



Center *for* Academic Innovation

Open Learning Experiences

IMPACT REPORT Summer 2020





CENTER FOR ACADEMIC INNOVATION

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EXECUTIVE SUMMARY

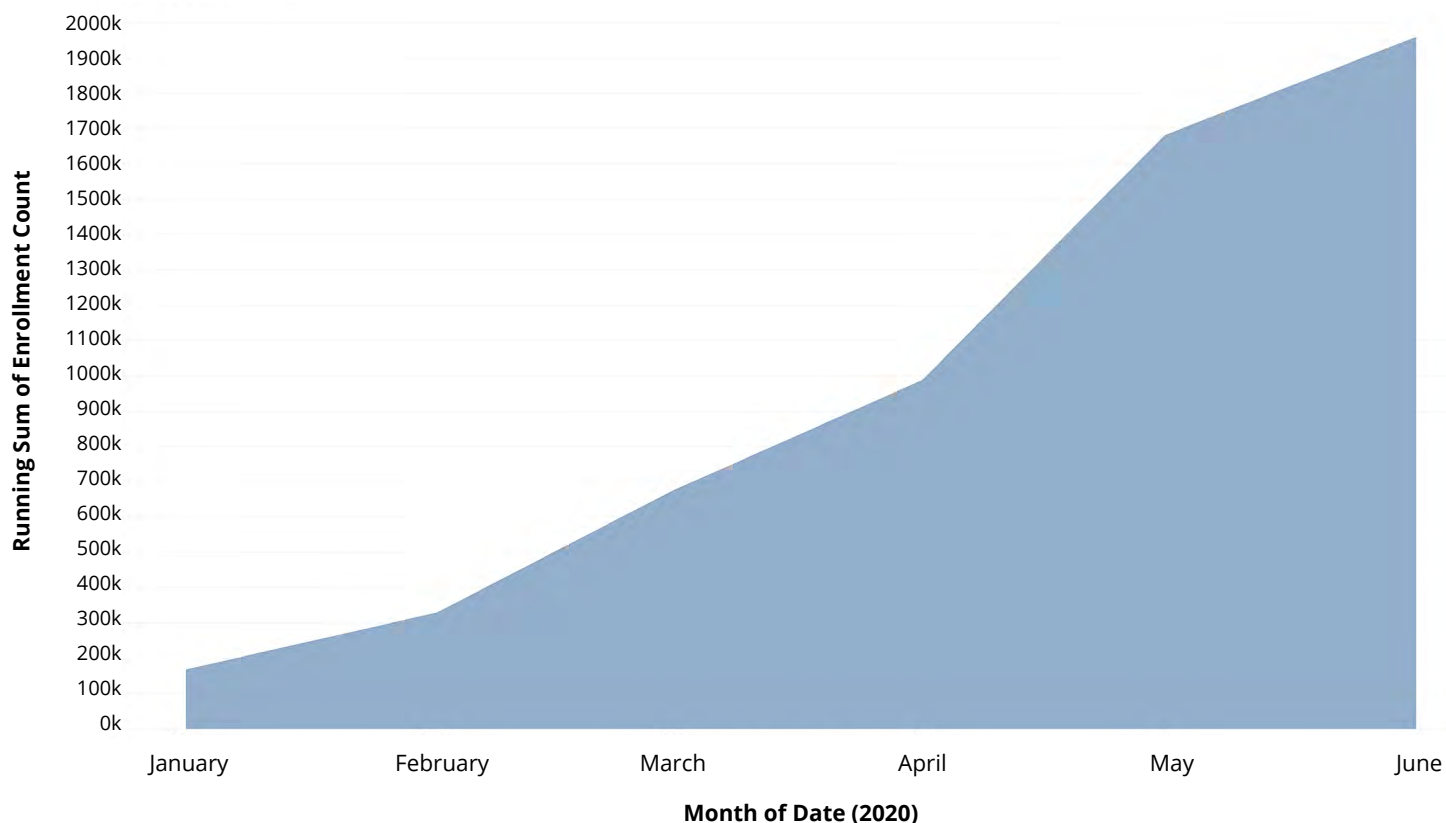
James DeVaney & Lauren Atkins Budde


Our world is changing at a rapid pace, accelerated by a global pandemic and a social movement protesting racial injustice and systemic inequities. An informed, equitable, and empowered society depends on all its members adopting a learning lifestyle. The landscape of higher education is shifting, and the future of work is evolving.

While 2020 has brought many new challenges, one critical shift is the greater awareness of structural inequities that have long been a part of our society. While these are, in fact, old problems, we see new opportunities to transform access and create new opportunities to learn together as we step toward a better future. With this reality as backdrop, we are pleased to share our first Open Learning Initiatives Impact Report.

Guided by our commitments to access, affordability, excellence, and inclusion, we've developed learning experiences that act like the onramps, bridges, and intersections of a learner's educational journey. Onramp learning experiences meet learners where they are as they begin exploring new skills and concepts. They focus on belongingness and building a sense of community to empower learners to explore, take risks, and persist, like our upcoming Sustainability and Development MasterTrack™ certificate. We've created intersections for learners who are hungry to solve problems that require interdisciplinary thinking. These include the Impacting the Opioid Crisis: Prevention, Education, and Practice for Non-Prescribing Providers course. Other learning experiences provide bridges for those learners who are looking for opportunities to connect with people in authentic ways across space, time, discipline, culture, language and generation, such as our multi-generational Earth Day at 50 Teach-Out.

Enrollment January - June 2020





This report celebrates our learners, faculty collaborators, platform partners, and team, and the learning experiences that connect us all. It marks over 11 million enrollments (and counting!) from 6.5 million unique learners. We share the stories, achievements, and impacts of the past 18 months. We invite you to get to know our portfolio of informative short-form content, interactive Teach-Outs on emerging issues, engaging massive open online courses, in-depth course series, and hybrid programs that offer pathways to credit and degrees. You'll read about our efforts to support the Michigan community at all stages of life through collaborations with the Alumni Association and Osher Lifelong Learning Institute. You will also learn about our efforts to redesign, translate, and provide greater access to our educational content, the launch of our Gamut suite of tools, and new strategic initiatives with industry partners like Siemens Digital Industries Software.

We are rapidly expanding our learning community and preparing participants in this growing and inclusive community for the future of discovery, the future of problem-solving, and the future of work. We invite you to collaborate with us so we can work together to extend academic excellence, expand our public purpose, and end educational privilege.

Go Blue!

JAMES DEVANEY

*Associate Vice Provost and Founding
Executive Director, Center for
Academic Innovation*

LAUREN BUDDE

*Director of Open Learning Initiatives,
Center for Academic Innovation*



11 Million Enrollments

200+ Nationalities

Top ten countries:

India, US, Brazil, China, Canada, Great Britain, Mexico, Germany, Russia, Egypt.

96% Have never attended U-M

400,000 Certificates earned

OUR LEARNERS AROUND THE WORLD

A GLOBAL AUDIENCE

The Center for Academic Innovation is committed to extending academic excellence, expanding the University's public purpose, and ending educational privilege.

In pursuit of these goals, we collaborate with faculty and other experts to design, produce, and deliver high-quality open online learning experiences that are widely accessible to learners everywhere. In select cases, pathways to eventual degree credit at U-M is possible.

Learners bring diverse demographic characteristics and motivations, and interact with our learning experiences directly or through enterprise, educational, or government programs.

In addition, content designed and produced through the Center for Academic Innovation has increasingly become integrated into curricula at U-M and other organizations. New integration with curricula creates paths for students, alumni, and global learners to access content tailored to their stage of life and relationship with the U-M community.

