MILI Newsletter - August 2020

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Medical Industry Leadership Institute <mili@umn.edu> Thu, Aug 13, 2020 at 10:18 AM
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Welcome back!
We hope everyone stayed safe and healthy and is enjoying summer! We have all had a few months to adjust to our new routine with COVID-19 and now working, schooling and even socializing from home seems normal.

Here at MILI we have been working on making the same adjustments and figuring out what our new normal looks like. We have offered webinars, provided research and funding opportunities for students who lost internships and have contributed research data on COVID-19 and hospitalizations.

Whether you plan to escape on a “stay-cation,” work on home improvement projects, or socialize from six-feet away, we hope you have a wonderful rest of the summer!
MILI Sponsors COVID-19 Focused Research Projects

This summer MILI worked with students, affiliates, and Carlson colleagues to develop a summer research project program to support MBA students who lost their internships or were unexpectedly unemployed. Projects provide students not only with a stipend but gives them an opportunity to research timely topics and contribute potential new ideas and innovative thinking to the current global pandemic. These research projects give students real-world educational experience as well as opportunities to work with knowledgeable industry advisors. At the end of their projects, students will write a research paper and present their findings to the MILI community. Below are brief descriptions of the three projects currently in progress:

Arijit Chanda, a full-time MBA, is working with Paul Rothweiler at the Earl Bakken Medical Devices Center (MDC) on “MedWorx: Development of Virtual Reality based solutions for anatomy visualization, medical device design, and implementation.” With COVID-19 forcing schools to go online, there is an ever-increasing need for medical programs to adopt Virtual Reality instead of a cadaver for teaching anatomy. This research aims to validate the possibility of MedWorx creating an application to provide medical students, clinicians, medical device companies, and other healthcare professionals with the experience of visualizing anatomy, more cheaply by using open-source software in the background. One of the goals of this application is to develop a two-screen window - a. The left screen- provides a virtual reality-based anatomy depiction of a real surgery; b. The right screen shows footage from the actual surgery. Given the efficacy of VR in enhancing human learning, this application is expected to add significant value, even in the post COVID-19 world.

James Burzynski, PharmD, part-time MBA is working with Carlson MBA alumni Paul Hinz, Co-Founder of Health Factors on a project with Ambient Intelligence, “Multisensor monitoring of patients to improve care delivery during COVID.” This project aims to improve care in highly susceptible nursing home populations by utilizing sensors contained in a watch along with a digital camera to improve patient monitoring in nursing homes. The technology utilizes software with an expanding array of capabilities. The first use case being investigated is for real time fall monitoring and notification. Falls are the leading cause of both fatal and non-fatal injuries in those over age 65. This will augment the work of staff stressed with labor shortages related to COVID-19 in long term care. It will aid in relieving the difficult working conditions where nursing staff are diverted to more direct patient care responsibilities and may have less time to make rounds to find patients that have fallen. The technology is also investigating use of the same devices to detect signs of depression in the elderly. COVID-19 has increased the rate of depression in senior living due to isolation from friends and family brought on in part due to strict visitor restrictions. The solution will help to provide more objective measures of depressive symptoms such as decreased movements, changes in sleep behaviors and weight loss to flag the patient as being at risk for depression and in need of intervention.
Matthew Spanovich, full-time MBA, is also working with Rothweiler and the MDC on “Antiviral Thermoplastics: Environmental intervention to combat COVID-19 and healthcare-associated infections.” The MDC is working to reduce COVID-19 transmission by developing an antiviral plastic. This project makes strategic recommendations for commercialization to the MDC and presents an argument for its adoption in the corresponding white paper. To the MDC, this research provides an analysis of the intellectual property landscape, a market analysis, and a nuanced understanding of the voice of the customer. In a white paper, the team provides a comprehensive review of recent research on healthcare-associated infection (HAI) prevalence, economic impact, and prevention strategies, making the argument for environmental intervention via antiviral high-touch surfaces.

The Coventor: Its Development, Implications, & Lessons Learned

On August 3rd, MILI Academic Director, Prof. Pinar Karaca-Mandic, hosted a webinar showcasing the innovative alternative to a ventilator, the Coventor. The Coventor was developed and brought to market in 30 days through a unique partnership with the University of Minnesota Medical School, the Earl E. Bakken Medical Devices Center, Boston Scientific, Medtronic, and UnitedHealth Group. Prof. Arthur Erdman, PhD (Earl E. Bakken Medical Devices Center), Jim Kleinedler, PhD (Boston Scientific), Mike Hess (Medtronic), and David Cook, MD (UnitedHealth Group) joined Prof. Karaca-Mandic to tell the story of the Coventor, its implications, and the lessons they learned. Listen to the recorded webinar here.

