

FALL 2022

# RESEARCH NEWSLETTER

*Northwestern University Feinberg School of Medicine*



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## DEPARTMENT OF EMERGENCY MEDICINE

The Department of Emergency Medicine at Northwestern University Feinberg School of Medicine publishes this quarterly research newsletter to highlight department newcomers, Q & A sections from current faculty and alumni, faculty and residency research spotlights, publications updates, and many more features.

# RESEARCH RETREAT

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Pictured from left to right: Alex Lundberg PhD, Peter Pruitt MD, Alexander Lo MD PhD, Maryann Mason PhD, Scott Dresden MD, Howard Kim MD, Danielle McCarthy MD, Lori Post PhD, Lindsay Allen PhD, Demetrios Kyriacou MD PhD, Jennifer Chan MD, Megan McHugh PhD, James Adams MD, Regina Royan, MD

This past September we had a **Faculty Research Retreat** at the EMC2 Hotel. This was the first time the entire research faculty has been together in-person since the pandemic. During the retreat, we not only had great conversations but also discussed many important topics such as publication productivity, grant funding, and future proposals. Thank you all for taking time out of your busy schedules to attend. We look forward to more successful retreats with the faculty!

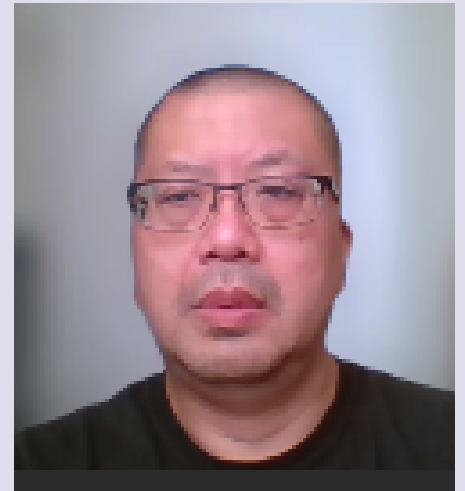




## Q & A WITH DR. ALEXANDER S LO

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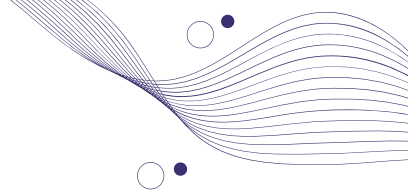
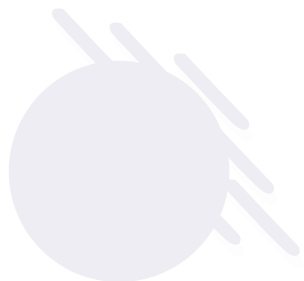
ALEX LO IS THE DIRECTOR OF RESIDENT RESEARCH AND OF THE PHYSICIAN SCIENTIST TRAINING PROGRAM (PSTP) IN THE DEPARTMENT OF EMERGENCY MEDICINE AT NORTHWESTERN UNIVERSITY. HIS CLINICAL AND ACADEMIC FOCUS INCLUDES GERIATRIC EMERGENCY MEDICINE, GERIATRIC MOBILITY, AND HEALTH DISPARITIES. HE IS A MEMBER OF THE SOCIETY FOR ACADEMIC EMERGENCY MEDICINE, A FELLOW OF THE AMERICAN COLLEGE OF EMERGENCY PHYSICIANS, AND AN EDITOR WITH THE JOURNAL OF THE AMERICAN COLLEGE OF EMERGENCY PHYSICIANS (JACEP).



**Alexander S Lo, MD, PhD**  
Associate Professor

**Congratulations on your newly funded GEARS award! Before talking about the award itself, can you tell us about your path to research? When did you first become interested in being a researcher as part of your career?**

Thanks for having me on this segment. I do not consider being a researcher as a separate role within my job as an emergency physician. We are constantly exposed to different situations involving patients and patient care that reveal opportunities for improvement, whether it involves the diagnosis or management of disease, or health care access and delivery. Every time an EP asks questions and figures out ways to improve things, that – fundamentally speaking – is research. So, I see being a researcher as an intrinsic and non-distinct part of my job and it's an important complement to the clinical work. It's nice to be at a place like Northwestern, where I feel there is strong support for both my research and clinical activities.



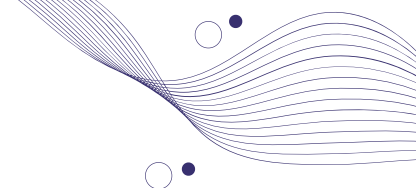
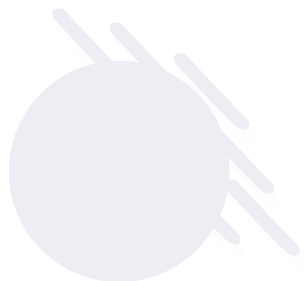
## Q & A CONTINUED...

