MDes
in
integrative
design
"It’s exciting to see MDes students go through a real-life situation. This isn’t something simply done out of a textbook.”

BOB LYNCH  Director of Advanced Development, Stryker
Program Overview

The wicked problems we face—healthcare, climate change, terrorism, poverty—require exceptional rigor and deep collaboration to address. Through Integrative Design, we have the ability to respond thoughtfully, thoroughly, and with informed intent to the complex, multi-causal challenges the world faces today.

The two-year MDes in Integrative Design graduate program at the Stamps School of Art & Design at the University of Michigan leads the charge to create and strengthen a new kind of designer able to respond to the demands of the 21st century. Alongside industry and non-profit partners, students in the MDes program address real-world wicked problems through hands-on, project-based work in the context of one of the world’s premier research institutions. Each year, the University of Michigan spends $1.48 billion on research, demonstrating deep and resourced commitment to the advancement of new knowledge.

We have a strong placement rate for our graduates. MDes graduates leave the program with a roster of industry contacts, the ability to leverage the power of collaboration in unprecedented ways, and expertise in the application of a human-centered design methodology called STEEP-V.

**DESIGN AS ACTION**
In order for integrative design to work optimally, MDes students work together, with, and for their partners and stakeholders. Design is a verb in this context—it is something we do, a process we employ. It is not a product we produce. Centered in research and working hand-in-hand with partners, stakeholders, and constituents, Integrative Design is not locked into one disciplinary design strategy. Instead, we are adaptive, utilizing multiple tactics as the project or problem requires.

STEEP-V interrogates the Social, Technological, Economic, Ecological, Political, and Values-based issues surrounding the challenge at hand. It is an effective, human-centered methodology for addressing the complex, provocative issues of our world—and its applications are endless.
In the first 4 years of the MDes program, students have worked with:

- **150+** workshop and charrette participants at the MDes studio
- **26** institution partners, conducting over 1,500 hours of on-site research
- **32** University of Michigan Schools and Departments
- **100+** faculty, researchers, and industry practitioners
MDes Cohort

Each cohort comprises professionals who wish to transform their careers through critical thinking, analysis, and an unflinching examination of complex, real-world problems.

Hand-picked with an eye for diverse global perspectives and knowledge from across the design disciplines and beyond, the MDes cohort is small in size, ensuring optimal collaboration in an environment where all members are seen, heard, and active.

MDes Cohort Members come from a wide spectrum of backgrounds
Successful applicants will be:

- **Experienced Designers** wishing to transform their career path or professionals in other fields who want to transition to a design-engaged practice

- **Career Changers** proficient in specialized, complementary skills they want to incorporate into an integrative approach

- **Collaborators** seeking a design-centered approach to solving complex problems

- **Curious Leaders** looking to push the design discipline and industry forward

- **Researchers** prepared to revise and expand their understanding of research, design methods, and design practices

- **Self-starters** excited to bring together people and resources to create sustainable change
CASE STUDY: A 2019 THESIS PROJECT

Designing Shared Decision-Making
A set of tools to tailor post-surgery pain management plans for patients

In a jointly researched thesis project, Prachi Bhagane and Bruna Oewel (MDes ’19), sought to reduce Michigan’s growing opioid addiction crisis by cutting down on the number of excess prescription opioids in circulation.

The students worked with Dr. Sawsan As-Sanie, an obstetrician and gynecologist at Michigan Medicine, who is piloting a new program to help doctors and patients make postoperative medication decisions with the goal of reducing prescription opioids. Through their research, Bhagane and Oewel found patients are often ill-informed about pain management options while also overwhelmed by the prospects of their surgery and recovery. As a result, patients often ask for as many opioids as allowed, because they are nervous about pain. Even if they never use them all, the pills are already out there, where it’s easier for them to become a problem.

“We started thinking, ‘How might we support the interaction between patients and care providers in order to tailor their pain management decisions to their individualized needs,’” Bhagane said.

