, Spring 2020, Online)

Pharmacology

- Coaching with Compassion: Improving Your Teaching, Mentoring, and Outreach with Emotional Intelligence (Alan Burke, Fall 2019)

- Online Resource: Demystifying Mentorship (Alan Burke, Spring 2020)

Philosophy

- Teaching Discussion Sections (Yarran Hominh, Fall 2019)
- Not Just a Grader—How to TA Effectively Without a Discussion Section (Andrew Richmond, Fall 2019)
- Teaching Online (Andrew Richmond, Spring 2020, Online)
- Redesigning an Offline Course for the Online Environment (Yarran Hominh, Spring 2020, Online)

Political Science

- Motivating Students to Learn (Colleen Wood, Fall 2019)
- The Case Study Approach to Undergraduate Teaching (Ricky Clark, Fall 2019)
- Effective Visual Aids and Teaching Materials (Colleen Wood, Spring 2020)
- Online Resource: Pedagogy in International Relations (Ricky Clark, Spring 2020)

Psychology

- Teaching an Effective Lab Section (Ellen Tedeschi, Fall 2019)
- Online Resource: Guide for Leading Review Sessions (Ellen Tedeschi, Spring 2020)

Religion

- Tips and Tricks for Activating Student Engagement (Joseph Fisher, Fall 2019)
- Activating Student Engagement Pt. II: Troubleshooting Common Problems (Grace Bickers, Fall 2019)
- Online Resource: The Virtual Frame, a Collaborative Teaching Blog (Joseph Fisher, Spring 2020)

Social Work

- Establishing peer-to-peer mentoring: Kickoff Meeting (Erica Eliason, Fall 2019)
- Enhancing the TAing/Teaching Experience: Focusing on the Application of Backward Design (Sam Han, Fall 2019)
- Teaching Opportunities in the CSSW Doctoral Program (Erica Eliason, Spring 2020)
- CSSW Doctoral Program Alumni Panel (Erica Eliason,

Spring 2020, Online)

- Lessons for Career and Teaching Development from Alumni (Sam Han, Spring 2020, Online)

Sociology

- Lesson Planning 101 (Joss Greene, Fall 2019)

- How to Deal with "Free Speech" (Joss Greene, Fall 2019)

- How to Facilitate a Strong Discussion (Joss Greene, Spring 2020)

- Teaching While Marginalized (Joss Greene, Spring 2020)

- Online Resource: Teaching Writing in a Sociology Classroom (Joss Greene, Spring 2020)

Statistics

- How to be a (Statistically Significant) Good TA and Not Die Trying (Miguel Ángel Garrido, Fall 2019)

- Online Resource: Collaborative Office Hours Using Zoom (Miguel Ángel Garrido, Spring 2020)

Sustainable Development

- Interdisciplinary Syllabus Design (Sandra Aguilar-Gomez, Fall 2019)

- The Basics of Active Learning (Sandra Aguilar-Gomez, Spring 2020)

THE GSPS IMPACT: EXTENDING GRADUATE STUDENT SUPPORT ACROSS CAMPUS

The CTL collaborates with various academic departments and programs to help them plan, design, and implement new in-house teaching development opportunities for their graduate students. The aim is to seed a sustainable initiative for the department or program to implement on its own and refine in the future. Below are three case studies:

Case Study #1: Supporting the Core Curriculum's New Preceptor Orientation

Context: Approximately 45 graduate students newly enter into Preceptorships each year across three of the five Core courses—Literature Humanities, Contemporary Civilization, and Art Humanities. The Core Curriculum's annual Orientation for New Preceptors (ONP) provides guidance for these new instructors. In 2018, the Core

identified a need for greater and sustained instructional preparation for new Preceptors, including earlier onboarding, a more extended ONP, and more emphasis on inclusive instructional practices. The Core reached out to the CTL to help support these identified needs.

Process: The redesign of the ONP was a yearlong project. The CTL surveyed Preceptors to determine support needs and discussed ideas for new ONP activities with faculty chairs and Core administrators. Afterwards, the CTL drafted a proposed restructuring of the orientation, which was revised in tandem with administrators and chairs. The new ONP launched in 2019 as an expanded program entailing two days of workshops, discussions, and microteaching. The CTL prepared Core Lecturers to run the microteaching sessions and transferred workshop materials to the Core office for use in future years.

Outcome: The ONP is now a multipart program that infuses community building into theoretical and practical preparations for entering into a Core Preceptorship. While the CTL remains involved in the design and delivery of pedagogical training, the Core runs community-building and content-specific activities. Participant survey data has shown immediate impact, including an increase in confidence among new Preceptors.

