

RESEARCH NEWSLETTER

Northwestern University Feinberg School of Medicine, Department of
Emergency Medicine

Summer 2020

An Introduction to our Research Assistant Interns

Our inaugural NUEM Research Assistant Internship began in May 2020. This year's interns have been working with Dr. Danielle McCarthy, Vice Chair of Research, to learn about the research field as a whole, data and study methods, and how we do things here at NUEM.

They have learned about mixed methods research through their work with Dr. McCarthy on a project examining the content of Emergency Physician influencer's tweets in the early stages of COVID. Additionally, they have been assisting with data entry on a national collaboration, examining organizational responses to COVID. While the original activities of the Summer Research Internship (including patient enrollment in the ED and shadow shifts) were not able to be fully realized due to university restrictions on having research interns on campus, the students have nonetheless been able to gain first-hand experience conducting research in emergency medicine.



Hi, I am Meghan McCabe. I am an undergraduate studying biomedical engineering on a pre-med track at Saint Louis University. I have always had a passion for research, science, and innovation. My science journey began at the Adler Planetarium in high school, and has led me to this internship at Northwestern Medicine in college. Aside from research I enjoy running and hiking outdoors. I look forward to continuing research with Northwestern and giving back to the medical community.



My name is Michael Scudder and I will be a junior at Vanderbilt University in the fall, but am originally from the suburbs of Chicago. I am a neuroscience major and am on the pre-med track with the hopes of going to medical school upon graduation. Over the last two years of summer experiences, Northwestern, specifically the Emergency Department, has helped me develop an interest in both clinical research and medicine in general. I will forever be thankful to the mentors and co-workers that have welcomed me with open arms and taught me so much about research and the medical field. In my free time, I am an avid sports fan and try to play golf and lacrosse as much as I can. I am a member of the Vanderbilt Club lacrosse team and enjoy playing golf with my father and brother.

Q&A with Megan McHugh, PhD



College of William and Mary, MPP
George Washington University, PhD

Dr. Megan McHugh is a health services researcher with an interest in federal policy making, employer-led health reform efforts, community health in manufacturing communities, and quality improvement. She received her PhD in Public Policy from George Washington University and has been on the faculty of Emergency Medicine at Northwestern for the past nine years.

In addition to conducting research in health policy, Dr. McHugh is also an educator and serves as the Director of the Master's in Health Services and Outcomes Research at Northwestern University. Her work has been supported by The Robert Wood Johnson Foundation, The Commonwealth Fund, Agency for Healthcare Research and Quality, National Cancer Institute, and others.

How did you first become interested in health policy?

In college I spent a semester in Washington, DC studying public policy and interning with a local news bureau. I was lucky enough to attend the White House daily briefings and was immediately hooked on politics and policy.

My first real job after completing a Master's in Public Policy was as a research analyst at Mathematica Policy Research. I was assigned to the health policy group and discovered that the health care system is fascinating and complex. There is no shortage of topics to research!

A number of your recent grants and publications have been focused on manufacturing communities. What has been your most interesting recent project in that arena and what were your findings?

We have an interesting, forthcoming publication on shift work, which is common in the manufacturing industry. We know that shift work is associated with higher risk of chronic health conditions, and as self-insured employers, large manufacturers bear the costs of those health conditions. Using data from two large U.S. manufacturers, we were able to calculate the additional health care costs incurred by the companies annually due to their shift work policies. The costs were substantial (over \$1 million per year) but likely not large enough to warrant daytime-only shifts.

Q&A Continued

Do you have any recommendations to practicing emergency physicians in thinking about the health of a patient within a manufacturing community?

On average, manufacturing communities have higher rates of poor health behaviors (e.g., smoking) and poor health outcomes (e.g., diabetes). Emergency physicians may have to spend time understanding the additional physical and mental health conditions that may be underlying the primary reason for the emergency department visit.

What healthcare policy changes would you like to see for the manufacturing industry?

Great question! The Trump Administration has been very supportive of the manufacturing industry in terms of deregulation. I would like to see the administration support the health of manufacturing workers by investing in community health in manufacturing communities.

What next steps do you have planned for continuing your line of research in manufacturing communities?

I'm very excited about a Covid-related study, which we will be finishing in the next few months. We have been tracking closures of large manufacturing plants in the U.S., and will be exploring whether local manufacturing plant closures affected the spread of Covid within their communities. The findings will be important for policy makers who were making decisions about closures with little evidence of impact.