Through extensive interviews and observations, Bhagane and Oewel concluded patients need to have expectations set about not only what kind of pain they can expect, but also the variety of ways it can be treated. Next, they need time to think about their options. And last, they need consistent information from start to finish, so even if they only receive brief instructions, whether it’s during an initial consultation or at discharge, the message is the same.

“We cannot change the amount of time providers have available, but we can support patients to feel empowered to ask questions of providers and make them...
Partnerships & Collaboration

The intensity of collaboration in the MDes program cannot be understated. Each MDes cohort forms a pro-bono integrative design firm of sorts, trading in creative briefs for a wicked problem and a small collection of hand-picked potential partners. Selected by the MDes faculty advisors or sourced by the cohort, these potential partners are best able to address the wicked problem in the context of the program and are best positioned to help MDes students achieve their personal goals for the program. Collectively, the MDes cohort decides which partner(s) to take on for the duration of the program — along with an approach to the wicked problem suitable to the partnership.
CASE STUDY: A 2019 THESIS PROJECT

Co-Design as a Means of Institutioning and Infrastructuring for Youth-Informed Policy

For her thesis work, Katherine Jones (MDes ’19) uncovered ways to bring support to policymakers as they worked to understand and resource mental health issues in their communities. Specifically, she saw opportunity in strengthening communication between young people and legislators through design.

To do this, she partnered with Michigan Medicine’s Dr. Tammy Chang and the team behind MyVoice, a text-message based survey tool Chang developed to gather input from young people age 14 to 24. Started in 2018, the program has 200 youth participants in Washtenaw County and 1,800 nationwide.

Jones also talked with local policymakers, youth organizations, and government agencies to learn what issues they’re currently working to address. After learning the Washtenaw County Health Department and the Community Mental Health Board were both looking at ways to address a rising adolescent mental health crisis,

Past project partners include:

- BLUE CROSS BLUE SHIELD OF MICHIGAN
- GUARDIAN INDUSTRIES CORP
- IBM WATSON HEALTH
- KELLOGG EYE CENTER
- LIFEBOX
- MICHIGAN MEDICINE DEPARTMENT OF PATHOLOGY
- MICHIGAN MEDICINE EMERGENCY DEPARTMENT
- MICHIGAN OPEN (OPIOID PRESCRIBING ENGAGEMENT NETWORK)
- STEELCASE HEALTH
- THE MICHIGAN PROGRAM ON VALUE ENHANCEMENT
- THE OFFICE OF PATIENT EXPERIENCE AT MICHIGAN MEDICINE
- VA ANN ARBOR HEALTHCARE SYSTEM

We are seeking to extend our network of stakeholders that are actively tackling these wicked problems, and would welcome the opportunity to work together, with, and for partners from the corporate and non-profit sectors. If this is you, please get in touch.

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she decided to focus there. Jones worked with the MyVoice team on a new set of questions around mental health and then scoured the responses for common themes. The big thing that stood out was social stigma as being at the “root of everything happening.”

While policymakers are often interested in the data and anecdotes collected by MyVoice, Jones said many are unsure what to do with it, in part, because of how it gets presented to them; valuable insights get lost in nondescript “one-pager” or “white paper” — the industry standard — styled reports.

“It’s too text heavy, it’s not easy to digest, it doesn’t fit in their workflow,” she said. “It’s missing storytelling and narrative. Any advocate who works in this space knows that personal stories are what moves the needle.”

So Jones created a more visual representation of the data that also explained the major warning signs of mental health issues. Using the text messages themselves, Jones’ new policy brief format demonstrates the difference between a young person who is thriving and one who isn’t by juxtaposing them together. The result: readers are drawn in and want to know more, asking themselves, “How many kids in my community aren’t thriving? Now that I know the components, how do I help them along in achieving them?”

In addition to raising questions, the briefs also present readers with a series of probing questions to get them thinking about the consequences of inaction. But Jones said the goal isn’t to lead them to any one answer or tell them what to do.

“It’s to say, ‘There’s a mental health crisis, here’s what youth are thinking and saying about it, and here’s a document that can help you ask questions and think about it — to bring your own knowledge of your own community to think about the right direction,’” Jones said.

