

RESEARCH NEWSLETTER

Northwestern University Feinberg School of Medicine
Department of Emergency Medicine

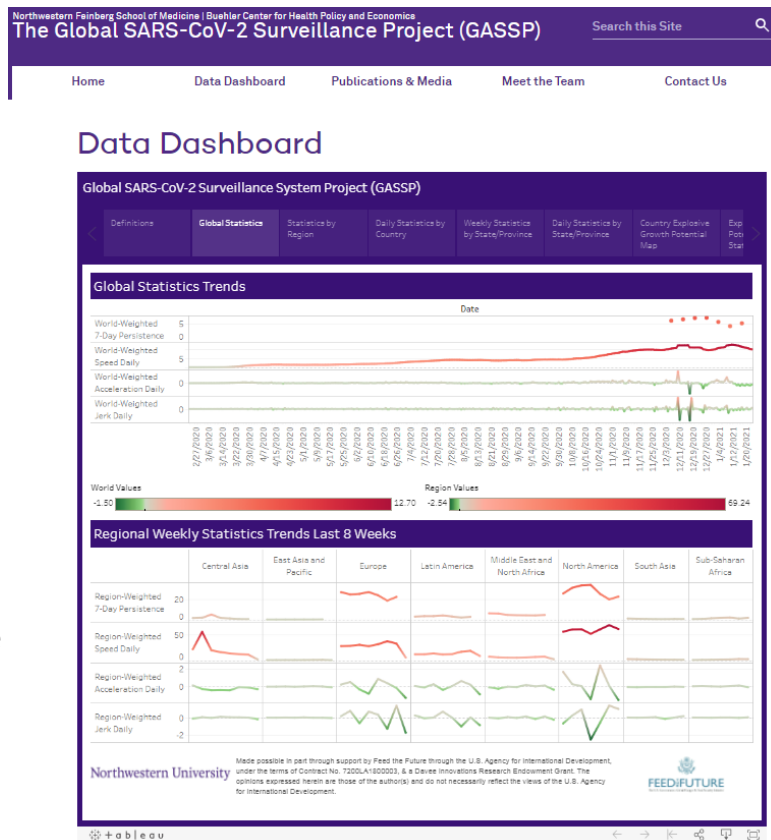
Winter 2021

Faculty Focus



Congratulations to Dr. Lori Post, PhD, and her team for their work creating the Global SARS-COV-2 Surveillance Project (GASSP). This new COVID-19 dashboard seeks to synthesize data about COVID-19 in a way that makes the data accessible and useful for monitoring real-time week to week changes. The GASSP team created and validated novel surveillance metrics including: (1) speed, (2) acceleration, (3) jerk (change in acceleration), (4) 7-Day Lag, and (5) 7-Day Persistence effects that serve as early signals of change. The data are available for all global regions and the project was funded by Feed the Future through the U.S. Agency for International Development and a Davee Innovations Research Endowment Grant.

The GASSP database has already resulted extensive media coverage and in five publications for Dr. Post and team, a team that includes Drs. Cameron Jones (PGY-2) and Sean Watts (PGY-3).



Link to dashboard here:
<https://sites.northwestern.edu/covidglobalsurveillance/>

Q&A with Amy Zosel, MD, MS, NUEM Alum



Dr. Amy Zosel received her medical degree at the Medical College of Wisconsin before joining the Northwestern University Emergency Medicine Residency training program in 2003. After completing residency training in 2007, Dr. Zosel went on to complete a Medical Toxicology Fellowship at the Rocky Mountain Poison Center, and she concurrently completed a Masters of Clinical Science at the University of Colorado in Denver.

She joined the faculty at Medical College of Wisconsin in 2010 where she currently serves as the Vice Chair of Research. She is also the Wisconsin Poison Center Research Director and the Emergency Department Mentoring Champion. Her research interests include toxicology epidemiology, the abuse, misuse and diversion of prescription medications as well as physician use and impact of state-wide prescription drug monitoring programs.

