

# Peter M. Graffy, PhD, MPH

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Population Health Epidemiologist and Informaticist  
Center for Computational Medicine and Clinical Artificial Intelligence, University of Chicago  
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## EDUCATION

- 2021 – 2025 **PhD, Biomedical Informatics**  
Northwestern University, Chicago, IL
- 2015 – 2017 **MPH, Epidemiology, Population Health**  
University of Wisconsin-Madison, Madison, WI
- 2008 – 2012 **BA, Anthropology, Women & Gender Studies, Spanish**  
Luther College, Decorah, IA

## PROFESSIONAL POSITIONS & EMPLOYMENT

- 2025 – **Pulmonary & Critical Care Postdoctoral Fellow**  
Center for Computational Medicine and Clinical Artificial Intelligence  
University of Chicago, Chicago, IL
- 2024 – 2025 **American Heart Association Predoctoral Fellow**  
Institute for Artificial Intelligence in Medicine  
Department of Preventive Medicine  
Northwestern University, Chicago, IL
- 2020 – 2023 **Research Project Manager**  
Surgical Outcomes and Quality Improvement Center  
Department of Surgery, Northwestern University, Chicago, IL
- 2015 – 2020 **Research Scientist**  
Department of Radiology  
University of Wisconsin Hospital and Clinics, Madison, WI

## PUBLICATIONS

1. **Graffy PM.** The Effect of Masculinity on Sexual Health Practices among College-Age Students in the United States. *Journal of the National Association of Student Anthropologists*. 2011;2(2):12-19.
2. **Graffy PM,** Loomis S, Hinshaw JL, Lee F, Kim D, Pickhardt P, Lubner M, Kitchin D, Ziemlewicz T. Pulmonary intraparenchymal blood patching decreases the rate of pneumothorax-related complications following percutaneous CT-guided needle biopsy. *Journal of Vascular and Interventional Radiology*. 2017;28(4):608-613.e1.
3. **Graffy PM,** Pickhardt PJ. Quantification of hepatic and visceral fat by CT and MR imaging: relevance to the obesity epidemic, metabolic syndrome and NAFLD. *British Journal of Radiology*. 2016;89:20151024. doi:10.1259/bjr.20151024. [Selected for “Best of BJR 2017.”]
4. **Graffy PM,** Lee SJ, Ziemlewicz TJ, Pickhardt PJ. Prevalence of vertebral compression fractures on routine body CT according to L1 trabecular attenuation: determining thresholds for opportunistic osteoporosis screening. *American Journal of Roentgenology*. 2017;209:491-496. doi:10.2214/AJR.17.17853.