SHARING EXPERTISE FROM ACROSS THE UNIVERSITY & BEYOND

At the intersection of being a **top-ranked research university with a public mission** is our imperative to **broaden access to learners at all levels**. We believe the breadth and depth of expertise on our campus should be widely available through new, interdisciplinary models of learning.

We concurrently value different experiences and ways of knowing, and increasingly our content is being created in collaboration with students, staff, and community partners.

In addition to drawing upon the expertise from the U-M community, we collaborate with members of other universities, industries, and nonprofits, as well as community members, students, and alumni to develop content.

Highlighting a broad range of expertise helps to ensure that we are aligning the content we create with the needs of the University's publics, both in the State of Michigan and beyond.

Goals and key opportunities

- Diversifying the disciplinary mix of offerings in our online learning experiences
- Creating conversations and opportunities for learning and knowledge exchange between U-M scholars and community experts
- Exploring opportunities for students and alumni to become content creators

*We have the capacity to solve the complex problems that matter most to society and the mission to attract and empower problem-solving communities that reflect the diversity of the world around us.
We are Michigan.*

Academic Excellence



**97 Graduate Programs
in the Top 10**

— *U.S. News & World Report*

Global Community



**540,000+ alumni
around the world**

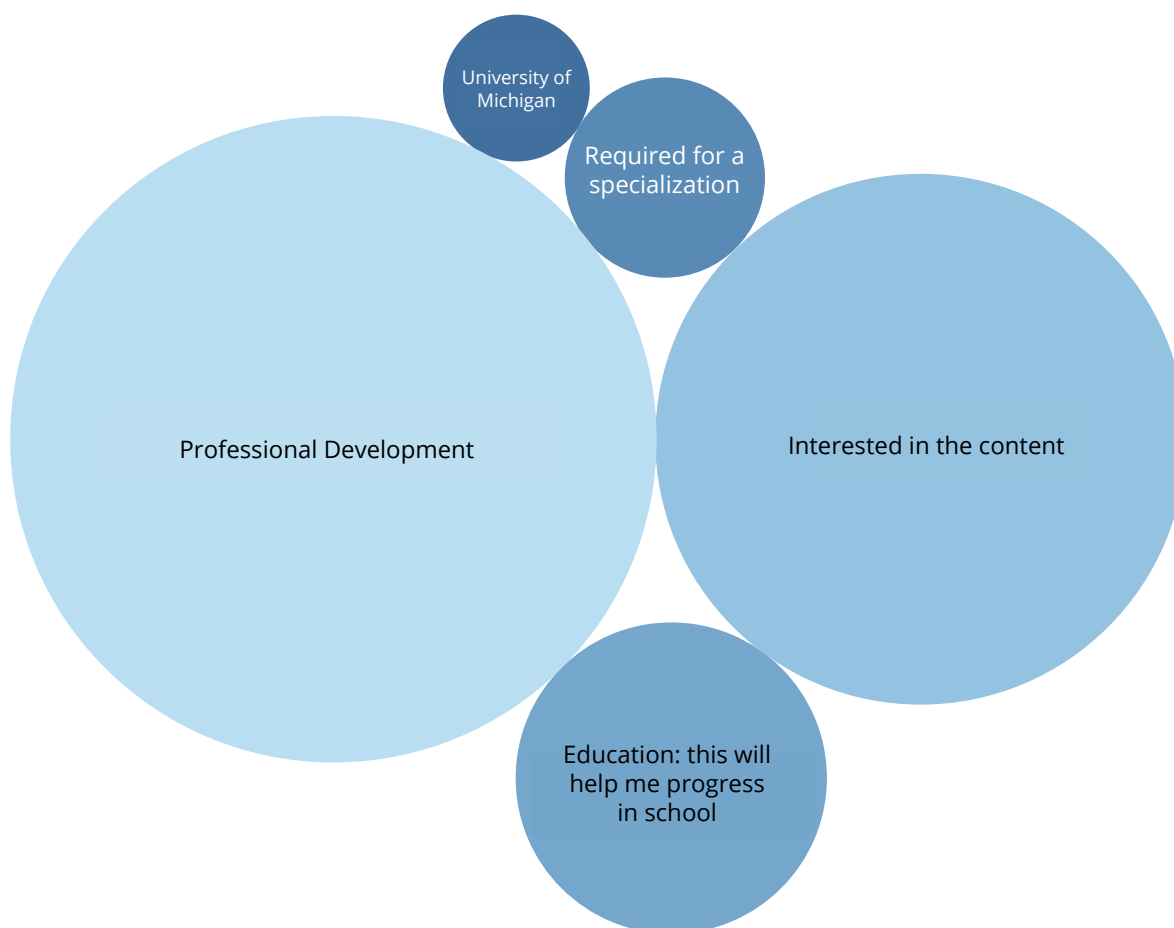
Public Values



**#1 U.S. Public
Research University**

— *National Science
Foundation*

WHY LEARNERS ENROLL IN OUR COURSES



PRIMARY MOTIVATION

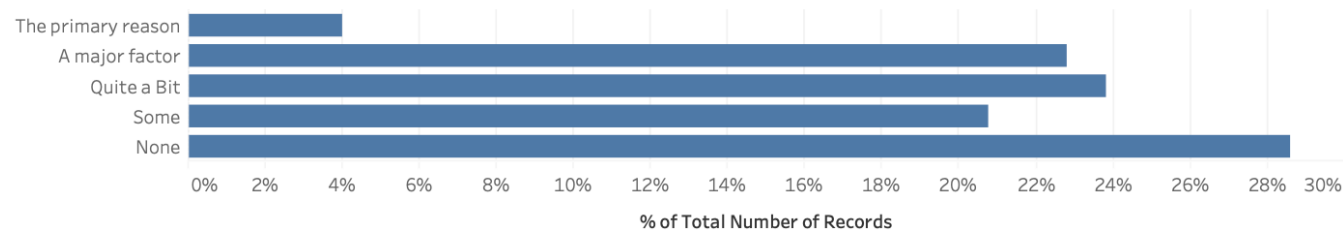
In survey data collected from learners in U-M's open learning experiences, nearly half of respondents reported professional development (either improving current job performance or changing jobs) as a top reason for taking a course.

Interest in content (learning something new) and supplementing formal education were also frequently cited motivations.

Additional studies have suggested that starting a business and learning English also emerge as compelling reasons to take open courses.