How did you first become interested in emergency medicine research?

It's all about mentorship. I participated in the Medical College of Wisconsin Summer Research Program between my 1st and 2nd years in Medical school. Due to the amazing dedication of faculty, most notably my summer mentor, Dr. Mary Beth Phelan, I was able to present at the Wisconsin Emergency Medicine Research Forum where I was awarded Best Presentation. This exhilarating experience lit the fire in my belly to continue to ask, then answer, the questions that come up frequently in our clinical practice. Research is formalized curiosity but the logistics must be learned and taught to others. Early on in my training, I realized that research is a way to create a legacy and help others by making a long-term impact on the future of medicine.

How did your residency and fellowship experiences contribute to your decision to pursue a research career after training?

Experiences that inspired me to pursue an academic career involving research revolved around excellent mentorship. I was fortunate to receive research tutelage in residency by several amazing NUEM faculty members. Dr. Mark Mycyk guided me in all the steps of scholarship creation and dissemination around a project entitled "Zolpidem misuse with other medications or alcohol frequently results in intensive care unit admission." I am also forever grateful to Dr. Mike Gisondi, my associate residency director, who suggested that I pursue a research elective during my 4th year of residency, which was unprecedented at the time. I was able to purpose that valuable time for finishing the zolpidem manuscript and also used the valuable time to apply for the NIH Loan Repayment Grant. All in all, none of this happens in a vacuum and I appreciate the support and guidance during residency at Northwestern that laid the foundation for further opportunities.

I had further opportunity to gain tools for my research tool belt during fellowship. Dr Kennon Heard, my fellowship director, taught me several practical tools. Not only did he teach me how to write a good case report through examples and practice but he taught me to keep trying. These are two very important skills! He instilled the idea that you must keep falling forward and eventually you will make progress. You will never write a paper unless you write the first sentence.

Q&A Continued

As faculty at Medical College of Wisconsin, you have been very successful with publications. Please tell us about one of your favorite recent projects or publications.

This is a very tough question as each project and publication brings opportunities for growth. That being said, I am energized by collaboration and seeing others succeed. An example comes to mind of an Intern asking me for guidance because we couldn't find any literature on lacosamide overdoses to help him take care of a patient in the pediatric ICU. That was because there was little to no literature around the toxicity of the relatively new drug. I suggested he become the world's expert and do a review using the National Poison Data System. He energetically pursued the answer to his question, presented his results at Wisconsin Emergency Medicine Research Forum and the North American Congress on Clinical Toxicology and published a manuscript. He asked a great question, made a permanent contribution to our pool of knowledge, gained new skills and now understands what it takes to perform such a study. As his mentor and sponsor, I can say it gave me an incredible amount of joy. There is no greater honor for a mentor than to see a mentee succeed.

You have also been successful mentoring trainees (both medical student and resident) in research and have been honored on several occasions and both an outstanding clinical teacher and an outstanding resident research advisor. What advice do you have to share for either residents seeking research mentorship or for faculty providing mentorship?

Good communication is key. Expectation setting from the start sets mentorship-mentee pairs for success. In addition, I would encourage any pair to collaborate on a mutually shared passion. The best projects are those that both individuals are passionate about.

You have recently taken on the role of Vice Chair of Research at MCW. How has emergency department research at MCW been impacted by the pandemic?

Emergency medicine people are especially nimble when it comes to creative problem-solving. We have certainly learned to better leverage technology for the purposes of education and administration. In addition, our MCW community has come together in new ways. For example, when basic scientists had to temporarily hibernate their labs, many donated their PPE to front line workers. This was a touching example of care for others. I found this extremely heartwarming and a testament to being part of the altruism of our researchers. New team science research workgroups have emerged as well. It is great to see new partnerships form with the goal of fighting the COVID-19 pandemic.

Media Watch

Chicago Tribune

Lori Post, PhD, discusses the data dashboard she helped create, aimed at tracking COVID-19 outbreaks to stop potential surges.