5. Lee SJ, **Graffy PM**, Zea RD, Ziemlewicz TJ, Pickhardt PJ. Future osteoporotic fracture risk related to lumbar vertebral trabecular attenuation measured at routine body CT. *Journal of Bone and Mineral Research*. 2018. doi:10.1002/jbmr.3383.
6. Pickhardt P, **Graffy PM**, Li K, Hernando D, Reeder S. Quantification of liver fat content with non-contrast MDCT: phantom and clinical correlation with MRI proton density fat fraction. *American Journal of Roentgenology*. 2018;W1-W7. doi:10.2214/AJR.17.19391.
7. Lee S, Summers R, **Graffy PM**, Pickhardt P. Population-based opportunistic osteoporosis screening: validation of a fully automated CT tool for assessing longitudinal BMD changes. *British Journal of Radiology*. 2018;20180726. doi:10.1259/bjr.20180726.
8. O'Connor S, **Graffy PM**, Zea R, Pickhardt P. Does nonenhanced CT-based quantification of abdominal aortic calcification outperform the Framingham Risk Score in predicting cardiovascular events in asymptomatic adults? *Radiology*. 2018. doi:10.1148/radiol.2018180562.
9. Kupfer S, Lubner S, Coronel E, Pickhardt P, Tipping M, **Graffy PM**, Keenan E, Ross E, Li T, Weinberg D. Adherence to post-resection colorectal cancer surveillance at NCI-designated Comprehensive Cancer Centers. *Cancer Medicine*. 2018. <https://doi.org/10.1002/cam4.1678>.
10. Pickhardt P, **Graffy PM**, Said A, Jones D, Malecki K, Welsh B, Zea R, Lubner M. Multi-parametric CT for noninvasive staging of HCV-related liver fibrosis: correlation with METAVIR histopathology. *American Journal of Roentgenology*. 2019. doi:10.2214/AJR.18.20284.
11. **Graffy PM**, Liu J, Summers R, Pickhardt P. Deep learning-based muscle segmentation and quantification at abdominal CT: application to a longitudinal adult screening cohort for sarcopenia assessment. *British Journal of Radiology*. 2019;92:20190327.
12. Jang S, **Graffy PM**, Lee S, Summers R, Pickhardt P. Opportunistic osteoporosis screening at routine body CT: normative L1 trabecular attenuation values from >20,000 cases. *Radiology*. 2019;291(2):360-367. doi:10.1148/radiol.2019181648.
13. **Graffy PM**, McKinnon S, Lee G, Remington P. Life outside: a narrative ethnographic inquiry into the determinants of homelessness. *Journal of Poverty*. 2018. doi:10.1080/10875549.2018.1550133.
14. **Graffy PM**, Liu J, O'Connor S, Summers R, Pickhardt P. Fully automated segmentation and quantification of aortic calcification at abdominal CT: application of a deep learning algorithm to a longitudinal screening cohort. *Abdominal Radiology*. 2019. doi:10.1007/s00261-019-02014-2.
15. **Graffy PM**, Sandfort V, Summers RM, Pickhardt PJ. Automated liver fat quantification at unenhanced abdominal CT in a longitudinal screening cohort. *Radiology*. 2019. <https://doi.org/10.1148/radiol.2019190512>.
16. Pickhardt PJ, **Graffy PM**, Zea R, Lee SJ, Liu J, Sandfort V, Summers RM. Automated CT biomarkers for opportunistic prediction of future cardiovascular events and mortality in an asymptomatic screening population. *Lancet Digital Health*. 2020;2:e192-e200. doi:10.1016/S2589-7500(20)30025-X.
17. Pickhardt PJ, **Graffy PM**, Weigman B, Deiss-Yehiely N, Hassan C, Weiss JM. Diagnostic performance of multi-target stool DNA and CT colonography for non-invasive colorectal cancer screening. *Radiology*. 2020. doi:10.1148/radiol.2020201018.
18. Pickhardt PJ, **Graffy PM**, Zea R, Lee SJ, Liu J, Sandfort V, Summers RM. Opportunistic screening for metabolic syndrome in asymptomatic adults utilizing fully automated abdominal CT-based biomarkers. *American Journal of Roentgenology*. 2020. doi:10.2214/AJR.20.23049.
19. Pickhardt PJ, **Graffy PM**, Zea R, Lee SJ, Liu J, Sandfort V, Summers RM. Automated abdominal CT imaging biomarkers for opportunistic prediction of future major osteoporotic fractures. *Radiology*. 2020. doi:10.1148/radiol.2020200466.
20. Summers RM, Elton DC, Lee S, Liu J, Bagheri M, Sandfort V, Grayson PC, Mehta NN, Pinto PA, Linehan WM, Perez AA, **Graffy PM**, O'Connor SD, Pickhardt PJ. Atherosclerotic plaque burden on abdominal CT: automated assessment with deep learning on noncontrast and contrast-enhanced scans. *Academic Radiology*. 2020;28(11):1491-1499.
21. Pickhardt PJ, **Graffy PM**, Zea R. CT-gestützte Prädiktion osteoporotischer Frakturen. Risk.

2020;297:64-72.