To explore more MDes thesis work, visit stamps.umich.edu/graduate-programs/mdes_work
Proven Results

Across industries, employers recognize the distinct benefits of deep collaboration with designers to identify, envision, and co-create the systems-based products, services, and environments of the 21st Century.

Stamps MDes graduates possess a unique set of cross-disciplinary skills and demonstrable evidence of those skills in action, creating true professional distinction and meeting the growing employer demand for creative, nimble, and strategic collaborators.

Discover more at stamps.umich.edu/mdes-stories
I realized that we really needed to personalize the way we deliver patient education. Currently, there is no standard for this. Through an intense research process, the MDes cohort has helped us move towards productive patient conversations that support behavioral change and a healthy self-care plan.

PAULA ANNE NEWMAN-CASEY, MD  
Assistant Professor in the Department of Ophthalmology and Visual Sciences at the University of Michigan Kellogg Eye Center

I have always believed in working with stakeholders to develop things that they need rather than forcing solutions on them. However, as we grow our staff, it’s hard to transfer those skills without training. The MDes students embodied that spirit while creating tools for the Office of Patient Experience that can help my staff be able to move into the future and build a culture where everyone is part of the process.

MOLLY DWYER-WHITE, MPH  
Administrative Director in the Office of Patient Experience at Michigan Medicine

It was clear to me that the ways we’d been looking at improving patient transitions from hospital to home weren’t really making things better for patients or their families or caregivers. The MDes cohort was able to uncover the issues impacting this transition in new light which helped the healthcare teams design responses in a very systematic, yet entirely empathetic way.

LAKSHMI HALASYAMANI, MD  
Chief Quality and Transformation Officer and Davis Family Chair at North Shore University Health System
Career Placements

Pioneers in their profession and their approach, MDes graduates are establishing themselves in a variety of ways at these organizations:

▸ Boston Consulting Group
▸ Diagram
▸ Doblin (Deloitte)
▸ Doctoral Studies in Media and Information at Michigan State University
▸ EPITEC
▸ Guardian Industries
▸ Kaiser Permanente Innovation
▸ School of Public Health at the University of Michigan
▸ Steelcase
▸ Veryday
▸ Workplace Safety and Insurance Board (Toronto)
Building relationships outside of the university through projects, site visits, fieldwork, competitions, and internships is an integral part of the MDes curriculum.

**MDES STUDENTS HAVE INTERNEd WITH:**
- C.S. Mott Children’s Hospital
- Doblin (Deloitte)
- Guardian Industries Corp
- Integrated Michigan Patient-centered Alliance in Care Transitions (Blue Cross Blue Shield of Michigan’s first patient-focused Collaborative Quality Initiative)
- Philips Medical Systems International B.V.
- The Michigan Program on Value Enhancement (MPrOVE)
- University of Michigan Kellogg Eye Center
- University of Michigan School of Public Health
- Knowledge to Treatment Optimization Program (KTOP) at Michigan Medicine

**SITE VISITS:**
- Airbnb
- Autodesk
- Brightspot
- The Center for Urban Pedagogy
- Cooper
- DESIS Lab at Parsons
- Diagram
- Doblin
- Fjord
- Guardian Industries Corp
- Humanititific
- IBM Watson Health
- IDEO
- IDEO.org
- LUNAR
- Pixar
- The Public Policy Lab
- Steelcase
- SYPartners

**MDES STUDENTS HAVE DONE FIELDWORK AT:**
- Guardian Industries Corp.
- Steelcase
- IBM Watson Health

Professionally Networked
MDes Faculty Advisors

At Stamps, MDes students have access to the practice and expertise of some of the top voices in the field. Each MDes candidate is assigned a faculty advisor who serves as a mentor and a guide.

Faculty offer a broad spectrum of research and professional experiences, serving as the primary support for students in academic planning, advising, and addressing challenges.