Dr. Post discusses different populations' risks, related to phases of vaccination distribution.



Maryann Mason, PhD, wrote an opinion piece about gun violence risk and how to decrease it.



Dr. James Adams, Department Chair and CMO of NMH discusses the rollout of the COVID-19 vaccine in Chicago.

Resident Spotlight



Congratulations Dr. Adesuwa Akhetuamhen for accepting a research fellowship position at the National Clinical Scholars Program at UCSF for the 2021 cohort. The National Clinical Scholars Program (NCSP) grew out of the Robert Wood Johnson Foundation Clinical Scholars program and teaches rigorous research design while also emphasizing outcomes and the impact of policy-relevant research. Dr. Akhetuamhen will be the second NUEM grad to join the NCSP at UCSF in just two years, following Dr. Vidya Eswaran ('20) into the program.



Below, Dr. Maren Leibowitz describes her recent work on a manuscript currently in press at The Western Journal of Emergency Medicine entitled "Emergency Medicine Social Media Influencers use of Twitter during the early stages of the COVID-19 pandemic: A mixed methods analysis." Maren is the first author on this forthcoming publication and collaborated on the project with our NUEM research summer students from last year (Michael Scudder & Meghan McCabe) and faculty including Drs. Chan, Klein, McCarthy and Trueger.

Our study was a mixed-methods analysis of Tweets posted by the influential emergency medicine Twitter users during the early months of the COVID pandemic in the United States. Our analysis showed that influential EM Twitter users in the US were delivering messages most often pertaining to news stories or information directly relating to patient care. We felt that our results highlighted how EM influencers can leverage social media in public health emergencies.

Most of my previous research was either bench work or quantitative data analysis, so this was my first project involving qualitative research. It was a great opportunity to learn new research methods and I have learned how valuable qualitative data can be. Plus it was a fun project for me to get back into research!

Resident Publications

Check out some of the recently published articles including NUEM residents as authors.

1. **Serina P, Lo AX**, Kocherginsky M, Gray E, Lindquist LA, **Post LA**, Heinemann AW, **Cruz D, Dresden SM**. The Clinical Frailty Scale and Health Services Use for Older Adults in the Emergency Department. *J Am Geriatr Soc*. 2020 Nov 17. doi: 10.1111/jgs.16937. Epub ahead of print. PMID: 33205408.
2. **Eswaran V**, Allen KC, **Cruz DS, Lank PM, McCarthy DM, Kim HS**. Development of a take-home naloxone program at an urban academic emergency department. *J Am Pharm Assoc (2003)*. 2020 Nov-Dec;60(6):e324-e331. doi: 10.1016/j.japh.2020.06.017. Epub 2020 Jul 18. PMID: 32690447.
3. **Cohen BA, Wessling EG, Serina PT, Cruz DS, Kim HS, McCarthy DM, Loftus TM**. Emergency department operations in a large health system during COVID-19. *Am J Emerg Med*. 2020 Jun 2:S0735-6757(20)30462-9. doi: 10.1016/j.ajem.2020.05.097. Epub ahead of print. PMID: 32505468; PMCID: PMC7264938.
4. **Eswaran V**, Allen KC, Bottari DC, Splawski JA, Bains S, Aks SE, Swoboda HD, Moore PQ, Tran TH, Salisbury-Afshar E, **Lank PM, McCarthy DM, Kim HS**. Take-Home Naloxone Program Implementation: Lessons Learned From Seven Chicago-Area Hospitals. *Ann Emerg Med*. 2020 Sep;76(3):318-327. doi: 10.1016/j.annemergmed.2020.02.013. Epub 2020 Mar 30. PMID: 32241746.
5. **Kim HS, Cruz DS, Conrardy MJ, Gandhi KR, Seltzer JA, Loftus TM, Fant AL, McCarthy DM**. Emergency Department Visits for Serious Diagnoses During the COVID-19 Pandemic. *Acad Emerg Med*. 2020 Sep;27(9):910-913. doi: 10.1111/acem.14099. Epub 2020 Aug 17. PMID: 32737912; PMCID: PMC7436489.
6. **Colton K**, Richards CT, **Pruitt PB**, Mendelson SJ, Holl JL, Naidech AM, Prabhakaran S, Maas MB. Early Stroke Recognition and Time-based Emergency Care Performance Metrics for Intracerebral Hemorrhage. *J Stroke Cerebrovasc Dis*. 2020 Feb;29(2):104552. doi: 10.1016/j.jstrokecerebrovasdis.2019.104552. Epub 2019 Dec 12. PMID: 31839545; PMCID: PMC6954314.
7. **Post LA**, Argaw ST, **Jones C**, Moss CB, Resnick D, Singh LN, Murphy RL, Achenbach CJ, White J, Issa TZ, Boctor MJ, Oehmke JF. A SARS-CoV-2 Surveillance System in Sub-Saharan Africa: Modeling Study for Persistence and Transmission to Inform Policy. *J Med Internet Res*. 2020 Nov 19;22(11):e24248. doi: 10.2196/24248. PMID: 33211026; PMCID: PMC7683024.