Case Study #2: Scaling and Improving Teaching Development in Physics

Context: The Director of Undergraduate Studies in Physics approached the CTL in 2017 to help support the department's introductory physics lab course for non-majors. All first-year and many second-year graduate students in the department are TAs for this large course, most of them teaching for the first time. Increased support for these TAs thus has an outsized impact on both graduate student teaching development and introductory-level instruction in the department.

Process: To scale training, the CTL helped design and implement a peer support model for all first- and second-year doctoral students in the department. This model includes: a peer observation program, in which second-year TAs observe first-year TAs leading lab sessions; a mock lab, in which first-year TAs work through labs together as if they were students and debrief with more experienced peers; sessions to compare grading and establish norms around the application of rubrics, and microteaching practice sessions. Over time the CTL transitioned from active support to an advisory role.

Outcome: Over 50 graduate students participated in this

peer support model from 2017-2019, with head TAs now leading administration and training. This program was awarded a Provost Large Scale Teaching and Learning Grant in 2019-20 to extend this model to recitation sections in the department.

Case Study #3:
Extending a Diversity Statement Workshop at ZMBBI

Context: In 2019 the Zuckerman Mind Brain Behavior Institute (ZMBBI) and the Office of Postdoctoral Affairs (OPA) approached the CTL GSPS team with a request to present a diversity statement workshop for postdocs at the ZMBBI/OPA joint Academic Job Market Bootcamp in Summer 2019.

Process: Rather than simply running this workshop, CTL staff devised a process to help ZMBBI administrators lead future diversity statement programs on their own. CTL staff defined a handoff protocol which would result in the Scientific Program Manager at ZMBBI facilitating the session with materials co-developed by the CTL, OPA, and ZMBBI. CTL staff met with these partners several times to plan the session, create resources, run trial presentations, and give feedback, until they were ready to run the session on their own.

Outcome: 25 postdocs attended the inaugural session in person, and more joined online. ZMBBI is now able to continue to give this training when and however is best suited to local needs, and to continue to highlight values that underpin such training

Instructional Technology Support —

The CTL Instructional Technologies group leverages its extensive experience with the purposeful use of media and technology to support teaching and learning projects and services. Working collaboratively with Columbia instructors and CTL colleagues, the Instructional Technologies group engages in a range of projects requiring software development, interface and experience design, media production, and project management, while maintaining a service-oriented disposition.

The two primary teams within the group are the media production team and the software development and design team. Both teams seek to build digital experiences to augment curricula and explore how technology can further the learning experience. All CTL projects adhere to best practices, using well-documented processes to create effective and accessible content, tools, and resources, much of which also benefit audiences beyond the university.

The group advocates and provides oversight for a range of educational technology platforms. Serving as the primary representative to the University's IT Leadership Council and the Academic Technologies Leadership Group, the CTL Instructional Technologies group ensures that the CTL's practices are compliant with University policies around accessibility, identity protection and data stewardship, issues that have become increasingly complex.

In late Summer 2019, the Instructional Technologies team moved offices from 603 Lewisohn Hall to 201-206 International Affairs Building within the Lehman Social Science Library. This larger space is now shared with staff from the Science of Learning Research (SOLER) Initiative. The CTL also set aside an enclosed office in this space to be used as a recording studio. Work for the studio began in Fall 2019.

The CTL Instructional Technologies group was instrumental in developing, supporting and implementing many in-person and online sessions, resources, and systems to support faculty, staff, and graduate student instructors in the transition to remote teaching due to COVID-19. The group also provided all CTL staff support with the infrastructure, internal communication, and training necessary to transition successfully to working remotely. For more details on this work, refer to the CTL Response to COVID-19 section on page 14.

Instructional Technology Projects in 2019-2020

SUPPORT FOR PROVOST'S TEACHING AND LEARNING GRANTS

The Instructional Technologies group is an essential resource for the Provost's Teaching and Learning Grants, including the Innovative Course Design Grant and the Massive Open Online Courses (MOOCs) Grant. The group provides project management, media production, software development, and technology expertise to faculty partners. (See page 20 for the full list of 2019-2020 Provost's Teaching and Learning Grant projects).

Below are highlighted projects that required considerable work from the Instructional Technologies group in the 2019-2020 academic year:

Simulating the Universe: Stimulating Active Learning

David Helfand, *Professor and Chair, Department of Astronomy*

CTL staff worked with David Helfand to develop online simulations of astronomical events and objects for his course Earth, Moon, and Planets, as part of an Innovative Course Design Grant. CTL staff ported and enhanced eight flash-based astronomy simulations, providing visual and interactive representations of the course material to encourage active learning among students.