Switching gears, you are the Principal Investigator on two training grants [The Northwestern University Health Policy Training grant and the Advanced Rehabilitation Research Training Program-Employment both from the National Institute on Disability, Independent Living, and Rehabilitation Research (NIDILRR)]. Please tell us a little bit about these programs and your role as the PI.

Together, these training grants support two years of post-doctoral training for 10 individuals. The goals of the training programs are to develop and train a cadre of researchers capable of leading high-quality studies that will 1) improve public policy for persons with disabilities, or 2) enhance employment opportunities for persons with disabilities. The trainees who focus on policy complete one year of research at Northwestern, then spend a year in Washington, DC working on Capitol Hill or in a federal agency. Currently we have fellows working in Rep. Donna Shalala's (D-FL) office and the House Committee on Education and Labor. The employment-focused training grant is a new award, and we are recruiting for our first trainees. My role is to provide mentorship to trainees throughout their time in the program.

Media Watch

PHYSICIAN'S WEEKLY

Howard Kim, MD, discusses strategies to prepare physicians to prescribe buprenorphine for opioid overdose.



James Adams, MD and CMO, describes Northwestern Medicine's response to Covid-19 for health care workers.



In a radio broadcast, Dr. James Adams discusses the up-tick of Covid-19 cases in Illinois.

COVID-19 Faculty Focus



Congratulations to Dr. Jennifer Chan who has been awarded an Institute for Global Health project grant. Her project, entitled "User Feedback Project - COVID-19 Social Mobility Network" was funded this summer and she has already started work to help the COVID-19 Mobility Network engage in user feedback for big data analyses that have been ongoing with researchers and policy makers around the world. The project is leveraging Facebook social movement and population data that is anonymized/aggregated and being used by departments of public health, ministries and response agencies in many cities in the US and around the world.



Congratulations to Dr. George Chiampas for continuing his national leadership on the topic of sports related concussion. Dr. Chiampas is currently funded in partnership with Seattle Children's Hospital on a U01 award from the National Center for Injury Prevention and Control. That project is focused on building an intervention (in partnership with the CDC, US Soccer and USA Football) to use pre-game safety huddles to shift the culture of youth sport and improve safety. In the same topic, but in work sponsored by FIFA, Dr. Chiampas co-authored a recent publication reviewing recommendations for initial examination, differential diagnosis, and management of concussion and other head injuries in high-level football. Available here: <https://doi.org/10.1111/sms.13750>

Resident COVID Research

In the past three months, we have made a major push to study and publish on research topics related to COVID and have a high level of resident involvement. The following are examples of resident-involved scholarly work and research projects related to COVID that are published, under review, or under preparation.

*First authors pictured left to right. Residents underlined.



Published

Cohen, Wessling, Serina, Cruz, Kim, McCarthy, Loftus. Emergency Department operations in a large health system during COVID-19. *Am J Emerg Med*. May 2020. PMID: 32505468

Farcas, Ko, Chan, Malik, Nono, Chiampas. Use of Incident Command System for Disaster Preparedness: A Model for an Emergency Department COVID-19 Response. *Disaster Medicine and Public Health Preparedness*. June 2020: 1-6. PMID: 32576330

Kim, Cruz, Conrardy, Gandhi, Seltzer, Loftus, Fant, McCarthy. Emergency Department Visits for Serious Diagnoses During the COVID-19 Pandemic. (in press at Academic Emergency Medicine)

Under review

Wessling, Neill, Gandhi, Randolph, Conrardy, Chodakowski, Malik, Loftus. Rapid Emergency Department Physical Space Modifications for COVID-19: Keeping Patients and Healthcare Workers Safe (under review at Disaster Medicine and Public Health Preparedness)

Eswaran, Akhetuamhen, Karalius, Rogers, Quarles, Cruz, Dresden, Chan, McCarthy, Kim. Emergency Department Use During Early Coronavirus Pandemic: Demographic Characteristics Over Time. (under review at Western Journal of Emergency Medicine)

Leibowitz, Scudder, McCabe, Chan, Klein, Trueger, McCarthy. Emergency Medicine Social Media Influencers use of Twitter during the early stages of COVID-19: A mixed methods analysis. (under review at Western Journal of Emergency Medicine)

There are numerous other projects in preparation, including an evaluation of the patient experience in the ED during COVID, a national study of ED visitor policies, and a global contagion surveillance evaluation funded by USAID.

