CLINICAL INFORMATICS MANAGEMENT

The Master of Science in Clinical Informatics Management program (MCiM) is an intensive, one-year professional master's degree combining business and technology constructs directed toward our migration to value in health care. MCiM is housed within the Clinical Excellence Research Center in the School of Medicine. The program offers students a unique experience of both remote and weekend onsite sessions to fit the needs of working professionals. Master of Science in Clinical Informatics Management courses provide rich learning experiences for students through a collaborative environment and dynamic course content. Through the coursework, students gain a deep understanding of health informatics and the business insights to accurately leverage technology to succeed in the real world.

COVID-19 has reinforced the longstanding need for leaders who can expertly navigate business, technology, and medicine to manage and drive the digital transformation of a $4.0 trillion health care system. Diverse applications such as telemedicine for routine clinical care and digital radiology for the rapid diagnosis of COVID pneumonia are among some of the opportunities the crisis has highlighted. Others include greater capabilities for remote health monitoring, wearable sensors for monitoring patients, the health of populations on college campuses and in the workforce, and interactive voice-response tools such as Alexa, Siri, or Hey Google to provide new patient care services.

Behind the scenes, machine learning has been rapidly adopted in applications as diverse as screening potential therapies for application to COVID and profiling symptoms that might indicate infection. Failures of the existing health care infrastructure have also been glaringly illustrated by the lack of interoperable data between hospitals and between the public and private sectors, as well as the lack of access to real-time data and reports as the COVID situation rapidly unfolded. Together, these scenarios call for leadership that brings together technology and clinical business units in entirely new ways.

MCiM develops managers and senior leaders who have a keen understanding of the strategic business concepts and data science principles fundamental to raising the quality and efficiency of care delivery, in the COVID era and beyond. The founder of MCiM, Kevin Schulman, Professor of Medicine (Hospital Medicine) and, by courtesy, of Operations, Information and Technology at the Graduate School of Business, built the country's first clinical informatics management program at Duke University in 2011. Graduates from that program have moved into management and senior leadership roles such as CEO, CIO, CMIO, CHIO, and Health Care IT Director.

Admission

Applicants are expected to have graduated from an accredited undergraduate degree program or an international degree that is equivalent to a U.S. bachelor's degree from a college or university of recognized standing. They must demonstrate their capability to manage the intensity and rigor of the MCiM program and to leverage it to advance their career. For complete information regarding applying, see the MCiM Application website (https://med.stanford.edu/master-clinical-informatics-management/admissions/application.html).

Applications for MCiM are submitted via the Stanford Graduate Admission website (https://gradadmissions.stanford.edu/); the Graduate Admissions website has complete information on the application process.

All applicants must submit the following required materials as part of their application.

- Undergraduate and graduate transcripts, as appropriate.
  - Unofficial transcripts are appropriate for the application but students must provide official transcripts if they are accepted into the program.
- Response to program-developed essay question (maximum 250 words, 12-point font and double spaced) to assess program readiness and career interest:
  - How will MCiM prepare you for your career aspirations? Do you intend to maintain, advance or perhaps switch roles with the skills you acquire through MCiM?
- Curriculum Vitae
- Statement of purpose (max 2 pages, 12-point font and double spaced); describe:
  - Why do you believe MCiM is the correct program for you?
  - How have your educational and/or academic experiences prepared you for the program?
  - How are your personal and/or professional interests represented in this program?
  - As a working professional, how are you prepared for success in managing this program?
  - Are there any additional background and interests you want to share with the admissions committee?
- Three letters of recommendation addressing work and/or educational experience highlighting the potential for success in MCiM
  - At least one evaluation and letter should be from a faculty member at the last school you attended as a full-time student, unless you have been out of school for more than five years
- $125 application fee
- TOEFL scores, if applicable
  - Exemptions may be granted to applicants who have earned a U.S. bachelor's, master's, or doctoral degree from a college or university accredited by a regional accrediting association in the United States, or the international equivalent degree from a university of recognized standing in a country in which all instruction is provided in English. Learn more about policies regarding TOEFL scores at the Stanford Graduate Admissions website (https://gradadmissions.stanford.edu/applying/starting-your-application/required-exams/).