URL: columbiactl.github.io/astro-simulations/

Books to Bytes: Navigating the Research Ecosystem

Barbara Rockenbach, *Associate University Librarian for Research and Learning, Columbia University Libraries*

CTL staff worked with the Libraries Teaching & Learning Committee to develop a curriculum that grounds novice students in key research competencies and exhibits Columbia Libraries' many resources and offerings. The From Books to Bytes series includes core videos that use animation to explain complicated concepts as well as digitally accessible PDF handouts, worksheets, and an assessment toolkit that can be used by instructors and librarians in their teachings. The series launches in Fall 2020.

Digital Guidebook

Peter Susser, *Director of Undergraduate Musicianship, Department of Music*

CTL developers and designers worked with Peter Susser to create an interactive and engaging digital guidebook around musical improvisation as part of the Large Scale Teaching and Learning Grant project "Digital Ear Training Improvisation Initiative." The goal of the project was to provide a tool for adjunct professors to enhance their classrooms' ear training pedagogy. The guidebook will be used for Fall 2020 classes.

EconPractice

Thomas Groll, *Lecturer, Discipline of International and Public Affairs, SIPA*

In 2018, CTL staff worked with Thomas Groll to develop EconPractice, an online environment for authoring and interacting with economics concepts, as part of his Innovative Course Design Grant project "Adaptive e-Learning in Economics." This year, CTL developers performed a targeted development round on EconPractice to support course affiliation, which expanded the audience of this graphing application.

URL: econpractice.ctl.columbia.edu

Introduction to Grief Therapy

M. Katherine Shear, *Marion E. Kenworthy Professor of Psychiatry in Social Work, School of Social Work*

CTL staff worked with M. Katherine Shear to redesign her online course Introduction to Grief Therapy with the support of an Innovative Course Design Grant. Together they developed video models of the Complicated Grief technique to ready social workers to provide grief therapy on topics such as bereavement and loss, and to prepare them for recognizing and addressing problems that require intervention. The videos aim to provide students with clinical skills and knowledge as well as strategies for assessment, active listening, and micro-interventions.

Locus Tempus: Learning Through Time & Spacee

CTL learning designers, developers, and UX professionals are building a new tool, Locus Tempus, to allow faculty and students to collaboratively identify, organize, and visualize geolocated materials within a course context. Locus Tempus intends to leverage a geospatial environment to engage students as repository builders, researchers and curators. The combination of skills required to collect and compose materials in time and space can spark deeper learning, surface unexpected patterns and generate new ideas. The project will be available for use in classrooms in Fall 2020.

Video Newsroom: Meeting the Needs of a New Generation

Nina Alvarez, *Assistant Professor, Columbia Journalism School* **Amy Singer**, *Adjunct Faculty, Columbia Journalism School*

As part of an Innovative Course Design Grant, Video Newsroom, an interdisciplinary course in the Journalism School that combines reporting, writing, video and editing techniques, underwent a full redesign to better prepare students for modern multimedia news journalism. CTL media and project management staff collaborated with Nina Alvarez and Amy Singer to conceptualize and create original instructional videos for use in flipped lessons, in-person lectures and demonstrations, and other active learning experiences. CTL learning designers configured the course flow using best practices in scaffolding and sequencing of learning modules and developed rubrics for use in broadcast and digital news learning material.

Additional Project Development

CUIMC Interprofessional Education (IPE) Program

Rita Charon, *Executive Director, Program in Narrative Medicine; Professor of Medicine, CUIMC*

CTL staff supported CUIMC's Interprofessional Education (IPE) program, offered in October 2019 to over 800 students. The course, created by Rita Charon, brought together interprofessional teams to experience relationship-building, description of clinical roles and responsibilities, and clinical decision-making. CTL learning and user-interface designers worked to create an intuitive and compelling learning experience as the course foundation.

Footprints

Marjorie Lehman, *Associate Professor of Talmud and Rabbinics, Jewish Theological Seminary* **Michelle Chesner**, *Norman E. Alexander Librarian for Jewish Studies, Columbia Libraries*

CTL developers and designers collaborated with Marjorie Lehman and Michelle Chesner to create Pathmapper, a new feature for the Footprints application. Footprints visualizes the historical journey of Jewish books through time and space in a sophisticated interface that blends maps, timelines, and tabular data.