Faculty Publications Update

Published end of May 2020 - January 2021

1. Carpenter CR, Hammouda N, Linton EA, Doering M, Ohuabunwa UK, Ko KJ, Hung WW, Shah MN, Lindquist LA, Biese K, Wei D, Hoy L, Nerbonne L, Hwang U, **Dresden SM**; GEAR Network. Delirium Prevention, Detection, and Treatment in Emergency Medicine Settings: A Geriatric Emergency Care Applied Research (GEAR) Network Scoping Review and Consensus Statement. *Acad Emerg Med*. 2020 Nov 1. doi: 10.1111/acem.14166. Epub ahead of print. PMID: 33135274.
2. **Dresden SM, Lo AX**, Lindquist LA, Kocherginsky M, **Post LA**, French DD, Gray E, Heinemann AW. The impact of Geriatric Emergency Department Innovations (GEDI) on health services use, health related quality of life, and costs: Protocol for a randomized controlled trial. *Contemp Clin Trials*. 2020 Oct;97:106125. doi: 10.1016/j.cct.2020.106125. Epub 2020 Aug 26. PMID: 32858227.
3. **Kenny JF, Hemmert KC, Lo AX**. Implementing geriatric emergency departments across a large hospital system: operational considerations and the evidence gap. *J Am Coll Emerg Physicians Open*. 2020 Oct 31;1(6):1288-1290. doi: 10.1002/emp2.12304. PMID: 33392534; PMCID: PMC7771763.
4. **Lo AX**. Challenging the "Scoop and Run" Model for Management of Out-of-Hospital Cardiac Arrest. *JAMA*. 2020 Sep 15;324(11):1043-1044. doi: 10.1001/jama.2020.9245. PMID: 32930742.