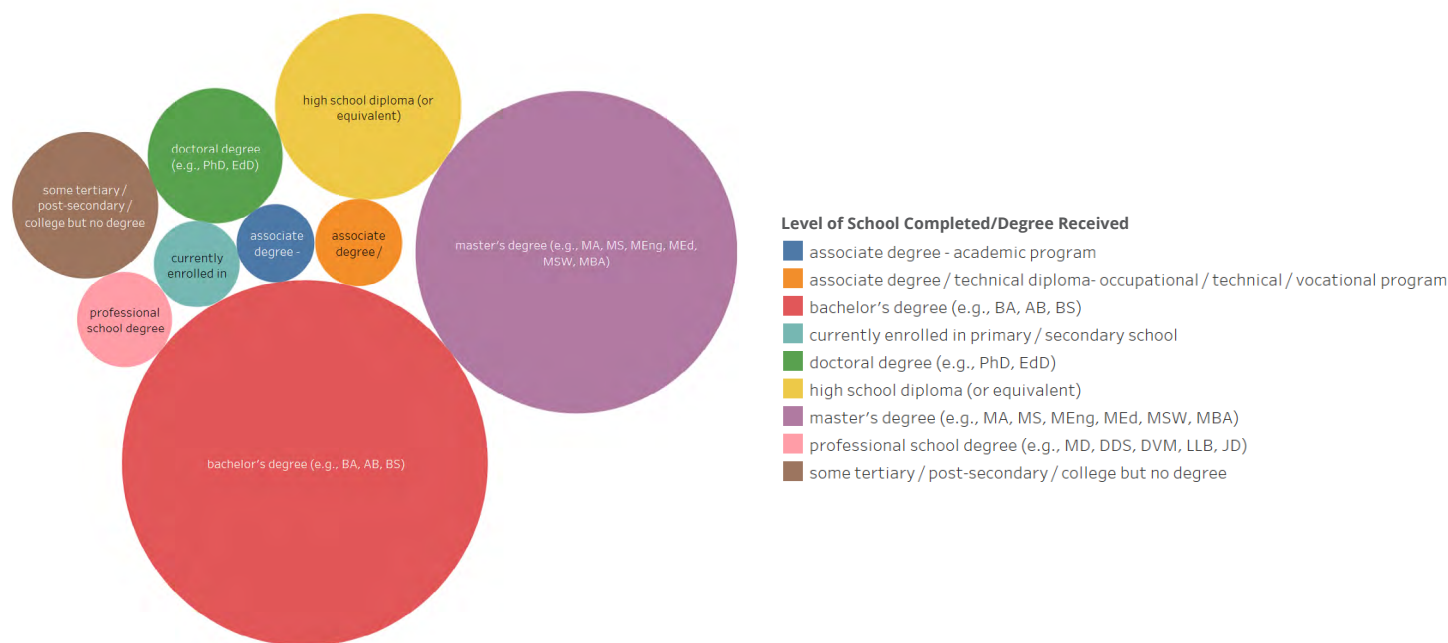
THE MICHIGAN DIFFERENCE

We surveyed learners to ask "To what extent was the fact that this course is offered by the University of Michigan a factor in your taking it?" Over two-thirds responded that being offered "by U-M" made a difference.



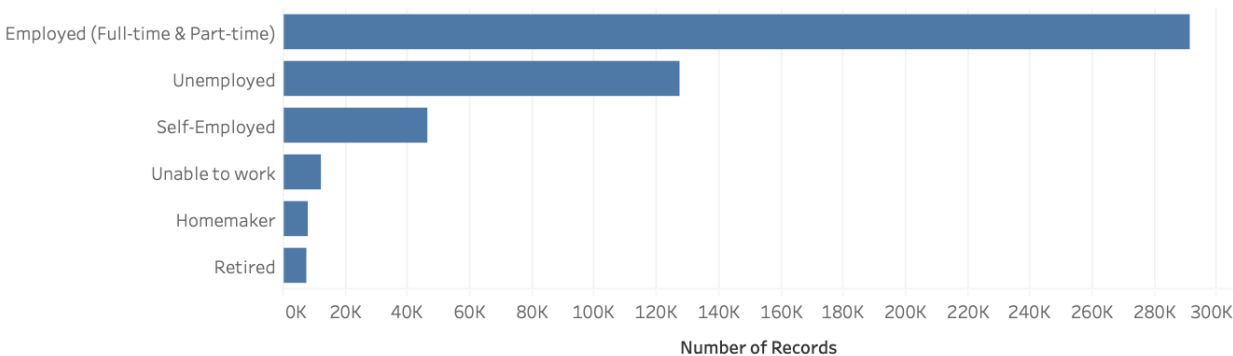
DEGREE LEVEL EARNED

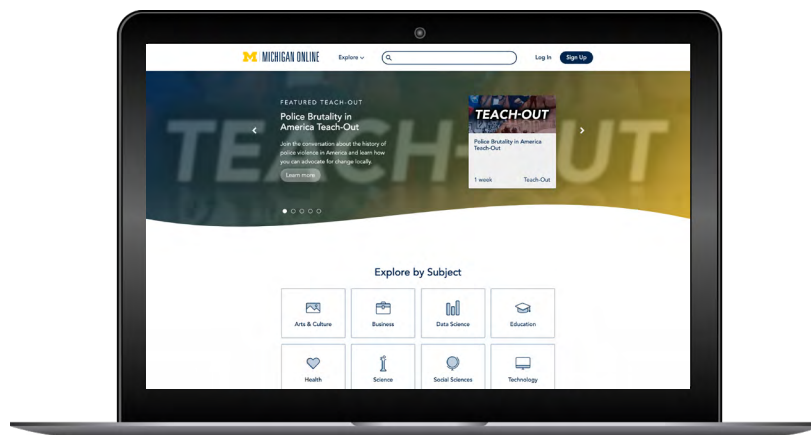
Learners in our open learning experiences come with a vast array of educational backgrounds, from high school to PhD.



EMPLOYMENT

Aligned with our mission of lifelong engaged learning, our open content reaches learners in an array of diverse situations and stages of life.





DESTINATION FOR LIFELONG LEARNING

2019 represented the first full year of life for Michigan Online. Powered by the Center for Academic Innovation, Michigan Online is the destination for our extensive portfolio of online learning initiatives. We are focused on creating pathways for ongoing education for the entire U-M community and beyond, recognizing that learning lasts throughout our lives.

Free certification for all open courses completed on Michigan Online became available to the entire U-M community including students, alumni, faculty, and staff.

In addition to the benefits available to the U-M community, Michigan Online more broadly reflects our mission to advance learning, facilitate problem-solving, foster equity and inclusivity, and increase access and affordability.

Through Michigan Online, learners across the globe can navigate our learning experiences, decide which one(s) meets their needs, and select options to reach their current learning goals.

20-30k

20-30K visitors per month.

FREE

Free access to learning opportunities for everyone.



Free certificates for U-M students, alumni, faculty, and staff available on Coursera, edX and FutureLearn.

ONLINE LEARNING EXPERIENCES FOR EVERYONE

The Center for Academic Innovation's range of open learning experiences currently include:

- **Courses:** primarily massive open online courses, or MOOCs
- **Course Series:** specializations and programs built on the same foundations as MOOCs
- **Hybrid Programs:** open courses with pathways toward future degrees
- **Teach-Outs:** short online learning events
- **Short Form Content:** such as podcasts or single instructional videos



OUR COURSES

Through Massive Open Online Courses (MOOCs), university content and course designs have become available via the internet to vast audiences, ranging from hundreds to millions of learners, with no admission requirements. The University of Michigan partners with platforms designed to reach global audiences through courses designed by university faculty members.

U-M's online courses feature video lectures, readings, and assessments, and have expanded to include new technology integrations. Newer, more complex features provide tools for learners to build skills like programming, data science, and design within our courses.

Through our courses, learners can:

- Build skills
- Learn anytime, anywhere, at their own pace
- Become familiar with U-M faculty and experts
- Study content across disciplines
- Stay connected with the university after graduation
- Earn industry-aligned credentials
- Gain self-efficacy and confidence
- Explore current topics from research-informed perspectives
- Supplement classroom learning

MOOCS AND MOOC SERIES

Series are courses based on the MOOC model, designed cohesively to form “specializations” or “programs.” These series provide learners with a comprehensive set of courses optimized for greater depth and development of interrelated skills.

New MOOCs include:

Dentistry 101

[Russell Taichman](#)
[Rogerio Castilho](#)

Michigan Sport-Related Concussion Training

This MOOC also features an official Michigan Sport-Related Training Certificate that satisfies the state-mandated requirement for concussion training in the state of Michigan.