URL: footprints.ctl.columbia.edu/pathmapper

Mediathread

Mediathread, a unique web-based media annotation tool launched by the CTL in 2010, is embedded in dozens of Columbia courses each semester to allow for collaborative exploration, annotation, and analysis of multimedia content, including video, audio, and images. This year, CTL staff performed a substantial refresh on the application to modernize its user interface, improve application flow and consistency, and fold in accessibility features. The work resulted in a more inclusive, learner-centered, and reflective educational experience. CTL staff were guided in their efforts by a newly-formed faculty advisory board and two graduate student fellows. These new features will be rolled out in Summer and Fall 2020. The Mediathread platform was utilized in 87 courses this year, with students creating 11,312 media annotations.

URL: mediathread.ctl.columbia.edu/

Oral Health Care in the Opioid Epidemic

Burton Edelstein, *Professor, Dental Medicine and Health Policy and Management, College of Dental Medicine, CUIMC* CTL staff worked with Burt Edelstein and his team at the College of Dental Medicine to create an online resource to teach dental students how to identify patients at risk for opioid addiction. The team created a valuable digital communications solution to simultaneously educate, inform and persuade dental practitioners to use their existing skills to help reduce opioid abuse in their patient population

URL: ohcoe.ctl.columbia.edu/.

CTL Media Producer Abie Sidell takes photographs of a Students as Pedagogical Partners session

Technology Platforms and Support: Security and Accessibility Updates

The Instructional Technologies group completed critical infrastructure work in late Summer 2019 to upgrade CTL systems to the latest hardware and core software versions. The group is enhancing its security posture by partnering with CUIT to incorporate regular vulnerability scanning.

The group continues to integrate Universal Design for Learning (UDL) and accessibility (thinking and experience) into their software design and media production practices by ensuring all new work meets or exceeds accepted standards. Group members participate in Columbia University and wider community accessibility efforts. Work was also undertaken to bring the CTL website in line with accessibility standards.

The group reflects and writes about its work in service to teaching and learning via the Compiled blog, producing 16 articles over the past year.

URL: compiled.ctl.columbia.edu

MASSIVE OPEN ONLINE COURSES (MOOCS)

The CTL provides comprehensive production and media support for the design, creation, and delivery of MOOCs using two partner organizations: edX and Coursera.

MOOCs Released in 2019-2020:

Protection of Children in Humanitarian Settings

Mark Canavera, *Associate Director, Care and Protection of Children (CPC) Learning Network, Mailman School of Public Health* **Mike Wessells**, *Professor, Program on Forced Migration and Health* **Hanna-Tina Fischer**, *Associate, Program on Forced Migration and Health, Mailman School of Public Health*

Released: July 31, 2019

This course examines how children's social environments within their families, communities and societies influence their adversity, development, and resilience. Course participants engage in critical thought about current international child protection practices and how to strengthen them.

New Editions and Re-releases in 2019-2020

Corporate Finance Series - Professional Certificate

Daniel Wolfenzon, *Stefan H. Robock Professor of Finance and Economics, Columbia Business School*

Fourth and fifth editions released: August 7, 2019 and January 15, 2020

- Three course series:
- Introduction to Corporate Finance
- The Free Cash Flow Method for Firm Valuation
- Risk and Return and the Weighted Average Cost of Capital

MOOCs Active in 2019-2020

Attaining Higher Education

Beth E. Morgan, *Director of Higher Education Transition and Partnerships, Center for Veteran Transition and Integration, School of General Studies*

Released: April 3, 2019

Attaining Higher Education is specifically targeted at active-duty service members and veterans investigating entering the world of higher education. Led by a team of instructors with experience in admissions, financial aid, and transition support services, Attaining Higher Education breaks down the process of transition to academic life and assists service members in finding an educational program to fully maximize their potential. The course is available on edX.

Inclusive Teaching: Supporting All Students in the College Classroom

Amanda Irvin et al., *Director of Faculty Programs & Services, Columbia CTL*

Released: June 29, 2019

The CTL launched the first ever MOOC dedicated entirely to the topic of inclusive teaching in higher education. Inclusive Teaching: Supporting All Students in the College Classroom provides practical, accessible, and usable strategies that instructors can implement in their classrooms to create and maintain a supportive learning environment for all students. The self-paced course is open to all and available on the edX platform.