This webinar is part of a series organized by members of the Business School Alliance for Health Management (BAHM) bringing together business leaders and scholars in virtual events to discuss timely and relevant issues related to how COVID-19 has disrupted the healthcare marketplace, and is shaping the future of various healthcare sectors. MILI is proud to be spearheading this effort and hosted the Coventor webinar as the first in the series.

The Future of Healthcare: What Will it Look Like? Who Will Lead It?

MILI Academic Director, Prof. Pinar Karaca-Mandic, hosted a two-part session as part of Carlson School’s MBA Class Reunion Virtual Gathering to explore COVID-19 and the future of healthcare. Prof. Karaca-Mandic was joined by Dr. Eva Enns for a discussion on the Minnesota COVID model followed by a panel discussion with healthcare experts from UnitedHealthcare, Optum, and Mayo Clinic to explore the future of healthcare. Panelists included Pam Stegora Axberg, Dino Bilankov and Dr. Victor Montori.

COVID-19 Hospitalization Tracking Project
The Hospitalization Tracking Project started in March by MILI Academic Director Prof. Pinar Karaca-Mandic, MILI Executive in Residence Dr. Archelle Georgiou, and Director of Research for MIS Research Center Prof. Soumya Sen continues to collect and track COVID-19 hospitalizations, intensive care unit and ventilator use across states, and across counties/regions in the states that provide information. The team includes multiple graduate students as well as Carlson School undergraduate students who dedicate many hours in diligent data collection and analysis. Research from the project has been featured in *The New York Times, The Wall Street Journal, Star Tribune,* and several online publications. The team has also published articles based on their research in *Health Affairs, JAMA, The Evidence Base, and Health Management, Policy, and Innovation (HMPI).* In this project, the MILI/MISRC team has ongoing collaboration on multiple papers (forthcoming) with leading researchers at the University of Southern California’s Leonard D. Schaeffer Center, University of Washington’s CHOICE Institute as well as Indiana University.

Visit the Hospitalization Tracking Project website to learn more and read the latest articles on the Project’s Publications page, and stay tuned for new work that is coming out soon.

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**MILI STUDENT NEWS**

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**GRADUATE**

**Updates from the MILI Student Association (MILIsa)**

**Racial Justice + Equality in Healthcare:**

The MILIsa board strongly believes that it is critical for MILI courses and curriculum to reflect the diverse student population that Carlson draws. The board recently
worked with MILI leadership to source a collection of case studies and research reports that will enhance MILI curriculum in a meaningful way, through both facilitating discussion and increasing awareness about racial injustice and inequality in healthcare.

**MILIsa x MILIu Mentor Program:**
MILIsa is partnering with MILIu to organize a new mentor program that pairs MBA MILIsa board members with undergraduate MILIu board members. The program is intended to serve as an opportunity for MBA students to share their experiences working in Healthcare and to provide advice related to the recruitment process for various jobs within the Healthcare industry. In addition to career-specific structured content, the program will also be an avenue for undergraduate students to learn about Carlson's MBA program and MILI curriculum. The program will be piloted this year between the two club boards, with plans to expand during the 2021-22 academic year.

**MILIsa Virtual Events:**
MILIsa is in the process of planning panel discussions and information sessions for the fall in a virtual format. Stay tuned for more details in the coming months.

**MILI is Hiring a Program Graduate Assistant!**
Learn more about the position [here](mailto:pkmandic@umn.edu). Contact MILI Academic Director, Prof. Pinar Karaca-Mandic, with questions.

Interested? Email your statement of interest and resume to pkmandic@umn.edu.
**Application deadline:** Friday, September 11, 2020

**Registration is open for Bay Area Valuation Lab (MILI 6997)**
Join MILI for the Bay Area Valuation Lab. In this four-credit course (spring registration), teams of students complete a rapid production market analysis of promising medical technologies and services to determine potential for success in a global market. Typically, this program is held in the Bay Area with home base in Palo Alto. Due to COVID-19, program travel has been cancelled. We will still offer a mix of class sessions, Bay Area speakers, and group work. Previous international experience is required.

**Dates:** January 5-15, 2020 with three pre-departure sessions in Nov/Dec 2020
**Applications Due:** October 26, 2020

[DETAILS & APPLICATION](https://mail.google.com/mail/u/0?ik=6a207ff2f9&view=pt&search=all)
Space is still available in MILI courses - register now!

**MILI 6421: Healthcare Law: Strategy and Business Implications (ATERM)**
Learn about the fundamental healthcare laws that apply to a wide variety of healthcare business and examine their impact on business strategy and operations.

**MILI 6562: Information Technology in Health Care (ATERM)**
Get a theoretical and conceptual base for managers, creators, and evaluators of health care information technology, including the application of current and evolving technology systems.