DISCOVER MORE
For more information about each faculty member and examples of work visit: stamps.umich.edu/mdes-faculty

JOHN MARSHALL, PHD
Associate Professor
MDes Program Director
• digital fabrication
• tangible user interfaces
• design methods
• problem-based learning
• cross-disciplinary design
• design research and scholarship

AUDREY BENNETT
Professor
• participatory and human-centered design
• scholarly writing on design
• human subjects research
• interactive aesthetics
• graphic design

SOPHIA BRUECKNER
Assistant Professor
• UX/interaction design
• health and wellbeing technology
• digital fabrication
• generative systems
• wearables
• design ethics
DEEPA BUTOLIYA, PHD
Assistant Professor
▸ industrial design
▸ speculative and critical design
▸ low-resource making (jugaad)
▸ decoloniality
▸ architecture

RON EGGLASH, PHD
Professor
▸ ethnomathematics
▸ cybernetics
▸ system engineering
▸ fractal patterns in African architecture, art, and religion
▸ relationships between indigenous cultures and modern technology

ROLAND GRAF
Associate Professor
▸ architecture
▸ object design
▸ human interface development
▸ interactive installation

KELLY M. MURDOCH-KITT
Assistant Professor
▸ collaboration
▸ design research
▸ graphic design
▸ user experience and interaction design
▸ service design

FRANC NUNOO-QUARCOO
Professor
▸ publication design
▸ interface design
▸ exhibition design
▸ design research and scholarship

SUN YOUNG PARK, PHD
Assistant Professor
▸ human computer interaction
▸ user experience design and design research
▸ computer-supported cooperative work
▸ health/medical informatics
▸ social computing

HANNAH SMOTRICH
Associate Professor
▸ publication design
▸ environmental graphic design
▸ community design collaborations
▸ visual identity systems

OMAR SOSA-TZEC, PHD
Assistant Professor
▸ information design
▸ visual rhetoric
▸ human-computer interaction
▸ user experience and interface design
▸ inspection methods for interfaces and interactions

BRUCE THARP, PHD
Associate Professor
▸ sociocultural anthropology
▸ mechanical engineering
▸ industrial design
▸ commercial and speculative product design
▸ design entrepreneurship

STEPHANIE THARP
Associate Professor
▸ design process
▸ interdisciplinary and team-based design
▸ critical design practices
▸ design research

NICK TOBIER
Professor
▸ landscape architecture
▸ public projects and actions
▸ social entrepreneurship
▸ critical and speculative writing

JOE TRUMPEY
Associate Professor
▸ ecological design
▸ permaculture design
▸ natural materials and building
▸ community-based design build
▸ constrained resource design
### U-M Resources

**You have access to...**
- world-class studios
- radiology lab
- state-of-the-art digital media labs
- multi-camera HD video studios
- robotics institute
- virtual reality cave
- 3D printers, routers, and scanners
- physical computing studio
- materials library
- computer and video game archive
- nanotechnology institute
- industrial knitting machines
- map libraries
- 3 hospitals
- large-format printers
- 40 outpatient locations
- 24-ft astro-tec dome planetarium
- 7 U-M museums
- artificial intelligence lab
- motion capture facility
- MRI scanners
- museum of zoology collections
- anatomy labs
- professional audio recording studios
- botanical gardens
- entrepreneurship clinic
- 2 Stamps School galleries
- 150 clinics
- billions of points of healthcare data
- 17 statewide quality collaboratives
- 1.7 million plants in the herbarium
- marine hydrodynamics lab

**And collaborate with...**
- engineers
- filmmakers
- physicians
- climatologists
- architects
- astrophysicists
- nurses
- urban planners
- healthcare researchers
- design historians
- public policy makers
- journalists
- microbiologists
- nanotechnology researchers
- anthropologists
- curators
- sound engineers
- social workers
- chemists
- ecologists
- neuroscientists
- botanists
- information architects
- data analysts
- cancer researchers
- cognitive scientists
- industry professionals
- forensic scientists
- screenwriters
- entrepreneurs
- public health experts
- 3D modeling experts

*and more...*
Metro-Detroit & Ann Arbor

Ann Arbor is consistently ranked one of America’s best college towns, offering a rich cultural and intellectual life and a vibrant sense of community. We’re just a short drive away from Toronto, Chicago, and of course Detroit — America’s only UNESCO City of Design.