Indian & Tibetan River of Buddhism

Robert A. F. Thurman, *Jey Tsong Khapa Professor of Indo-Tibetan Studies, Department of Religion*

Released: May 15, 2019

Indian & Tibetan River of Buddhism explores the history and philosophy of Buddhism throughout India, South and Southeast Asia, Tibet, and Central Asia, featuring the basics of the Buddhist view of reality and its educational

Course image for Protection of Children in Humanitarian Settings MOOC

principles of sciences, mind, and social ethics. The course is available on the edX platform

(1) *Soins infirmiers en VIH pediatrique* (2) *Traitement antirétroviral - VIH*

Susan Michaels-Strasser, *Assistant Professor, Epidemiology (in ICAP), CUIMC*

Released: March 27, 2019

French versions of previously released courses.

Women Have Always Worked - XSeries

Alice Kessler-Harris, *R. Gordon Hoxie Professor of American History, Department of History*

New edition released: January 30, 2019

Four course series:

- *Seeking Women's Rights: Colonial Period to the Civil War*
- *Wage Work for Women Citizens: 1870-1920*
- *Negotiating a Changing World: 1920-1950*
- *Fighting for Equality: 1950–2018*

MEDIA PRODUCTIONS

The media team produces impactful videos for online courses, resources for instructors, and promotional materials that leverage digital pedagogy and expand the CTL's visibility. The media team has established their expertise as producers and thought leaders in the field of classroom and online teaching and learning. Their work focuses on using new video technologies to produce course content that maximizes learning and follows best practices for digital accessibility.

Media Projects in 2019-2020

Below are highlighted media projects from the 2019-2020 academic year:

Intensive Elementary Italian for Plurilingual Speakers

Barbara Spinelli, *Senior Lecturer, Department of Italian*

The CTL media team produced graphics and animation for Barbara Spinelli's Innovative Course Design project on Intensive Elementary Italian to demonstrate the complex concept of multilingualism and its cognitive benefits in teaching languages

Faculty Spotlight Video

Angelina Craig-Flórez, *Senior Lecturer, Department of Latin American and Iberian Cultures*

The media team produced a spotlight video of Angelina Craig-Florez to highlight her Innovative Course Design Grant project "Beyond the Textbook: A Hybrid Redesign for Spanish Intermediate II". The video delves into Professor Craig-Flórez's reasoning for the course redesign, her experience working with the CTL, and her students' experiences in the new course.

Additional Videos Produced

The media team produced and filmed videos for the following CTL and Office of the Provost events, resources, and campaigns throughout the year:

- New Faculty Orientation
- Celebration of Teaching and Learning Symposium
- Provost's Conversations on Online Learning
- Canvas Delegated Access
- Using Zoom
- Thank-a-Prof / Thank-a-TA
- CTL promotional video
- Engaging Your Students with Poll Everywhere
- Teaching with the Case Method

Internal and External Engagement —

Publications

- Jenkins, R. J., & Stengel, P. J. (2019). Scaling open educational resources for student veterans and the challenges of assessing their impact. 2019 IEEE Learning With MOOCS (LWMOOCS), 59–63. doi:10.1109/LWMOOCS47620.2019.8939652

- Kachani, S., Ross, C., and Irvin, A. (2020, February 19). 5 Principles as pathways to inclusive teaching. Inside Higher Ed. https://www.insidehighered.com/advice/2020/02/19/practical-steps-toward-more-inclusive-teaching-opinion

Conference Presentations and Invited Workshops

- Althouse, I., Flatgard, A. (2020, May). Essentials of teaching and learning: Encounter, engage, reflect. Invited workshop series for the Masters in Design Studies capstone course at CENTRO, Mexico City, Mexico.

- Althouse, I., Chen, C. V. H.-H., DeClercq, C., Ruggeri, N., Woods, L. (2019, November). Organizing graduate student collaborations at centers: A framework for growth. Roundtable held at the 2019 POD Network Conference, Pittsburgh, PA.

- Althouse, I. Schuldt, H. (2019, November). Closing the distance: Expanding online opportunities for professional development. Roundtable held at the 2019 POD Network Conference, Pittsburgh, PA.

- Chen, C. V. H.-H., Greenler, R. (2019, November). Teaching online teaching. Roundtable held at the 2019 POD Network Conference, Pittsburgh, PA.

- DeClercq, C. (2019, November). Teaching by design: Classroom 'hacks' to support student learning. Interactive session held at the 2019 POD Network Conference, Pittsburgh, PA.

- Foo, J. C. (2020, May). Lessons learned while pursuing a career in faculty development. Invited plenary presentation for Cornell University's 2020 Connecting Research and Teaching Conference, online.