**MILI 6726: Medical Device Industry: Business and Public Policy (ATERM)**
Learn how multiple decision-makers and public-private sector interactions are critical for medical device development, market entry, and success.

**MILI 6963: Healthcare Market Analytics (BTERM)**
Ever wanted to know how to analyze large health care databases with a focus on advanced applications with health insurance claims data? This course is for you!

**MILI 6990: Healthcare Marketplace (BTERM)**
For students who want an understanding of the entire medical industry. Learn about physician and hospital services, insurance, pharmaceuticals, medical devices, information technology, and industry scale, interactions, opportunities, and barriers.

**MILI 6992: Healthcare Delivery Innovations: Optimizing Cost and Quality (BTERM)**
Understand the various sites of healthcare delivery, analyze how the components along the care continuum currently fit together to provide healthcare, and more importantly explore how they can be reconfigured and re-engineered in innovative ways to create value for the end consumer.

**MILI 6995: Medical Industry Valuation Lab (FULL SEMESTER)**
Hands on experience in succinctly evaluating the value of a new technology by considering market size and potential, intellectual property, and return on investment. Intercollegiate teams create rapid production market analysis of promising medical technologies and services to determine potential for success in the market.

**UNDERGRADUATE**

**New MILI Undergraduate Student Organization: MILIu**
MILIu is an undergraduate student group dedicated to connecting students to opportunities and professionals within the healthcare industry. Any undergraduate students at Carlson School of Management who are interested in exploring topics and careers in the healthcare industry are encouraged to get involved! Visit the MILIu website to learn more.
Business of Healthcare Minor
The Business of Healthcare minor was approved in February and is now open for all Carlson undergraduate students. This minor will provide an opportunity for students to gain additional skills that prepare them with a deeper knowledge of the medical industry. Students will be exposed to courses on healthcare marketplace, institutions, regulations, reimbursement, medical technology, and healthcare analytics. Students can apply for the minor through Carlson's Undergraduate Office.

Visit the Business of Healthcare minor website and watch the recorded information session to learn more.

FACULTY RESEARCH & NEWS

University of Minnesota Institute for Engineering in Medicine and academic collaborators receive $26M for NSF engineering research center
A major National Science Foundation grant awarded to the University of Minnesota includes a role for the Carlson School. The $26 million grant creates the Engineering Research Center (ERC) for Advanced Technologies for the Preservation of Biological Systems (ATP-Bio). The goal of the center, led by the U of M's Institute for Engineering in Medicine, is to develop and deploy breakthrough bioengineering technology to “stop biological time,” thus addressing fundamental supply chain issues in organ and tissue transplants, cell therapies, and more.

The Holmes Center will lead the grant’s Innovation Ecosystem pillar, which will help commercialize the inventions produced by ATP-Bio. The Carlson School will help researchers extend their thinking beyond their labs to potential markets by applying a strategic management perspective and the latest best practices for entrepreneurs. In addition, ATP-Bio will tap Carlson School graduate student resources, such as the Medical Industry Leadership Institute Valuation Lab, to assess the inventions’ business feasibility.

More information on this grant can be found here and here.

AFFILIATE NEWS
Welcome New Board Members
Please welcome Tanner Fuchs and Dylan McMahon to the Affiliate Board. Tanner and Dylan both graduated from Carlson’s MBA program last spring. Tanner is currently working at Medtronic and Dylan is at UnitedHealthcare.

Welcome to the Board!

The MILI Affiliates are going completely virtual this year!
While we may not be able to come together in person this coming year, we will still have plenty of opportunities to engage and network. Here are a few things to keep an eye out for.

MILI Mentorship Program begins in September
Our 5th year of the MILI Mentorship is going virtual with increased ideas on how to maximize benefit, how to connect with your match, topics to discuss, and webinars. Stay tuned for how to sign up to be a MILI Mentor.

Virtual Alumni Speaker Series
Starting this fall, join us each month for a virtual event focused on career development and how to navigate our “new normal”.

UPCOMING EVENTS

Please check the MILI calendar regularly for new events.

MN Cup Divisional Showcases
Tuesday, August 4th - Friday, August 14th
Starting tomorrow, MN Cup will showcase pitches from the 10 semifinalists in each division. Join us on Zoom to learn about the most promising startups in the state as they compete for $500,000 in non-dilutive cash prizes.
The ROI of Investing in Social Determinants of Health

Webinar: Tuesday, September 22, 4:00 pm

MILI Academic Director, Prof. Pinar Karaca-Mandic, will be joined by Founder & CEO of Carrot Health Inc, Kurt Waltenbaugh, to discuss existing data used to measure health, what data are still needed, Carrot Health’s partnership with the Colorado Hospital Association examining how ED super-utilization and readmission rates are affected by SDoH, and how business investments in the drivers of SDoH can lead to reduced healthcare costs.

REGISTER

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