#1 “Ten Most Walkable Neighborhoods in the Midwest”
REDFIN.COM • 2016

#1 “Most Educated City in America”
WALLETHUB • 2018

“Top 25 Happiest Cities in the United States”
NATIONAL GEOGRAPHIC • 2017

“Best Places to Live in America”
TIME • 2018

“One of the Most Innovative Cities in America”
24/7 WALL ST • 2018

“One of the Best Cities to Live in America”
NICHE • 2019
Stamps Visiting Designers

During the academic year, students have direct access to a wide array of creative innovators who are part of the Stamps Distinguished Speaker Series and the Witt Visitors Program. Visitors meet with graduate students for group or individual discussions.

PAST VISITORS HAVE INCLUDED:

CEO of IDEO Tim Brown  
Information Designer Richard Saul Wurman  
Architect and Designer Michael Graves  
Graphic Designer Jonathan Barnbrook  
Information Architect Lisa Strausfeld  
Designer and Activist Emily Pilloton  

Graphic Designer Paula Scher  
Architect and Designer Bjarke Ingels  
Droog Design Co-founder Gijs Bakker  
Interaction Designer Massimo Banzi  
Inclusive Design Sara Hendren  
Graphic Designer Stefan Sagmeister
Curriculum Overview

The MDes curriculum includes both design education and engagement training. Within the structure of the umbrella topic, the first year is focused on identifying the problems and the second year on addressing them.

Stamps MDes faculty are the primary source of support to candidates in planning their academic program, seeking advice, and dealing with challenges as they arise. Credits for studio work are split between collaborative work and individual development.

**How It Works**

**First Semester**

Students improve facilitation skills and build deep knowledge of collaboration methods.

- **Design Studio 1A Inquiry** 6 (4+2)
- **Research Methods** 3
- **Design Studio 1B Integration** 3
- **University Elective** 3

**Total Credits** 15

**Second Semester**

Students gain theoretical grounding and practical application of all prior work.

- **Design Studio 2 Prototyping** 6 (4+2)
- **Design Seminar Design for the 21st Century** 3
- **University Elective** 3
- **University Elective** 3

**Total Credits** 15

**Summer**

Students make industry connections and get a clearer perspective on where they fit.

- **Fieldwork Studio** 6 (4+2)

**Total Credits** 6
DESIGN STUDIO 1A is focused on inquiry. What is known? What is not known? Who do we know? Where is the opportunity? The cohort will be exploring the territory and looking for open areas where contributions can be made.

That effort is supported by the RESEARCH METHODS and the INTEGRATION STUDIO 1B that delve into the resources of the University and beyond. How do other researchers go about doing their work? What can we contribute to that? What are we integrating? How are we going to integrate it?

In second semester, DESIGN STUDIO 2 centers on prototyping. It’s about taking what we’ve learned from the first semester and trying to deploy it. We want to capture some information and data about how our ideas operate in the world. What works well? What needs to be fixed? This is backed up by DESIGN FOR THE 21ST CENTURY, a design seminar that explores this new program in Integrative Design and how it operates in the world. How is it different? And why?

THE SUMMER FIELDWORK STUDIO takes the things that we’ve learned and the ideas that we’re exploring and moves them into different contexts. For example, we might start our summer as part of a collaborative pop-up studio with another university design graduate cohort, then move to working in a corporate context, and then to working in a small consultancy. It’s all about integrative design—trying out different models in different contexts.

Third semester is the ramp-up towards the thesis. CO-CREATION STUDIO 3 focuses on finding your constituents, your stakeholders, and your partners; beginning the process of getting buy-in on the identified opportunity; and actually beginning to build a project. This is backed up by THESIS PREP, which focuses on the research and methodologies that are necessary to undertake the project and the writing necessary to complete the document itself.

PROFESSIONAL PRACTICE looks toward the future, when you’ll have your Masters of Integrative Design. How do you make a case for having such a unique qualification? What are the opportunities? What will the ladder be post-graduation?

Fourth semester is primarily your THESIS PROJECT. You’ll work together with the MDes cohort, with faculty, and with your networks to define, refine, and present your thesis to the world.