- Guberman, D., Phillipson, M., Wright, M. (2019,

November). Track changes: Challenges of assessing teaching development certificate programs. Roundtable held at the 2019 POD Network Conference, Pittsburgh, PA.

- Guzman, J. (2020, June). Building a DIY recording studio and supporting media creation with universal design for learning and the community of inquiry." Online Learning Consortium Conference, online.

- Irvin, A., Foo, J. C., and Klaf, S. (2019, November). Closing the distance: Moving faculty development online. Roundtable held at the 2019 POD Network Conference, Pittsburgh, PA.

- Irvin, A. (2019, October). Team-based learning: Group work that works. Invited session at City University, Hong Kong.

- Jenkins, R. J., and Stengel, P. (2019). Scaling open educational resources for student veterans and the challenges of assessing their impact. Paper presented at Learning with MOOCs at the Milwaukee School of Engineering, Milwaukee, WI.

- Klaf, S. (2020, February). Engaged lecturing. Invited workshop for the School of Visual Arts, New York, NY.

- Klaf, Suzanna. (2020, February). Learning Through Discussion. Invited workshop for the School of Visual Arts, New York, NY.

- Klaf, S. (2020, February 7 & 25). Small changes to foster inclusive teaching. Invited workshop held twice for the School of Visual Arts, New York, NY.

- Mustapha, Z. (2020, January). EdTech and HigherEd: Considerations for digital accessibility. Presentation at A11yNYC - Accessibility New York City Meetup, New York, NY.

- Mustapha, Z. (2019, July). Authoring in Wagtail with accessibility in mind. Presentation at Wagtail Space USA 2019, Philadelphia, PA.

- Ross, C. (2019, September). Inclusive teaching. Invited workshop at Baldwin Wallace University, Berea, OH.

- Ross, C., and Irvin, A. (2020, June). Inclusive teaching online. Invited session at Peking University, online.

- Yasuhara, K., Chaudhury, S. R., Foo, J. C., McCauley, A., Mercedez, C. D., Seiler, M.; Utschig, T., Wallace, M., and White, B. (2019, November). Connecting

with STEM educators: Conversations addressing challenges and opportunities. Interactive session held at the 2019 POD Network Conference, Pittsburgh, PA.

Representation at Conferences and Events

- AAEEBL Annual Meeting. Bronx, NY, July 16-18, 2019.
- ASEE 2020 Annual Conference. Online, June 22-26, 2020
- Atlassian Team Tour. New York, NY, February 11, 2020.
- Automation in Jira. Online, April 15, 2020.
- AWS Security Week 2019. New York, NY, August 27, 2019.
- Developing Medical Educators of the 21st Century course. San Francisco, CA, February 10-13, 2020.
- Emerging Technologies Colloquium:
    - Extended Realities (XR). New York, NY, September 27, 2019.
    - Google AI. New York, NY, October 18, 2019.
    - Apple@Columbia and Machine Learning with CoreML. New York, NY, December 13, 2019.
- FOSDEM 2020. Brussels, Belgium, February 1-2, 2020.
- Ivy+ Directors Meeting, Online, April 30, 2020.
- Perspectives Conference Women+Infosecurity. New York, NY, October 2, 2019.
- POD Network 2019 Annual Conference, Pittsburgh, PA, November 12-17, 2019.
- PyGotham 2019. New York, NY, October 4-5, 2019..

Columbia University Committee Work

- CTL Staff. Digital Community at Columbia.
- CTL Staff. Emerging Technologies Consortium.
- CTL Development Staff. Virtualization Working Group.
- Foo, J. C. CC-SEAS Academic Integrity Working Group.
- Foo, J. C. SEAS Committee on Instruction.
- Hall, M., Co-Chair, CUIMC Education Resource Committee (ERC).
- Hall, M. MSPH Vice Dean of Education Search Committee.
- Hall, M., and Guzman, J. CDM Curriculum Innovation Committee.
- Hall, M., and Kingon, A. VP&S MD Educate Subcommittee.
- Hall, M., and Kingon, A. VP&S MD Fundamentals Curriculum Subcommittee.
- Hall, M., and Kingon, A. CUIMC CoVID-19 Dean of Students Planning Committee.
- Kingon, A. CUIMC Education Technology Advisory Council.
- Kingon, A. CUIMC Post COVID-19 Education Task Force Online Teaching and Learning Best Practice Subcommittee.
- Kingon, A. CUIMC Post COVID-19 Education Task Force Simulations and Laboratory Subcommittee.
- Kingon, A. VP&S MD Fundamentals Curriculum Revision Committee.
- Matiz, M. Provost's Faculty Advisory Committee on Online Learning.
- Matiz, M., and Dreher, S. Information Technology Leadership Council.
- Matiz, M., Ogden, S., Hall, M., Kingon, A., and Rowe, J. Academic Technology Leadership Group.
- Ross, C. Educational Policy and Planning Committee (EPPC), EPPC. Subcommittee on Inclusion and Diversity and Subcommittee on Evaluation of Teaching.
- Ross, C. Evaluation of Teaching Subcommittee
- Ross, C. Senate Education Committee