[Carrie Morton](#)
[Steve Broglio](#)
[Matthew Lorincz](#)
[James Eckner](#)

Foundational Skills for Communicating About Health

[Brian Zikmund-Fisher](#)

Impacting the Opioid Crisis: Prevention, Education, and Practice for Non-Prescribing Providers

[Karen Farris](#)

Problem Solving Using Computational Thinking

[Chris Quintana](#)

Finding Purpose and Meaning in Life: Living for What Matters Most

[Vic Strecher](#)

Hearing Loss in Children

[Lauren Bohm](#)

Resilient Teaching Through Times of Crisis and Change

[Rebecca Quintana](#)

High Stakes Leadership: Leading in Times of Crisis

[Mike Barger](#)

Design Computing: Coding with Python/Rhinoscript

[Glenn Wilcox](#)

In Development:

Translational Research and Practice in Lactation: Public Health Applications

[Olivia Anderson](#)

Starting a Social Enterprise

[Michael Gordon](#)

“

Carrie Morton originally partnered with our Center for the Self-Driving Cars Teach-Out, which launched in February 2019.

After Carrie transitioned to the Concussion Center, one of her first orders of business was to reach out to our Center to propose another Teach-Out, this time on the topic of sport-related concussion.

Not only did she come back to complete her second Teach-Out with our team, we also created our shortest MOOC on record, the state-mandated Michigan Sport-related Concussion Training Certification Course. Carrie has been a true advocate for our Center and our work in online learning.

Benjamin Morse,

Design Manager at Center for Academic Innovation

“

Join this course to get insights into the field of dentistry from the best people in the professions right now. This course is the perfect way to introduce yourself to the field of dentistry, don't worry if you are not from science background, you will equally enjoy learning throughout this course.

Learner in Dentistry 101

“

It was terrific. One of the best MOOC's I had ever taken. It encouraged me to look for more courses by Michigan school of public health.

Learner in Foundational Skills for Communicating About Health



INTERACT WITH A COMMUNITY OF LEARNERS

Engagement at Scale

MOOCs contain more than just content and tools. Learners interact with peers, and in some cases mentors, in a facilitated environment, at their own pace.

Members of our engagement team continuously provide facilitation for many of our online learning experiences. Learners may connect with this team to:

- Ask questions
- Share knowledge and contribute to discussions
- Suggest improvements

The learner engagement team is composed of a dynamic group of students and staff from the campus community and beyond. At its heart, our learner engagement model is centered around cultivating communities of learning.

New series include:

Financial Technology (Fintech) Innovation

[Robert Dittmar](#)
[Andrew Wu](#)

Python 3 Programming

[Paul Resnick](#)
[Steve Oney](#)
[Jaclyn Cohen](#)
[Christopher Brooks](#)

Foundational Finance for Strategic Decision Making

[Gautam Kaul](#)

Good with Words: Writing and Editing

[Patrick Barry](#)

User Experience Research and Design

[Kentaro Toyama](#)
[Predrag Klasnja](#)
[Mark Newman](#)
[Lija Hogan](#)
[Clifford Lampe](#)

In development:

Precision Health for Everyone

[Sharon Kardia](#)

Django for Everybody

[Charles Severance](#)

Exploring Piano Literature:

The Piano Sonata
[Matthew Bengtson](#)

Social Determinants of Health

[Cleo Caldwell](#)
[Sharon Kardia](#)
[Briana Mezuk](#)
[Belinda Needham](#)

Ethics in the Age of AI

[H.V. Jagadish](#)

Leading Diverse and Inclusive Teams and Organizations

[Lindred \(Lindy\) Greer](#)

The Knowing, Doing, Shaping of Augmented, Virtual, and Mixed Reality

[Michael Nebeling](#)

Total Data Quality

[Brady West](#)
[James Wagner](#)
[Jinseok Kim](#)
[Trent Buskirk](#)

Sports Analytics

[Stefan Szymanski](#)
[Wenche Wang](#)
[Youngho Park](#)
[Peter Bodary](#)
[Christopher Brooks](#)

TEACH-OUT TO MOOC TO **CERTIFICATION**

“

"This great course examines the human psychology and learning behind user experience as well as the conceptual framework to make a good design. It can then be applied to many projects in your life."

"Learned a lot of very useful skills both for my profession and for future career interests. The material is broken down very thoroughly and easy to digest for someone who is new to the subject and curious to pursue it further. I highly recommend this course, and it's also doable for someone who is in a full time career."

Learners in Introduction to User Experience Principles and Processes

“

This course is really helpful in learning python basics. The daily practice drills and interactive textbook were game changers for me and helped with retention of things I learned.

Learner in Python Basics

“

[Foundational Finance for Strategic Decision Making] is designed for three types of people. The first set of people who are thinking about pursuing a degree in either business, finance or an applied discipline. It will be extremely useful in terms of giving you exposure of what may come down the road.

The second audience is people who, at work, want to learn finance to do better at their job.

And the third audience is actually not a distinct audience, but an audience that just belongs to the first two. It'll help you understand how to make personal decisions in life, which we always have to do, regardless of age these days.

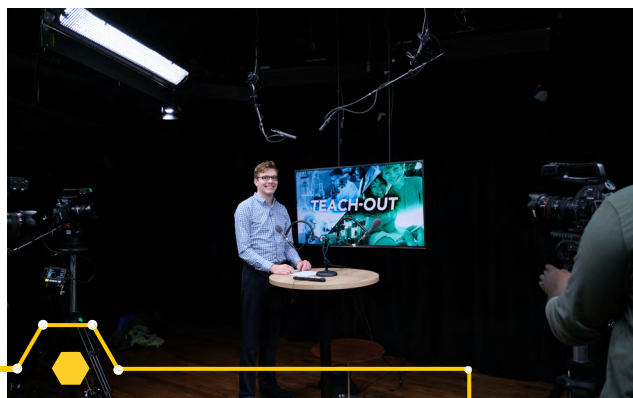
Professor Gautam Kaul

TEACH-OUTS

The Center for Academic Innovation has collaborated with faculty and community experts to create Teach-Outs, which are short, free online learning experiences, each focused on a current issue of social relevance. They are designed to drive meaningful discussion between participants from a broad range of cultural and educational backgrounds. In contrast to MOOCs, Teach-Outs do not focus on assessment or offer certificates.

Teach-Outs use the powerful reach of global platforms to connect with the public around timely issues, and give learners skills to become better advocates for the outcomes they envision (i.e., policy, personal, and community).

WHAT IS A TEACH-OUT?



- **Open** (and free) to the public
- **Brief** Events, not courses (1-4 hours total engagement)
- **Engaged** Focus on participatory discussion, not assessment
- **Inclusive** Global learning community of non-experts
- **Diversity** of perspectives represented in the content
- **Connected** to physical communities
- **Bridge** to further engagement
- **Actionable** Feature a call to action

34 TEACH-OUTS IN 3 YEARS

Our center aims to launch a new Teach-Out every month. To date, our 2020 Teach-Out schedule has included:

Why Iowa? A Primer on the Primaries	Earth Day at 50
LGBTQ Pride: From Origins to Evolution	Thrive in Trying Times
Arts and Technology	Sleep Deprivation
Melting Ice, Rising Seas	

The Teach-Out for July 2020 is Police Brutality in America.

Nationwide uprisings following the tragic deaths of George Floyd, Breonna Taylor, and Ahmaud Arbery in the United States have led to an intense interest around the world to better understand systemic racism and abuses of power. This Teach-Out will provide a space to learn about the history of police violence in America, the laws and policies that prevent accountability, the demands of protesters, and tools to fight for change locally.

Late summer and early fall Teach-Out topics in development include debates, vaccines, and fake news.