5. Lesser A, Israni J, **Lo AX**, Ko KJ. Older adult visits to the emergency department for ambulatory care sensitive conditions. *J Am Coll Emerg Physicians Open*. 2020 Jun 30;1(5):824-828. doi: 10.1002/emp2.12164. PMID: 33145526; PMCID: PMC7593478.
6. Kennedy M, Koehl J, Shenvi CL, Greenberg A, Zurek O, LaMantia M, **Lo AX**. The agitated older adult in the emergency department: a narrative review of common causes and management strategies. *J Am Coll Emerg Physicians Open*. 2020 Jun 11;1(5):812-823. doi: 10.1002/emp2.12110. PMID: 33145525; PMCID: PMC7593470.
7. **Lo AX**, Carpenter CR. Balancing Evidence and Economics While Adapting Emergency Medicine to the 21st Century's Geriatric Demographic Imperative. *Acad Emerg Med*. 2020 Oct;27(10):1070-1073. doi: 10.1111/acem.13997. Epub 2020 Jun 5. PMID: 32335974.
8. **Kim HS**, Ciolino JD, Lancki N, Strickland KJ, Pinto D, Stankiewicz C, Courtney DM, Lambert BL, **McCarthy DM**. A Prospective Observational Study of Emergency Department-Initiated Physical Therapy for Acute Low Back Pain. *Phys Ther*. 2020 Dec 22:pzaa219. doi: 10.1093/ptj/pzaa219. Epub ahead of print. PMID: 33351942.
9. Diaz Baez Y, **Chodakowski JD**, Mycyk MB, **Kontrick AV**. Resident physician perception on how food choice affects wellness and professional development. *Am J Emerg Med*. 2020 Dec 8:S0735-6757(20)31124-4. doi: 10.1016/j.ajem.2020.12.007. Epub ahead of print. PMID: 33341324.
10. Pormohammad A, Ghorbani S, Baradaran B, Khatami A, J Turner R, Mansournia MA, **Kyriacou DN**, Idrovo JP, Bahr NC. Clinical characteristics, laboratory findings, radiographic signs and outcomes of 61,742 patients with confirmed COVID-19 infection: A systematic review and meta-analysis. *Microb Pathog*. 2020 Oct;147:104390. doi: 10.1016/j.micpath.2020.104390. Epub 2020 Jul 15. PMID: 32681968; PMCID: PMC7361116.
11. Prabhakaran S, **Richards CT**, Kwon S, Wymore E, Song S, Eisenstein A, Brown J, Kandula NR, **Mason M**, Beckstrom H, Washington KV, Aggarwal NT. A Community-Engaged Stroke Preparedness Intervention in Chicago. *J Am Heart Assoc*. 2020 Sep 15;9(18):e016344. doi: 10.1161/JAHA.120.016344. Epub 2020 Sep 6. PMID: 32893720; PMCID: PMC7726971.
12. Chadha S, McLone S, **Mason M**, Sheehan K. Adolescent Firearm Homicides in Chicago, 2013-2017. *J Adolesc Health*. 2020 Sep;67(3):438-443. doi: 10.1016/j.jadohealth.2020.02.025. Epub 2020 Apr 12. PMID: 32295721.
13. Fishbein AB, Hamideh N, Lor J, Zhao S, Kruse L, **Mason M**, Ariza A, Bolanos L, Necheles J, Kaye B. Management of Atopic Dermatitis in Children Younger Than Two Years of Age by Community Pediatricians: A Survey and Chart Review. *J Pediatr*. 2020 Jun;221:138-144.e3. doi: 10.1016/j.jpeds.2020.02.015. Epub 2020 Mar 11. PMID: 32171558; PMCID: PMC7480084.
14. Xiao N, Cooper JG, Godbe JM, Bechel MA, Scott MB, Nguyen E, **McCarthy DM**, Abboud S, Allen BD, Parekh ND. Chest radiograph at admission predicts early intubation among inpatient COVID-19 patients. *Eur Radiol*. 2020 Oct 13:1-8. doi: 10.1007/s00330-020-07354-y. Epub ahead of print. PMID: 33051736; PMCID: PMC7553374.
15. **Lu DW**, Pierce A, Jauregui J, Heron S, Lall MD, Mitzman J, **McCarthy DM**, **Hartman ND**, Strout TD. Academic Emergency Medicine Faculty Experiences with Racial and Sexual Orientation Discrimination. *West J Emerg Med*. 2020 Aug 21;21(5):1160-1169. doi: 10.5811/westjem.2020.6.47123. PMID: 32970570; PMCID: PMC7514380.
16. Rising KL, Powell RE, Cameron KA, **Salzman DH**, Papanagnou D, Doty AMB, Latimer L, **Piserchia K**, McGaghie WC, **McCarthy DM**. Development of the Uncertainty Communication Checklist: A Patient-