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How did you ultimately land upon your current areas of research focus (geriatric emergency medicine)?

In medical school and residency, and hearing about the experiences of friends, neighbors, and family, it became abundantly clear that traditional EM is ill-equipped to take care of older persons. There is a lot of bad science promoting suboptimal care of older adults. For example, there were numerous ED studies saying that older patients are at higher risk of dying and so we should aggressively treat them and hospitalize them every time they come to the ED. Guess what? Older people are more likely than younger people to die – that's not rocket science, it's NATURE. Nobody escapes death, not even triathletes, yoga enthusiasts or people who eat healthy diets. This perceived increased risk of death among older persons has been misused as a reason to hospitalize them unnecessarily and intervene upon them over-aggressively. The evidence clearly shows that unnecessary hospitalization and interventions harm them much more than they help. People learn as they get older that they aren't afraid to die, but they are afraid of losing autonomy over their lives. They want to preserve their quality of life. The more you talk to older patients in the ED the more you learn that they just want answers, they want to be given a fair choice in the care they receive, they want to plan for their remaining days and live as independently as possible. Our job is to help them achieve that, and we should give them a choice in deciding what care they want. At the same time, there is also an increasing number of vulnerable older persons, those with cognitive or functional impairment, those at risk for neglect, abuse or failure to thrive. We need better science to determine more accurately what our patient wants or needs, and how best we can serve them. That is a mission I wanted to be a part of, in order to help fix the currently broken system.

Improving the way with which we care for older persons should be a priority for all emergency physicians. Not only are they the fastest growing segment of our patient population, but we often mistakenly lump them into this homogenous group and blindly apply a one-size-fits-all approach to their care. We should remind ourselves that they are who we will all be one day. We will all get old, break a bone, lose our teeth, and urinate on ourselves incessantly. The statistics prove that we will all become ED patients on average at least once every 3 years after age 65 until we die. Even the most self-centered and apathetic physician should realize that improving care for older ED patients is really about self-preservation.



## Q & A CONTINUED...

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Tell us about the grant that you and Dr. McHugh received.

In fairness, this is really a sub award that stems from **Scott Dresden's** grant (he's a collaborating investigator on this grant) and he deserves credit for being part of a group of experts designing a big grant to spur many smaller projects around the country to build up research in Geriatric EM with a focus on dementia. So, kudos to him for that.

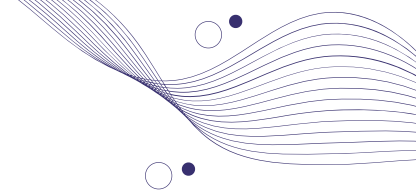
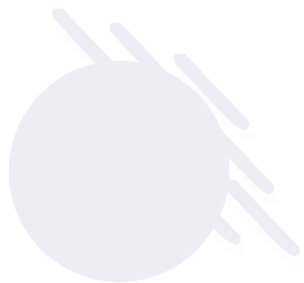
**Megan McHugh** (for residents who don't know Megan, she is a PhD health services researcher with expertise in qualitative research in NUEM) and I are both Principal Investigators on this project and grateful to get one of those smaller pilot grants. Our focus is on ED patients with diagnosed or suspected dementia. Up to 60%(!) of persons with dementia in the U.S. are NOT diagnosed, and often navigate their lives and health care lacking the knowledge, resources and help they need.

We wanted to try and capture their experience and challenges, so we hope to interview these patients (particularly those with early cognitive impairment who still live independently) or the caregivers of those with advance disease, to see how we can help them, not only with improving the ED care, but with their care needs beyond the ED, e.g., finding access to primary care or community-based resources. We need to identify the unmet needs before we can even begin to find solutions. We hope to identify these folks by asking patients (or their caregivers) if they have been diagnosed with dementia or have noticed problems with memory. So, if you spot an older patient who seems forgetful or confused, or if you or the caregiver has concerns about dementia in a patient, those are precisely the people we hope to help.

In addition to leading your own research projects, you serve as a collaborator on projects and as the director of resident research. Please tell us a bit about those roles.

I'm a collaborator on Dresden's GEDI project and that's a huge landmark project in EM for being the first randomized clinical trial to see if what impacts our GEDI program can make. It's an exciting project and it's been fun working on this team.

I love my job as PSTP director and DRR: EM residents have traditionally viewed "Research" as this painful chore of statistics and nebulous technical methods, and that is mostly the fault of EM trying to teach residents about esoteric analytical concepts like likelihood ratios, p-values or case-control studies. Research in its purest form is this: Find a problem in your everyday job that is faulty, inefficient, or harmful. Hopefully, it will inspire you to want to fix it and become an agent of change. Find a solution that can help your patients or your community. IMO that's really the point of research.