Degree Requirements

The University requirements for the M.S. degree are described in the "Graduate Degrees (http://exploredegrees.stanford.edu/graduatedegrees/)" section of this bulletin.

MCiM is an intense but achievable academic experience, designed to be completed in a single year while maintaining a full-time work schedule. Classes meet every other weekend (Friday and Saturday) on the Stanford campus to minimize lost workdays during the program.

Due to its unique meeting schedule, MCiM students have a set curriculum with no elective courses. Students move through the quarters as a cohort, providing an opportunity for students to foster a strong sense of community.

All MCiM courses are required courses.

To complete the master's in Clinical Informatics Management, students must complete a minimum of 45 units. During quarters three and four, students complete a practicum course, with the bulk of the effort for this course occurring in quarter four.

MCiM Program Proposal

MCiM students are required to submit a program proposal at least two weeks before the final study list due date of their first quarter of

enrollment. Due to MCiM's set curriculum, a pre-filled proposal is available for MCiM students on the MCiM Resource Hub. Students must sign and submit the proposal to the MCiM administration; failure to do so is grounds for dismissal from the program. As there are no shifts in curriculum or electives allowed, there should be no need to revise the program proposal after submission.

Course Requirements

Students take a set of required courses during each of the four academic quarters. These courses reflect the overall set curriculum of the program and cannot be taken at alternative quarters. The curriculum consists of six business courses, six information technology courses, and a required ethics course. Currently, there are no elective courses offered through the program. The complete schedule of courses is listed below. All courses are required. No substitutions are permitted.

		Units
Summer Quarter		
MS&E 240	Accounting for Managers and Entrepreneurs	3
BIOE 273	Biodesign for Digital Health	4
MED 218	Principles of Business Strategy	3
MED 220	Bioethical Challenges of New Technology	1
Autumn Quarter		
MED 230		3
MED 286	Health Information Technology and Strategy	4
MED 238	Leading and Managing Health Care Organizations: Innovation and Collaboration in High Stakes Settings	3
MED 220	Bioethical Challenges of New Technology	1
Winter Quarter		
MS&E 249	Corporate Financial Management	3
MS&E/PEDS 263	Healthcare Operations Management	3
BIOMEDIN 225	Data Driven Medicine: Lectures	3
MED 224	Social Entrepreneurship and Innovation Lab (SE Lab) - Human & Planetary Health	3
MED 220	Bioethical Challenges of New Technology	1
Spring Quarter		
BIOMEDIN 210	Modeling Biomedical Systems	3
BIOMEDIN 254	Quality & Safety in U.S. Healthcare	3
MED 224	Social Entrepreneurship and Innovation Lab (SE Lab) - Human & Planetary Health	3-4
MED 220	Bioethical Challenges of New Technology	1
Total Units		45-46

*Students must submit paperwork and deliverables around practicum administered through MED 224.

For a statement of University policy on graduate advising, see the "Graduate Advising (http://exploredegrees.stanford.edu/graduatedegrees/#advisingandcredentialstext)" section of this bulletin.

MCiM is committed to providing academic advising in support of graduate student scholarly and professional development. When most effective, this advising relationship entails collaborative and sustained engagement by both the advisor and the advisee. As a best practice, advising expectations should be periodically discussed and reviewed to ensure mutual understanding. Both the advisor and the advisee are expected to maintain professionalism and integrity.

Graduate students are active contributors to the advising relationship; students are expected to proactively seek academic and professional guidance and take responsibility for informing themselves of policies and degree requirements. MCiM administrative program staff also play an important part in student advising. Program staff informs and advises students about University and department requirements, procedures, and opportunities.

All MCiM students have the MCiM Director of Graduate Studies assigned as their faculty advisor. In this role, the advisor communicates and is available to students regarding degree requirements and academic and non-academic policies that pertain to students, and serves as a general mentor regarding research and exploring academic opportunities and professional pathways.

Director of Clinical Excellence Research Center: Arnold Milstein

Director of Graduate Studies: Kevin Schulman

Associate Director: Zoë Richardson