- Centered Approach to Patient Discharge From the Emergency Department. *Acad Med*. 2020 Jul;95(7):1026-1034. doi: 10.1097/ACM.0000000000003231. PMID: 32101919; PMCID: PMC7302334.
17. Xiao N, Abboud S, **McCarthy DM**, Parekh N. Incidentally discovered COVID-19 in low-suspicion patients-a threat to front line health care workers. *Emerg Radiol*. 2020 Dec;27(6):589-595. doi: 10.1007/s10140-020-01792-3. Epub 2020 May 25. PMID: 32449100; PMCID: PMC7246084.
 18. **McHugh M**, French DD, Kwasny MM, Maechling CR, Holl JL. The Impact of Shift Work and Long Work Hours on Employers' Health Care Costs. *J Occup Environ Med*. 2020 Dec;62(12):1006-1010. doi: 10.1097/JOM.0000000000001994. PMID: 32796261; PMCID: PMC7720877.
 19. **McHugh M**, Brown T, Walunas TL, Liss DT, Persell SD. Contrasting Perspectives of Practice Leaders and Practice Facilitators May Be Common in Quality Improvement Initiatives. *J Healthc Qual*. 2020 May/Jun;42(3):e32-e38. doi: 10.1097/JHQ.0000000000000223. PMID: 31634207.
 20. **Post L**, Marogi E, Moss CB, Murphy RL, Ison MG, Achenbach CJ, Resnick D, Singh L, White J, Boctor MJ, **Welch SB**, Oehmke JF. SARS-CoV-2 Surveillance in the Middle East and North Africa: Longitudinal Trend Analysis. *J Med Internet Res*. 2021 Jan 15;23(1):e25830. doi: 10.2196/25830. PMID: 33302252.
 21. **Post LA**, Issa TZ, Boctor MJ, Moss CB, Murphy RL, Ison MG, Achenbach CJ, Resnick D, Singh LN, White J, Faber JMM, Culler K, Brandt CA, Oehmke JF. Dynamic Public Health Surveillance to Track and Mitigate the US COVID-19 Epidemic: Longitudinal Trend Analysis Study. *J Med Internet Res*. 2020 Dec 3;22(12):e24286. doi: 10.2196/24286. PMID: 33216726; PMCID: PMC7717896.
 22. Oehmke JF, Moss CB, Singh LN, Oehmke TB, **Post LA**. Dynamic Panel Surveillance of COVID-19 Transmission in the United States to Inform Health Policy: Observational Statistical Study. *J Med Internet Res*. 2020 Oct 5;22(10):e21955. doi: 10.2196/21955. PMID: 32924962; PMCID: PMC7546733.
 23. Oehmke JF, Oehmke TB, Singh LN, **Post LA**. Dynamic Panel Estimate-Based Health Surveillance of SARS-CoV-2 Infection Rates to Inform Public Health Policy: Model Development and Validation. *J Med Internet Res*. 2020 Sep 22;22(9):e20924. doi: 10.2196/20924. PMID: 32915762; PMCID: PMC7511227.
 24. Johnson JT, Scholtens DM, Kuang A, Feng XY, Eltayeb OM, **Post LA**, Marino BS. Does value vary by center surgical volume for neonates with truncus arteriosus? A multicenter study. *Ann Thorac Surg*. 2020 Aug 5:S0003-4975(20)31290-X. doi: 10.1016/j.athoracsur.2020.05.178. Epub ahead of print. PMID: 32768429.
 25. Wang K, Grossetta Nardini H, **Post L**, Edwards T, Nunez-Smith M, Brandt C. Information Loss in Harmonizing Granular Race and Ethnicity Data: Descriptive Study of Standards. *J Med Internet Res*. 2020 Jul 20;22(7):e14591. doi: 10.2196/14591. PMID: 32706693; PMCID: PMC7399950.
 26. **Pruitt P**, Naidech A, Prabhakaran S, Holl JL, Courtney DM, Borczuk P. External Validation of a Tool to Predict Neurosurgery in Patients with Isolated Subdural Hematoma. *World Neurosurg*. 2020 Dec 10:S1878-8750(20)32562-6. doi: 10.1016/j.wneu.2020.11.170. Epub ahead of print. PMID: 33309641.