## Q & A CONTINUED...

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Many of our residents are asking research questions without even realizing it. Two residents went to a festival for BBQ and beer, and observed a screening process and asked, "hey what if we applied this to other mass gathering scenarios?" One resident noticed how often he ordered IV narcotics for an old man with hip fracture and asked how easy it'd be to implement a femoral nerve block program. One resident noticed the increased integration of digital health in hospital systems and wanted to elevate the role of the ED in coordinating that process. Three residents were alarmed by the frequency they had to deal with boarding patients and decided to work on a self-sustaining protocol to care for those patients. Other residents wanted to explore improved web-based educational modalities for EM residents or ways to teach US-guided procedures. All these questions are, effectively, research. My job is to support, help and guide these residents in their endeavors to accomplish two things: First, how to pursue these projects in a scientifically robust way so that others outside NU can understand and adopt their findings, and second, to help them create products for their CV to boost their marketability after residency.



## RESIDENT SPOTLIGHT

### CONGRATS!

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Peer-reviewed medical journal, *Annals of Emergency Medicine*, has published recent graduate Dr. **Gabrielle Bunney**'s article, [Using Machine Learning to Predict Hospital Disposition With Geriatric Emergency Department Innovation Intervention.](#) She worked with a team of research scientists through the AI4Health program at NU. They ran multiple machine learning algorithms to identify the factors which are most predictive of patients having a change in disposition after a GEDI consult. They also modeled who would have benefitted from a GEDI consult out of the pool of patients who didn't receive them. Though most patients would have no change in disposition, almost 3% of patients could have had an admission prevented if they saw GEDI.

Congratulations Gabrielle and team!



Gabrielle Bunney, MD





# PUBLICATIONS SPOTLIGHT

EM faculty, residents, alumni, staff in bold

Bailitz J, O'Brien J, McCauley M, Murray D, Jung C, Peksa G, Gottlieb M Development of an expert consensus checklist for emergency ultrasound. AEM Educ Train 2022 Aug;6(4):e10783. doi:10.1002/aet2.10783

Jagpal S, Fant A, Bianchi R, Kalnow A Teaching Quality Improvement: The Use of Education Theories Across the Medical Education Spectrum. Cureus 2022 Jul;14(7):e26625. doi:10.7759/cureus.26625

Lima RA, Karch LB, Lank PM, Allen KC, Kim HS Feasibility of Emergency Department-based Fentanyl Test Strip Distribution. J Addict Med 2022 Aug 16;. doi:10.1097/ADM.0000000000001008

Kim HS, Feinglass J, McCarthy DM, Lank PM, Mason M Unintentional Opioid Overdose Death Characteristics in Illinois Before and During the COVID-19 Era, 2017 to 2020. JAMA Health Forum 2021 11;2(11):e213699. doi:10.1001/jamahealthforum.2021.3699

Tandlich MA, Williamson K Bilateral Central Retinal Vein Occlusion as a First Presentation of Multiple Myeloma: A Case Report. Clin Pract Cases Emerg Med 2022 Aug;6(3):232-235. doi:10.5811/cpcem.2022.4.55710

Shappell E, Wagner MJ, Bailitz J, Mead T, Ahn J, Eyre A, Maldonado N, Wallace B, Park YS The test developer's dilemma: Evaluating the balance of feasibility and empiric performance of test development techniques for repeated written assessments. Med Teach 2022 Sep 06;:1-6. doi:10.1080/0142159X.2022.2118042

Slocum JD, Holl JL, Love R, Shi M, Mackersie R, Alam H, Loftus TM, Andersen R, Bilimoria KY, Stey AM Defining obstacles to emergency transfer of trauma patients: An evaluation of triage processes from nontrauma and lower-level Illinois trauma centers. Surgery 2022 Sep 30;. pii:S0039-6060(22)00657-2

Rising KL, Cameron KA, Salzman DH, Papanagnou D, Doty AMB, Piserchia K, Leiby BE, Shimada A, McGaghie WC, Powell RE, Klein MR, Zhang XC, Vozenilek J, McCarthy DM. Communicating Diagnostic Uncertainty at Emergency Department Discharge: A Simulation-Based Mastery Learning Randomized Trial. Acad Med 2022 Oct 04;. doi:10.1097/ACM.0000000000004993

Lo AX, Rundle AG Everyone eventually goes to ground: Distinguishing true syncope from mimics for emergency department studies on syncope in older persons. J Am Coll Emerg Physicians Open 2022 Oct;3(5):e12841. doi:10.1002/emp2.12841





# **FUTURE CONFERENCES**

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**March 21-24, 2023  
Las Vegas, NV**



**March 31- April 2, 2023  
San Diego, CA**



**March 31- April 2, 2023  
San Diego, CA**

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**The Department of Emergency Medicine at Northwestern University Feinberg School of Medicine welcomes your questions and feedback.**

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