The Teach-Out model has grown to include peer institutions, including Johns Hopkins University and Emory University. Following U-M's Teach-Out Academy events, these universities adopted the model and created Teach-Outs with their own campus partners.

A partnership between the Osher Lifelong Learning Institute (OLLI) at the University of Michigan and the Center for Academic Innovation resulted in incorporation of Teach-Out content into OLLI's 2020 online programming. When the global pandemic arose, OLLI and the Center for Academic Innovation collaborated to launch a lecture series focused on vaccines. Existing Teach-Out videos were live-streamed as part of the lecture series, which also included guest speakers and Q&A.

SHORT FORM **CONTENT**

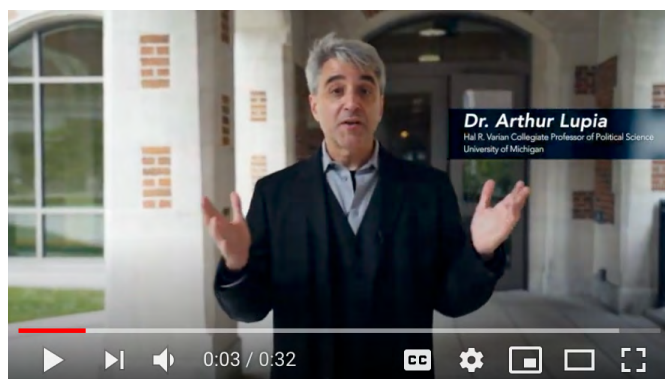
Increasingly, we are also creating brief engaging videos and other standalone learning opportunities. These “short-form” learning experiences accomplish a number of goals, including:

- Unpacking important, complex ideas
- Highlighting U-M researchers
- Describing the impact of how U-M scholarship and teaching have impacted our communities

Our Michigan Online YouTube Channel is the home for much of our short-form content, which will become available through a new “Collections” feature this fall. We plan to build these public collections with collaborators to reach new public audiences. In doing so, we will simultaneously create videos that can be easily integrated into classroom spaces, both on campus and online.

The YouTube channel currently features videos on subjects as wide ranging as computational thinking in education; storytelling; financial technology; election primaries; the Michigan Department of Natural Resources’s approach to fighting wildfires, listening, and accessibility in online learning.

In addition, the channel will increasingly be a space for “course preview” videos and new content focused on current topics.



PATHWAYS TO DEGREE PROGRAMS

Learners who complete our courses have the opportunity to receive a certificate which can be shared within professional networks to indicate their accomplishment. Additionally, certain learning experiences also provide opportunities for learners who have, or may develop, interest in pursuing related degree programs.

In 2019-2020, we continued to evolve our model for offering a robust range of stackable learning experiences, which can be assembled or combined in multiple ways with other forms of achievement. Our courses allow learners to gain self-efficacy through lower-commitment content trial and create pathways toward degrees.

In exploring new options to complement emerging degree portfolios, we initiated the development of open content that is linked directly to online degree program content. Linked content offers learners an opportunity to develop a “sense” of a degree, without needing to repeat work should they proceed into the full degree program.

We also leveraged existing open MOOC content for use in assisting prospective students in demonstrating proficiency for admission into programs.

EXPLORING, REFINING, AND EVOLVING

In addition to exploring these new options for stackability within a degree portfolio, we continue to refine and evolve existing MicroMasters and MasterTrack™ program offerings.

MicroMasters and MasterTrack programs are a series of open enrollment courses designed to complement the curriculum of a Master’s degree program offered by U-M.

Learners who complete a MicroMaster or MasterTrack program, while gaining a valuable industry-aligned credential, also have the opportunity to apply to the master’s degree program associated with the credential. If admitted, the work completed through the program may translate to waived credits toward the degree program requirements, creating an accelerated and less expensive pathway to a master’s degree.

1%

of learners surveyed in our open learning courses have already applied to U-M.

12%

of learners surveyed say they plan to apply to U-M.

36%

of learners surveyed are considering apply to U-M.



CONTENT AS **GATEWAY**

MICROMASTERS PROGRAMS

To date, 20+ MicroMasters learners have enrolled in masters degree programs at U-M. The Center for Academic Innovation currently offers two MicroMasters programs through partnerships with the School of Education and the School of Social Work.

School of Education

40+ learners have completed the MicroMasters program with 6 enrolling in master's program. In April 2019, the first learner who started in a MicroMasters graduated on campus, through a School of Education program.

PROGRAM FACULTY:

[Deborah Loewenberg Ball](#)
[Nell Duke](#)
[Liz Kolb](#)
[Elizabeth Birr Moje](#)
[Donald J. Peurach](#)
[Gretchen Spreitzer](#)
[Anthony S. Bryk](#)
[Paul LeMahieu](#)
[Alicia Grunow](#)
[Amanda Meyer](#)

School of Social Work

15 MicroMasters learners have joined the School of Social Work on campus, one of whom joined the PhD program in 2019.

PROGRAM FACULTY:

[Mary Ruffolo](#)
[Barbara Hiltz](#)
[Katie Richards-Schuster](#)
[Jamie Mitchell](#)
[Brian E. Perron](#)

MASTERTRACK PROGRAM

With the full launch of our first MasterTrack in 2019, and the first group of learners completing the program, we had the opportunity to begin evaluating the elements of the learning experience unique to each pathway model.

Construction and Engineering MasterTrack Certificate

Designed for students pursuing a professional career in the construction industry, 2019 saw the first program cohort finish, with 31 completers in total, one of whom was accepted to the Master's program. With initial design, production, and release complete, we continue to focus on refining content to enrich the experience for future learners.

PROGRAM FACULTY:

[Carol Menassa](#)
[Vineet Kamat](#)
[SangHyun Lee](#)

IN DEVELOPMENT:

Social Work MasterTrack Certificate

Launching in September 2020, this new program will focus on research, policy and practice, replacing the initial MicroMasters program.

School for Environment and Sustainability MasterTrack Certificate

Beginning in the fall of 2020, a new MasterTrack program will provide an introduction to major environmental and sustainability challenges, help learners identify how to address them, and examine the effectiveness of different solutions.

PROGRAM FACULTY: Pamela Jagger
Arun Agrawal Meha Jain
Bilal Butt Maria Lemos
Ivan Eastin Samuel Stolper

Each MasterTrack program offers learners a chance to earn a certificate upon completion, and credit earned toward a master's degree if they are successfully admitted to the corresponding program.

Better understanding the strengths and affordances of each model enables us, in working with units interested in exploring these pathways, to identify alignment of pathways with the needs of the associated program. This allows units to choose the model that best complements their needs, and in turn creates opportunities for affordable pathways for students wishing to pursue graduate educational opportunities.

“

This course provided me a solid foundation of construction finance that I can use in my day-to-day work.

Learner in Financial Accounting for Construction Projects

“

I appreciate the self-paced aspect of this course, and felt that this honors my time and my current ability to commit to coursework. I travel a lot for my current role as a regional grant administrator. Some weeks I had plenty of time for classes and assignments, but I had to take full weeks off, during the completion of this course. This is simply not an option in a traditional classroom setting.

Learner in MicroMasters course “Leading Ambitious Teaching and Learning”

“

This is a great course for people working or volunteering in organizations that do not require a fully trained social worker, but do require a thorough understanding of what social work is and issues such as ethics and professional competence. I decided to take this course when I started a job in a developing country managing a foundation teaching the arts to impoverished youth despite not having a background in the social sector, and it was really useful.

Learner in School of Social Work MicroMasters Course 521



WEB APPLICATIONS FOR **LEARNING**



In addition to supporting the design and production of online courses, the Center for Academic Innovation also launched a new suite of online learning tools called Gamut.