New Grants Awarded in the Past 6 Months



American Medical Association Reimagining Residency Grant

Northwestern EM is part of a collaboration lead by Stanford University which will receive funding from the American Medical Association over the next 5 years to design and test EPAs for residents to hopefully allow for better competency based assessments and promotions. The grant, entitled "A Unified System of Assessment and Predictive Learning Analytics Utilizing Entrustable Professional Activities Across Emergency Medicine Residency Programs," will be lead locally by Dr. Abra Fant and is slated to start this academic year.

ED-INNOVATION Grant

Northwestern Emergency Medicine has been chosen as one of the 30 emergency department sites across the U.S. to participate in a study awarded through the National Institutes of Health (NIH) Helping to End Addiction Long-term Initiative (HEAL). This national effort provides \$945 million in total funding to support a variety of research projects that tackle the opioid addiction and overdose crisis. The NIDA Clinical Trials Network's New England Consortium Node with investigators at Yale University is leading this study.



The Emergency Department-Initiated Buprenorphine Validation Network Trial (ED-INNOVATION) will test an implementation strategy to guide the development of ED-initiated treatment of opioid use disorder with buprenorphine. Sites that successfully implement ED-initiated buprenorphine, will compare the effectiveness of two formulations of buprenorphine, sublingual versus an extended release 7-day injectable formulation in engaging ED patients with untreated opioid use disorder in medication treatment at 7 days. Dr. Howard Kim will serve as the site PI along with other investigators Drs. Lank and McCarthy and Daniel Cruz.



ICECAP Trial

Through our ongoing participation in the SIREN Network (NIH Strategies to Innovate EmergENCy Care Clinical Trials Network (SIREN)) Northwestern will be one of over 60 sites enrolling patients in the Influence of Cooling duration on Efficacy in Cardiac Arrest Patients (ICECAP) study. The study will be lead locally by Dr. Peter Pruitt and Dr. Thomas Bleck (neurocritical care) and will seek to enroll comatose adult survivors of out-of-hospital cardiac arrest that have already been rapidly cooled using a definitive temperature control method. Those with and without initial shockable rhythms will be studied as distinct populations (maximum of 1800 subjects nationwide over four years). ICECAP will determine if identifying an optimal duration of cooling can improve outcomes, and if development of a duration response curve can substantiate efficacy in a wider patient population.

New Grants Awarded in the Past 6 Months Continued



Emergency Medicine Palliative Care Access (EMPallA)

Scott Dresden from Emergency Medicine and Melanie Smith from Palliative Care are the site leaders for the research study funded by Patient-Centered Outcomes Research Institute (PCORI) for a pragmatic, randomized controlled trial titled "Emergency Medicine Palliative Care Access (EMPallA)". This multi-site comparative effectiveness trial will measure the effects of nurse-led telephonic palliative care versus facilitated outpatient palliative care. Patients age >50 with advanced cancer or organ failure (e.g., congestive heart failure, End Stage Renal Disease or oxygen dependent COPD) will be randomly assigned to received either nurse-led telephonic palliative care or facilitated outpatient palliative care in clinic. Outcomes evaluated include quality of life, healthcare utilization, loneliness and symptom burden. Caregivers will also be enrolled and assessed on caregiver strain, quality of life, and bereavement.



Communicating to turn data into action --Connecting IVDRS and SUDORS data to communities

The Buehler Center for Health Policy and Economics has received a generous grant from an anonymous donor. The grant supports the Illinois Violent Death Reporting System (IVDRS) and the Statewide Unintentional Drug Overdose Death Reporting System (SUDORS) which are public health surveillance systems tracking violent death and drug overdose in Illinois. The grant provides capacity for data sharing and communicating to local communities regarding data in their locations to inform prevention and intervention strategies. Funds allow for hiring two part time Community Outreach Coordinators --one working in Chicago and Northern Illinois, the other in Central and Southern Illinois, a Communications Specialist who helps to package and disseminate data to users including a website and social media and a part time epidemiologist who assists with data pulls and analysis. Maryann Mason, PhD, serves as PI for the project and works collaboratively with researchers who are interested in using the data for prevention. Follow us on Facebook at <https://www.facebook.com/IVDRS/> and <https://www.facebook.com/SUDORS/>. Also, on Twitter at <https://twitter.com/IllinoisVDRS> and <https://twitter.com/SUDORS10>.