External Committees and Boards

- Chen, C. V. H.-H. 6th CIRTL Forum Planning Committee.
- Hentrich, N. Equity, Diversity, and Inclusion in Teaching (EDIT) Media. Teaching Committee.
- Hentrich, N. Society for Cinema and Media Studies. Steering Committee for the Critical Media Pedagogy scholarly interest group.
- Irvin, A. *The Scholarly Teacher.* Editorial Review Board.

Appendix A:

CTL Leadership and Staff

Leadership Council

Soulaymane Kachani, Vice Provost for Teaching, Learning, and Innovation; Senior Vice Dean and Professor, Fu Foundation School of Engineering and Applied Science	**Catherine Ross**, Executive Director, Center for Teaching and Learning

A. Maurice Matiz, Senior Director, Instructional Technologies	**Michelle V. Hall**, Director, CUIMC Programs and Services
Amanda Irvin, Director, Faculty Programs and Services	**Mark L. Phillipson**, Director, Graduate Student Programs and Services
Sandesh Tuladhar, Assistant Provost for Online Education, Office of the Vice Provost for Teaching, Learning, and Innovation	

Below is a list of staff at the Center for Teaching and Learning.

Assessment and Evaluation

Melissa Wright, Associate Director

Communications and Outreach

Laura Nicholas, Manager

Faculty Programs and Services

Amanda Irvin, Director	**Suzanna Klaf**, Associate Director
Jessica Rowe, Associate Director, Instructional Design	**John C. Foo**, Assistant Director, Science and Engineering
Rebecca Petitti, Assistant Director	**Paul Joseph Stengel**, Senior Learning Designer
Aurora Collado, Learning Designer	**Andrew Corpuz**, Learning Designer
Mike Tarnow, Learning Designer, Science and Engineering	**Nicole Hentrich**, Learning Designer
Lakshmi Nair, Learning Designer	

CUIMC Programs and Services

Michelle V. Hall, Director	**Ashley Kingon**, Associate Director
Nigel Frazier, Learning Designer	**Jason Guzman**, Learning Designer

Graduate Student Programs and Services

Mark L. Phillipson, Director	**Ian Althouse**, Senior Assistant Director
Christopher Chen, Senior Assistant Director	**Caitlin DeClercq**, Assistant Director

Instructional Technologies

A. Maurice Matiz, Senior Director	**Stephanie Ogden**, Associate Director
Susan Dreher, Associate Director	**Vincent Aliberto**, Senior Media Producer
Devon Anirudh, Senior Technical Specialist	**Alexis Aurigemma**, Media Producer
Nick Buonincontri, Programmer	**Michael R. Deleon**, Senior Media Producer
Natalia Dittren, Associate Programmer	**Jon Hanford**, Video Technical Specialist
Meesha Meksin, Project Manager	**Zarina Mustapha**, Senior Front-end Developer
Nik Nyby, Senior Programmer	**Marc A. Raymond**, Senior Designer
Abie Sidell, Media Producer	

Administration

Sarah Carswell, Executive Assistant	**Teresa Gonzalez**, Administrative Coordinator
Sayaka Tsuda, Programs Coordinator	

Appendix B:

CTL Advisory Board

Soulaymane Kachani, *Co-Chair* Vice Provost for Teaching, Learning, and Innovation; Senior Vice Dean and Professor, Fu Foundation School of Engineering and Applied Science	**Catherine Ross**, *Co-Chair* Executive Director of the Center for Teaching and Learning
Carlos Alonso Dean, Graduate School of Arts and Sciences; Morris A. & Alma Schapiro Professor in The Humanities, Vice President for Graduate Education, Faculty of Arts and Science	**Sarah Cole** Parr Professor of English and Comparative Literature; Dean of Humanities, Faculty of Arts and Sciences
Pat Grieve Nancy and Jeffrey Marcus Professor of the Humanities, Department of Latin American and Iberian Cultures, Faculty of Arts and Sciences	**Fredrick Harris** Professor of Political Science; Dean of Social Sciences, Faculty of Arts and Sciences
Julia Hirschberg Percy K. and Vida L. W. Hudson Professor of Computer Science	**Lisa Hollibaugh** Dean of Academic Affairs, Columbia College
Kris Kavanaugh Associate Vice President, Columbia Libraries	**Julie Kornfeld** Vice Provost for Academic Programs; Associate Professor of Epidemiology, Columbia University Medical Center
Ellen Meier Professor of Practice, Teachers College; Director of the Center for Technology and School Change	**Janet Metcalfe** Professor of Psychology; Director of Graduate Studies, Department of Psychology, Faculty of Arts and Sciences
Dennis Mitchell Vice Provost for Faculty Advancement; Professor of Dental Medicine (Community Health and Periodontics); Senior Associate Dean for Diversity, College of Dental Medicine	**Barclay Morrison** Professor of Biomedical Engineering; Vice Dean of Undergraduate Programs, Fu Foundation School of Engineering and Applied Science

Letty Moss-Salentijn Edward V. Zegarelli Professor of Dental Medicine (in Anatomy and Cell Biology); Vice Dean for Curricular Innovation and Interprofessional Education in the College of Dental Medicine	**Diana Rose Newby** Graduate student, Department of English and Comparative Literature
Justin Pearlman Vice Provost for Communications and Engagement, Office of the Provost	**Brent Stockwell** Professor of Biological Sciences and Chemistry, Department of Biological Sciences, Faculty of Arts and Sciences
Anne Taylor John Lindenbaum Professor of Medicine; Vice Dean, Academic Affairs, Vagelos College of Physicians and Surgeons; Senior Vice President for Faculty Affairs and Career Development at the Columbia University Medical Center	**Ann Thornton** Vice Provost and University Librarian, Columbia University Libraries
Miguel Urquiola Professor of Economics and International and Public Affairs, School of International and Public Affairs; Chair of the Department of Economics	**Greg Wawro** Professor of Political Science; Chair, Department of Political Science, School of Arts and Sciences

Appendix C:

Data Summary of AY 2019-2020 Programs and Services

1 a. Unique Individuals Served by the CTL

By University Status/Affiliation

Faculty	1,819
Graduate students	1,274
Administrators and university staff	815
Postdocs	56
Research scientists and scholars	46
Undergraduate students	18
Total	4,028

By School

Arts and Sciences	1,936
Barnard College	98
College of Dental Medicine	47
Vagelos College of Physicians and Surgeons	279
Columbia Business School	53
Columbia Law School	130
Fu Foundation School of Engineering and Applied Science	362
Graduate School of Journalism	93
Jewish Theological Seminary	72
Mailman School of Public Health	186
School of Architecture, Planning and Preservation	42
School of International and Public Affairs	177
School of Nursing	115
School of Social Work	158
Teachers College	74
Other academic units	151
Other non-academic units	101
Total Columbia-affiliated individuals	4,074

Total external visitors	72
Total unique individuals served	4,146

1 b. CTL Interactions with Clients

By University Status/Affiliation

Faculty	5,006
Graduate students	4,133
Administrators and university staff	1,972
Postdocs	149
Research scientists and scholars	96
Undergraduate students	54
Total	11,410

By School

Arts and Sciences	5,833
Barnard College	201
College of Dental Medicine	182
Vagelos College of Physicians and Surgeons	715
Columbia Business School	106
Columbia Law School	272
Fu Foundation School of Engineering and Applied Science	992
Graduate School of Journalism	191
Jewish Theological Seminary	275
Mailman School of Public Health	525
School of Architecture, Planning and Preservation	70
School of International and Public Affairs	358
School of Nursing	476
School of Social Work	355
Teachers College	184
Other academic units	444
Other non-academic units	237
Total Columbia-affiliated interactions	11,416

Total external visitor interactions	253
Total interactions	11,669

2. Programs and Events

Client Interactions By Program Type

Workshops	2,978
University-wide events	243
Teaching orientations	226
Institutes	31
Outreach events	339
Total program and event interactions	3,817

3. Services

Client Interactions By Program Type

Consultations	3,154
Project consultations	1,062
Teaching and course consultations	757
Program planning consultations	96
Assessment and evaluation consultations	157
Professional development consultations	297
Instructional technology consultations	247
School/Department/Program consultations	294
CTL Fellows support consultations	225
DIY Media consultations	19
Platform training and support (Canvas, EdBlogs, Mediathread, etc.)	1,668
Total services interactions	4,822

Center for Teaching and Learning