Designed, built, and maintained by members of our software development and online learning experience teams, each Gamut tool is a standalone web application that can be integrated into courses in various formats, intended to enhance the educational experience for students and instructors alike.

GALLERY



A digital space for students to share their work and provide feedback to each other, the Gallery tool has been used to share visual, written, and mixed media artifacts in online courses. On campus, students have used it as a repository for reflecting on, storing, and reviewing real-world examples of concepts.

RECOMMENDER



Recommender allows instructors to create a set of survey questions which students progressively answer throughout the modules in a given online course. Once they have answered all the questions, students receive a piece of tailored content based on their response

GOAL SETTER



This reflective tool walks students through a four-step goal setting process to enhance and support their motivation for taking the course.

WRITE & REVISE



In this tool, learners apply writing strategies and techniques to original or borrowed work in order to complete instructor-created practice exercises. After creating one or more iterations, learners can compare drafts side by side.

WORKBOOK



Workbook provides a space for written reflection on course material. Instructor-provided prompts guide learners through their reflections. Learners then have the option to share their responses with their classmates at the end of each section. Responses shared by fellow learners are viewable in a gallery portion of the tool. Additional features include threaded comments on shared responses and the ability to export one's work to a PDF.

Courses with Gamut Tools:

Gallery

Python Basics
UX Capstone
Storytelling for Social Change
Design Computing (MOOC and Residential courses)
SI 548/ED 626 Educational
Software Design and Authoring

Sleep Tracker

[Sleep Teach-Out](#)

Recommender

[Sustainable Food Teach-Out](#)
(Makes recommendations for more sustainable food/lifestyle choices based on the learner's personal habits and interest in making changes)

Write & Revise

[Good With Words specialization](#)

Goal Setter

[Python Basics](#)

Workbook

[Resilient Teaching Through Times of Crisis and Change](#)

PARTNERING FOR PROGRESS

The University of Michigan is one of hundreds of universities across the world who offer courses within a wide range of disciplines for learners who, on our own, we would be unable to reach.

While Michigan Online is a gateway, learners will find most of our content available through partner platforms. Our partners implement much of the recruiting, engineering, and support required for serving learners on a global scale at a sustainable pace.

In 2019, we partnered with a new platform, FutureLearn, joining edX and Coursera as U-M collaborators.

The Teach-Out team also conducted a first-of-its-kind experiment by launching the Arts and Technology Teach-Out exclusively on Instagram.



COURSERA
WWW.COURSERA.ORG

Courses from 190+ universities and courses,
reaching 40 million learners.



EDX
WWW.EDX.ORG

Courses from 140+ institutions
reaching 20 million learners.



FUTURELEARN
WWW.FUTURELEARN.COM

Courses from 140+ partners reaching
8 million learners.

In a new public/private partnership, Siemens Digital Industries Software and the Center for Academic Innovation are collaboratively sponsoring the development of two new specializations. These initiatives were sourced via a campus-wide Call for Proposals for new content on breakthrough technologies in Spring 2020. Siemens Digital Industries Software focuses on digitalizing the entire production process, and aims to work with the best minds in engineering education to bring the power of digitalization to learners everywhere. U-M is a leader in online education through the Center for Academic Innovation and home to one of the nation's best engineering programs. The top two proposals from this call will each receive up to \$75,000 in financial support, \$150,000 in in-kind support through course design and production, and access to Siemens' expertise in software, product support, and consultation. Awards will be announced in Summer 2020.



ACCESS AND REACH THROUGH MULTIPLE PLATFORMS

Over the last year, we've expanded our experimentation with respect to courses offered on multiple platforms at once, providing greater access and reach to diverse learning communities.

By offering a course on more than one platform, we have been able to increase its access and reach, sometimes by tens or hundreds of thousands of learners. Much like songs can be streamed through more than one service, learners can now access a selection of our courses on the platform of their choice.

Financial Technology (Fintech) Innovations

Robert Dittmar, Andrew Wu

- Fintech was the first course series designed to launch near-simultaneously on both Coursera and FutureLearn.

Anatomy Series

Dr. B. Kathleen Alsup, Dr. Glenn Fox, and Dr. Kelli Sullivan

- The original Anatomy series launched on the edX platform in 2018. A new version of the Anatomy series was also released on Coursera in 2019, making the content available to thousands of additional learners across the world.

Python for Everybody on edX

Charles Severance

- Increasing the reach of this series by 100,000+ learners, the edX versions of 2 of the courses opened in early 2019 and on FutureLearn in 2019 and 2020.

FIRST COURSES ON U-M FUTURELEARN

- **Python for Everybody** - 2 courses (*Charles Severance*)
- **Successful Negotiation** (*George Siedel*)
- **Financial Technology (Fintech) Innovations** - 4 courses (*Robert Dittmar, Andrew Wu*)
- **Design Computing: 3D Modeling in Rhinoceros with Python Rhinoscript** (*Glenn Wilcox*)
- **Earth Day at 50 Teach-Out**
- **Sleep Deprivation: Habits, Solutions and Strategies Teach-Out**
- **Thrive in Trying Times Teach-Out**

Upcoming FutureLearn courses include Anatomy, User Experience Research and Design, The Science of Success: What Researchers Know that You Should Know, Instructional Methods in Health Professions Education, and more.

In total, the FutureLearn courses have garnered 80,000+ new learners from around the world, welcoming them to what is in many cases their first encounter with the University of Michigan.

“

I've been a system engineer for more than 10 years but I still couldn't write programming and that made me lose confidence. But taking this course brought me new challenge and I feel my confidence back in the end. I'll keep programming and grade up my career.

Learner in Programming for Everybody (Getting Started with Python)

“

With this MOOC you will really feel like you are in a specialized, very detailed university course. You're not going to just skim over a topic, you go into details as at university.

Learner in Human Neuroanatomy



CENTER FOR
ACADEMIC INNOVATION
UNIVERSITY OF MICHIGAN

CONTENT ADOPTION AND **EVOLUTION**

In 2020, we are increasingly focused on the evolution of content beyond its original conception.

RESIDENTIAL TEACHING AND LEARNING

As our campus heads toward a time of highly increased online teaching and learning, the Center for Academic Innovation and faculty collaborators will build on our foundation of finding new ways to tailor content to specific curricula and learning objectives in campus courses.

While designing learning experiences for broad audiences, the Center for Academic Innovation also has the capability to create versions of our courses for smaller cohorts of students from the U-M community and beyond.

ALUMNI

Partnering with the Alumni Association of the University of Michigan enables our organizations to work together, providing alumni with learning opportunities wherever they are. Leveraging the strength of our online networks has enabled us to connect resources on Michigan Online with the Association Education Gateway, reaching alumni who want to learn and might also connect to produce short-form content with us.





NEW LEARNING COMMUNITIES AND ITERATIONS OF CONTENT

We support the development of ever-evolving learning communities, which extend from online to face-to-face. Our strategy also includes strengthening our own capacity to develop new kinds of innovative teaching and learning exchanges through faculty and student ideas.

In connection with new uses of content, many of our MOOCs have already undergone major redesign efforts to integrate new concepts and learner feedback. We also created new translated versions of existing courses.