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THIRD SEMESTER

Students make tangible progress toward their thesis and further tools for building with and for end users.

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<thead>
<tr>
<th>Design Studio 3</th>
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<tr>
<td>Co-creation</td>
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<tr>
<td>Thesis Prep</td>
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<td>Design Seminar</td>
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<td>Professional Practice</td>
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TOTAL CREDITS 12

FOURTH SEMESTER

Students finalize their thesis publication and use project-driven outcomes to help prepare them for career next steps.

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<tr>
<th>Thesis Project</th>
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<td>University Elective</td>
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<td>Thesis Prep</td>
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<td>Design Seminar</td>
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<td>Professional Practice</td>
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TOTAL CREDITS 12

CREDIT BREAKDOWN

Studio work is divided into two different sets of credits each semester.

FIRST-THIRD SEMESTERS

4 credits • Collaborative work overseen by studio leader
2 credits • Individual development within the collective activities, overseen by primary advisor

FOURTH SEMESTER

6 credits • Overseen by primary advisor
3 credits • Overseen by studio lead
The MDes studio has been designed to support collaboration — it is flexible and reconfigurable, with spaces and tools for both group and individual work, as well as a broad range of prototyping processes.

Graduate students also have 24/7 access to large state-of-the-art metals, fibers, ceramics, sculpture, wood, print, digital media, and digital fabrication studios, as well as a range of resources only available at a top research university, such as audio engineering booths, robotic labs, virtual reality studios, specialized libraries, institutes and collections, and much more.

MDes Collaborative Studio

Students conduct their creative work in a new collaborative space within a 33,000 square-foot facility that also houses faculty studios, a multi-purpose shop, digital media equipment, and large shared working and meeting spaces.
Over the course of two days, MDes students presented MDes × IBM, a design charrette to explore the intersection of cognitive technology and healthcare. Participants represented a wide range of disciplines and expertise. In addition to IBM Watson Health Team, MDes students hosted other industry leaders in manufacturing and technology, including Guardian Industries Corp, Georgia Pacific, Molex, Stryker, and Steelcase Health. Collectively, the industry participants represented at the charrette were worth $239 Billion, demonstrating high-level corporate interest and support. Additionally, faculty and students from across the university participated in the charrette, as did clinicians and administrators from Michigan Medicine, providing a rich diversity of thought. Together, charrette attendees participated in a series of design-led team activities to help support the creation of five different scenarios where cognitive technology intersects with healthcare.

MDes Charrettes

At key moments throughout the program, MDes students conceive of and host Design Charrettes with partners and stakeholders. These intense systems and strategy design sessions lead to tangible outcomes and recommendations that address vital elements of the cohort’s wicked problem.
Generous Financial Support

The Stamps School is eager to bring Integrative Design practices into industry, non-profits, and the world at large through the work accomplished within our graduate program — and through the continuation of this work by graduates of our program. To achieve this, we offer generous financial support.

**TYPES OF SUPPORT AVAILABLE FROM THE STAMPS SCHOOL:**
- teaching assistantships
- research assistantships
- tuition waivers
- stipends
- health care packages
- project scholarships
- studio expense discretionary funds
- summer fieldwork project discretionary funds

Additionally, the Rackham Graduate School provides funding for graduate students at the University of Michigan, including additional travel, research, and conference funds.

Learn more at [stamps.umich.edu/funding](http://stamps.umich.edu/funding) and [rackham.umich.edu/funding](http://rackham.umich.edu/funding)
MDES PROGRAM HIGHLIGHTS

- substantial experience in integrative design methods and practices
- involvement with real-world clients and stakeholders
- access to hundreds of experts and professionals from across the U-M campus
- project-based learning
- skill building in research-led design and design-led research methodologies
- collaborative studio in the faculty/graduate student studio building
- generous financial support
- access to the facilities and resources of a top-tier research university
“This is one of the best integrations of design approaches in an MDes program that I’ve seen anywhere in North America.”

PETER JONES, author of Design for Care: Innovating Healthcare Experience and Associate Professor, OCAD University