New Uses on Campus:

- **Examples of Cohorts for U-M Students:** Injury Prevention for Children and Teens launched in 2018. In addition to being open to the public, the content within this MOOC was designated by the University of Michigan Medical School as potentially eligible for Continuing Medical Education (CME).
 - A “small, private cohort (SPOC)” version was concurrently launched for medical students, with instruction from Dr. Andrew Hashikawa
 - In 2019, a second “SPOC” version created specifically for pediatric residents, with instruction from Dr. Margeaux Naughton.
- **Content Online and On Campus:** In a collaboration between the School of Social Work and Center for Academic Innovation, content created for four School of Social Work MicroMasters courses was integrated with 15 ‘hybrid’ on-campus class sections for the school.
 - With a portion of the content online, faculty then focused their direct student time on discussion and small group facilitation in the classroom.
- **Open Content Re-Use in Degree Modules:** The MOOC course team that created Community Engagement: Collaborating for Change, with Center for Academic Innovation, approved select modules to be incorporated into the School of Public Health’s online Master of Public Health degree program in a course that first ran in the Winter 2020 term.
- **From MOOCs to U-M Courses:** The Center for Academic Innovation worked with College of Literature, Science & Arts, as well as Michigan Medicine, to make the four-course Human Anatomy series (initially launched as MOOCs) available as a for-credit, online undergraduate course available in Fall 2020. Initially planned as an offering for LSA students participating in a “Summer Here, Fall Away” program (cancelled due to covid), this set of online courses is now among the first of its kind available to students.



“

Injuries are the leading cause of death in children in the United States, and as a pediatric ER physician, I see and treat these preventable injuries every day. Medical professionals do play a significant role in working and educating families to prevent injuries.

The creation of the Pediatric Injury Prevention Training MOOC and SPOC (small, private online cohort) for medical professionals and medical students addressed a critical need because most medical schools and residency programs don't offer formal pediatric injury prevention training.

The MOOC/SPOC format allows the integration of a broad topic like pediatric injury prevention into existing traditional curricular structures. It's both exciting and a game-changer because, at Michigan Medical School, for example, over 50% of senior medical students have now taken our SPOC as an elective. Worldwide, we have had many medical professionals take the MOOC for formal continuing medical education credits.

Andrew Hashikawa, MD

“

Creating a SPOC with your team has been beneficial to our pediatric residents. During their Pediatric Community Health Rotation, pediatric residents are able to asynchronously get information from specialists in their fields throughout the UM campus. They enjoy being able to get this information from experts at their own pace and on their own time integrated into their busy clinical schedule.

Margeaux Anahid Naughton, MD



FELLOWSHIPS

Faculty

Through the new Public Engagement Faculty Fellowship, faculty will also have the opportunity to experiment with digital approaches to public engagement, including online learning experiences. This Fellowship will support faculty across schools and colleges on the University of Michigan-Ann Arbor campus to strengthen their public engagement skills, connect with a community of faculty and public engagement professionals at U-M, and launch innovative projects with funding and in-kind support.

We welcome all faculty interested in exploring this, or other innovation-focused fellowship opportunities, to connect with us.

Students

The Center for Academic Innovation offers fellowship programs to University of Michigan students. Our student fellows learn, contribute, and develop professional skills through partnering with our teams. This year, we look forward to continuing work with our student fellows to engage in creating new solutions in open learning initiatives.

ADVANCED EDUCATION TECHNOLOGY CERTIFICATE PROGRAM (AETP)

In a collaboration between a team from the School of Education led by Clinical Associate Professor of Education Technology Liz Kolb, and the Center for Academic Innovation, we recently announced the creation of a new professional learning experience. The Advanced Education Technology Certificate Program (AETP) is now accessible to K-12 educators across the globe. This certificate provides a competency-based program preparing teachers and administrators to apply research-informed educational technology frameworks in their own schools. Educators who complete the program will develop a portfolio meeting all International Society for Technology in Education (ISTE) Standards for Educators.



NEW CERTIFICATE DEVELOPMENT

The Center for Academic Innovation and School of Education also partnered to create a Learning Experience Design Certificate Program (LXD) that is open to all U-M Ann Arbor graduate students. This certificate program is ideal for students looking to engage in innovative learning opportunities in real-world settings by working with researchers and designers who are creating new online learning opportunities. Certificate completers will be well prepared to enter the fields of learning experience design or instructional design, which offer a range of opportunities to shape learning experiences in academic and industry settings.

This 12-credit graduate certificate program combines academic courses on learning theory, curriculum design, multimodal literacies, evaluation, and research design at the School of Education with authentic design opportunities at the Center for Academic Innovation.

Students must complete:

- **EDUC 616: Learning Experience Design** where students explore foundational topics in design, learning theory, and education over the fall and winter semesters of the academic year.
- **One** of the two following course options:
 - **EDUC 591:** Learning about How People Learn
 - **EDUC 601:** Transformative Learning and Teaching with Technology
- **One elective** from a set of relevant options at the School of Education.

This program includes a 180-hour student residency where students are immersed in a professionally-oriented experience, collaboratively supervised by U-M faculty and Academic Innovation experts, and design, analyze, and implement innovative learning experiences and tools in online and residential environments.



PRIORITIES

WHAT WE'RE EXCITED ABOUT

With an unprecedented beginning to 2020, we invite you as our partner to connect with us. In our rapidly changing environment, how would you like to collaborate with us? What would you like to see?

FACULTY

We invite faculty to connect with us to exchange ideas about how we might serve residential students, reach new audiences, and continue to experiment with innovative models for teaching and research. How could we collaborate and build a culture of innovation together through higher education?

ALUMNI

Creating spaces to engage with alumni is also a priority. When your time on campus has come to an end, we invite you to explore U-M learning experiences, meet fellow learners, and earn certificates. As you invest in professional development and build your networks, we hope to generate and bring to life new ideas with you. How would you like the future of open, lifelong learning at Michigan to look? What could you contribute?

INDUSTRY PARTNERS

New forms of industry partnerships will be a focus for our center on the road ahead. As a public university, our mission is to make new discoveries, prepare students, and cultivate talent. We rely on industry partners to help us identify needs and trends within the always-changing workforce. How can U-M learning experiences enrich your organization? Would you like to explore content sponsorship opportunities with us?

CONTENT DEVELOPMENT

Short-form content will be a particular emphasis in the upcoming year, through development of new videos, podcasts, and more available through Michigan Online and our YouTube channel.

Collections will be coming to Michigan Online in 2020. With the Democracy and Debate collection in connection with a university-wide theme semester.

CONSULT AND CONNECT

We hope the goals and key opportunities highlighted throughout this report will serve as a spark for new ideas and potential collaborations. All partners are invited to get in touch with us, bringing your new ideas for a consultation.



ABOUT US

WEBSITE

[Center for Academic Innovation](#)

MICHIGAN ONLINE

online.umich.edu

ONLINE TEACHING @ U-M

onlineteaching.umich.edu

SUBSCRIBE FOR EMAILS, EVENTS, UPDATES

ai.umich.edu/subscribe

FOLLOW US ON SOCIAL MEDIA

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APPENDIX: **SERIES**

ANATOMY (C, E)*

Anatomy: Musculoskeletal and Integumentary Systems

Anatomy: Cardiovascular, Urinary, and Respiratory Systems

Anatomy: Human Neuroanatomy

Anatomy: Gastrointestinal, Reproductive and Endocrine Systems

APPLIED DATA SCIENCE WITH PYTHON (C)*

Introduction to Data Science in Python

Applied Plotting, Charting & Data Representation in Python

Applied Machine Learning in Python

Applied Text Mining in Python

Applied Social Network Analysis in Python

FINANCIAL TECHNOLOGY (FINTECH) INNOVATIONS (C, F)*

The Future of Payment Technologies

Blockchain and Cryptocurrency Explained

Raising Capital: Credit Tech, Coin Offerings, and Crowdfunding

Innovations in Investment Technology: Artificial Intelligence

FOUNDATIONAL FINANCE FOR STRATEGIC DECISION MAKING (C)*

Time Value of Money

Decision Criteria & Applications

Bonds & Stocks

Risk, Return & Valuation

LEADING PEOPLE AND TEAMS (C)*

Inspiring and Motivating Individuals

Managing Talent

Influencing People

Leading Teams

Leading People and Teams Capstone

PUBLIC LIBRARY MANAGEMENT (E)**

Identifying Community Needs for Public Libraries

Managing a Diverse and Inclusive Workplace for Public Libraries

Personnel Management for Public Libraries

Budgeting and Finance for Public Libraries

Infrastructure Management for Public Libraries

Strategic Planning for Public Libraries

Grant Writing and Crowdfunding for Public Libraries

Public Library Marketing and Public Relations

PYTHON 3 PROGRAMMING (C)*

Python Basics

Python Functions, Files, and Dictionaries

Data Collection and Processing with Python

Python Classes and Inheritance

Python Project: pillow, tesseract, and opencv

KEY

* Specialization

** Professional Certificate

C - Coursera

E - EdX

F - FutureLearn

PYTHON FOR EVERYBODY (C, E, F)*

Programming for Everybody (Getting Started with Python)

Python Data Structures

Using Python to Access Web Data

Using Databases with Python

Capstone: Retrieving, Processing, and Visualizing Data with Python

Programming for Everybody (Getting Started with Python)

Programming for Everybody (Getting Started with Python)

Python Data Structures

STATISTICS WITH PYTHON (C)*

Understanding and Visualizing Data with Python

Inferential Statistical Analysis with Python

Fitting Statistical Models to Data with Python

SURVEY DATA COLLECTION & ANALYTICS (C)*

Data Collection Methods: Online, Telephone and Face-to-face

Questionnaire Design for Social Surveys

Sampling People, Networks, and Records

Survey Data Collection and Analytics Project (Capstone)

USER EXPERIENCE RESEARCH AND DESIGN (C)*

Introduction to User Experience Principles and Process

Understanding User Needs

Evaluating Designs with Users

UX Design: From Concept to Prototype

UX Research at Scale: Surveys, Analytics, Online Testing

UX (User Experience) Capstone

WEB APPLICATIONS FOR EVERYBODY (C)*

Building Web Applications in PHP

Introduction to SQL

Building Database Applications in PHP

Javascript, jQuery, and JSON

WEB DESIGN FOR EVERYBODY (C)*

Introduction to HTML5

Introduction to CSS3

Interactivity with JavaScript

Advanced Styling with Responsive Design

Web Design for Everybody Capstone

UPCOMING:

Good With Words: Writing and Editing (C)*

Writing and Editing: Word Choice and Word Order

Writing and Editing: Structure and Organization

Writing and Editing: Drafting

Writing and Editing: Revising

APPENDIX: **ONLINE HYBRID PROGRAMS**

CONSTRUCTION ENGINEERING AND MANAGEMENT

Construction Project Delivery Systems
Financial Accounting for Construction Projects
Construction Project Planning, Scheduling, and Control
Construction Equipment and Methods
Construction Safety and Human Factors
Sustainable Construction Practices

LEADING EDUCATIONAL INNOVATION AND IMPROVEMENT

Leading Ambitious Teaching and Learning
Designing and Leading Learning Systems
Improvement Science in Education
Case Studies in Continuous Educational Improvement
Leading Educational Innovation and Improvement Capstone

SOCIAL WORK: PRACTICE, POLICY AND RESEARCH

Social Work Practice: Advocating Social Justice and Change
Social Work Practice with Individuals, Families, and Small Groups
Diversity and Social Justice in Social Work
Social Work Practice in Community Organization, Management and Policy/Evaluation
Social Work: Research
Social Welfare Policy and Services

UPCOMING:

SEAS Sustainability and Development

Acting to Eliminate Poverty
Global Environmental Change and Sustainable Food Systems
Good Health and Well-Being: Behaviors, Structures and Spillovers
Quality Education for Sustainability
Methods/Skills in Sustainability and Development (Methods: Program Eval, Management, Cost-Benefit Analysis, Life Cycle Analysis, Institutional Analysis)
Capstone Projects
Gender: Environment, Power and Equity
The Future of Water
Pathways to Achieving Sustainable Energy for All
Overcoming Inequality and Polarization
Pathways to Sustainable Cities and Communities
Climate Change and Adaptation: Adaptive Development in a Changing World
Sustainability and Equity in Marine and Social Ecological Systems
Conservation and Sustainable Development

Note: Additional course names TBD



APPENDIX: **SINGLE MOOCS**

Accounting for Decision Making

Act on Climate: Steps to Individual, Community, and Political Action

Advanced Literature Searching in the Health Sciences

AIDS: Fear and Hope

Community Engagement: Collaborating for Change

Community Organizing for Social Justice

Data Science Ethics

Dentistry 101

Finance for Everyone: Smart Tools for Decision-Making

Foundational Skills for Communicating About Health

Hearing Loss in Children

Finding Purpose and Meaning in Life: Living for What Matters Most

High Stakes Leadership: Leading in Times of Crisis

Impacting the Opioid Crisis: Prevention, Education, and Practice for Non-Prescribing Providers

Injury Prevention for Children & Teens

Inspiring and Motivating Arts and Culture Teams

Instructional Methods in Health Professions Education

Internet History, Technology, and Security

Introduction to Cataract Surgery

Introduction to Data Analytics for Managers

Introduction to Thermodynamics: Transferring Energy from Here to There

Leading Change: Go Beyond Gamification with Gameful Learning

Leading for Equity, Diversity and Inclusion in Higher Education

Making Successful Decisions through the Strategy, Law & Ethics Model

Michigan Sport-Related Concussion Training Certification

Mindware: Critical Thinking for the Information Age Model Thinking

Preparing for Graduate Study in the U.S.: A course for international students

Problem Solving Using Computational Thinking

Resilient Teaching Through Times of Crisis and Change

Securing Digital Democracy

Seeking Justice: Conversations on Incarceration

Service Transformed: Lessons in U.S. Veteran Centered Care

Sleep: Neurobiology, Medicine, and Society

Storytelling for Social Change

Successful Negotiation: Essential Strategies and Skills

Teaching and Assessing Clinical Skills

The Finite Element Method for Problems in Physics

The Science of Success: What Researchers Know that You Should Know

Thoracic Oncology

Understanding and Improving the U.S. Healthcare System

APPENDIX: **TEACH-OUTS**

Arts & Technology

Augmented Reality, Virtual Reality, and Mixed Reality: Opportunities and Issues

Civil Rights in the Trump Era

Community Organizing for Social Justice

Crisis at the Border

Democratic to Authoritarian Rule

Earth Day at 50

Exploring Basic Income in a Changing Economy

Extreme Weather: Tornado Season

Fake News, Facts, and Alternative Facts

Finding Common Ground

Free Speech in Journalism

Free Speech in Sport

Free Speech on Campus

Hurricanes: What's Next?

LGBTQ Pride: From Origins to Evolution

Listening to Puerto Rico

Melting Ice Rising Seas

Preventing Gun Violence in America

Privacy, Reputation, and Identity in a Digital Age

Self-Driving Cars

Sleep Deprivation: Habits, Solutions, and Strategies

Solving the Opioid Crisis

Stand up for Science: Practical Approaches to Discussing Science that Matters

Sustainable Food

The Future of Gerrymandering

The Future of Obamacare: Repeal, Repair, or Replace?

The Internet and You

Thrive in Trying Times

Understanding Impeachment

Understanding Sport-Related Concussion

Vaccines: Myths, Facts, and Outbreaks