22. Pickhardt PJ, **Graffy PM**, Perez AA, Lubner MG, Elton DC, Summers RM. Opportunistic screening at abdominal CT: automated body composition biomarkers for added cardiometabolic value. *RadioGraphics*. 2021;41(2):524-542.
23. Pickhardt PJ, Blake G, **Graffy PM**, Sandfort V, Elton DC, Perez AA, Summers RM. Liver steatosis categorization on contrast-enhanced CT using a fully automated deep learning volumetric segmentation tool. *American Journal of Roentgenology*. 2020;217(2):359-367.
24. **Graffy PM**, Summers RM, Perez AA, Sandfort V, Zea R, Pickhardt PJ. Automated assessment of longitudinal biomarker changes at abdominal CT: correlation with subsequent cardiovascular events. *Abdominal Radiology*. 2021. doi:10.1007/s00261-020-02885-w.
25. Lubner MG, **Graffy PM**, Said A, Watson R, Malecki K, Pickhardt PJ. Utility of multiparametric CT for identification of high-risk NAFLD. *American Journal of Roentgenology*. 2021. doi:10.2214/AJR.20.22842.
26. Sandfort V, Yan K, **Graffy PM**, Pickhardt PJ, Summers RM. Use of variational autoencoders with unsupervised learning to detect incorrect organ segmentations on CT. *Radiology: Artificial Intelligence*. 2021;3(3):e200218. doi:10.1148/ryai.2021200218.
27. Perez AA, Noe-Kim V, Lubner MG, **Graffy PM**, Garrett JW, Elton DC, Pickhardt PJ. Automated deep learning CT-based liver volume segmentation: defining normal and hepatomegaly for clinical practice. *Radiology*. 2022;302(2):336-342.
28. Olson SL, Ingram MC, **Graffy PM**, Murphy PM, Tian Y, Samis JH, Josefson JL, Rastatter JC. Effect of surgeon volume on pediatric thyroid surgery outcomes: a systematic review. *Journal of Pediatric Surgery*. 2021.
29. Deiss-Yehiely N, **Graffy PM**, Weigman B, Hassan C, Pickhardt PJ, Weiss JM. High-risk serrated lesion detection at colorectal cancer screening with multi-target stool DNA versus CT colonography. *American Journal of Roentgenology*. 2022;218(4):670-676.
30. Pickhardt PJ, Perez AA, Garrett JW, **Graffy PM**, Zea R, Summers RM. Fully automated deep learning tool for sarcopenia assessment on CT: L1 versus L3 vertebral level muscle measurements. *American Journal of Roentgenology*. 2021. doi:10.2214/AJR.21.26486. **[Selected for “Best of MSK AJR 2022.”]**
31. Guo Z, Blake GM, **Graffy PM**, Sandfort V, Summers RM, Yin L, Li W, Xu S, Chen Y, Zhou J, Shao J, Jiang Y, Qu H, Baoqing L, Cheng X, Pickhardt PJ. Hepatic steatosis: CT-based prevalence in adults in China and the United States and associations with age, sex, and BMI. *American Journal of Roentgenology*. 2022;218(5):846-857.
32. Pickhardt PJ, Nguyen T, Perez AA, **Graffy PM**, Jang S, Summers RM, Garrett JW. Improved CT-based osteoporosis assessment with a fully automated deep learning tool. *Radiology: Artificial Intelligence*. 2022;4(5):e220042.
33. Lee M, Zea R, Garrett J, **Graffy PM**, Summers RM, Pickhardt PJ. Abdominal CT body composition thresholds using automated AI tools for predicting 10-year adverse outcomes. *Radiology*. 2022:220574.
34. **Graffy PM**, Zimmerman L, Luo Y, Yu J, Choi Y, Zmora R, Lloyd-Jones D, Allen N. Longitudinal clustering of Life’s Essential 8 health metrics in the CARDIA study. *Journal of the American Medical Informatics Association*. 2024;31(2):406-415.
35. **Graffy PM**, Sunderraj A, Visa MA, Miller CH, Barrett BW, Rao S, et al. Methodological approaches for measuring the association between heat exposure and health outcomes: a global scoping review. *GeoHealth*. 2024;8:e2024GH001071.
36. Visa MA, Kemprecos H, **Graffy PM**, Barrett BW, Rasnick E, Kho A, Horton DE. Degrees of difference: the impact of climate data resolution on mortality estimates using a novel geospatial linkage tool. *Environmental Research Letters*. 2025. Forthcoming.
37. Garcia HC, **Graffy PM**, Barrett BW, Visa MA, Jia J, Mallen E, Prachand N, Briggs G, Ford T, Wuebbles D, Allen N, Kho A, Horton DE. Increasing urban tree canopy is associated with reduced

temperatures and mortality: a longitudinal analysis of Chicago neighborhoods. *GeoHealth*. 2025. Accepted pending revisions.

38. Barrett BW, **Graffy PM**, Rasnick E, Kho A, Horton DE. Daymet and DeGAUSS: development of a method linking high-resolution gridded meteorology with geocoded healthcare encounters. *Journal of the American Medical Informatics Association*. 2025. Under review.
39. **Graffy PM**, Barrett BW, Horton DE, Kho AN, Allen NB. Critical temperature thresholds for identifying vulnerability to heat-related excess cardiovascular morbidity and mortality. *Journal of the American Heart Association*. 2025. Accepted pending revisions.
40. **Graffy PM**, Barrett BW, Horton DE, Allen NB, Kho AN. Heat and hearts: computational phenotyping of cardiovascular disease during extreme heat events using EHR data. *Journal of Biomedical Informatics*. 2025. Under review.
41. Qu S, Sillmann J, Barrett BW, **Graffy PM**, Poschlod B, Brunner L, Jorgensen E, Horton D. Integrating machine-learning-based variable selection into the Heat Vulnerability Index framework: determinants of heat-related mortality in Chicago. *Environmental Research: Climate*. 2025. Under review.
42. Jang H, **Graffy PM**, Barrett BW, Horton DE, Chan JL, Kho AN. Identifying heat-related diagnoses in emergency department visits among adults in Chicago: a heat-wide association study. *Science Advances*. 2025. Under review.
43. Mackie J, Barrett BW, **Graffy PM**, Horton DE, Kho AN. Leveraging LLM-based weak supervision for automated detection of heat-related EMS incidents. 2025. Manuscript in preparation.
44. **Graffy PM**, Guleria S, Chhikara K, Burrows K, Parker WF. The association of air pollution with the incidence and severity of acute respiratory failure in critically ill patients. *Journal of the American Medical Association*. 2025. In preparation.
45. **Graffy PM**, Burrows K, Parker WF. Unsupervised longitudinal clustering and computational phenotyping of acute respiratory failure trajectories in ICU patients. *Journal of the American Medical Association*. 2025. In preparation.

## CONFERENCE ABSTRACTS

1. Coronel E, *et al*. Adherence to colorectal cancer surveillance guidelines at three United States academic cancer centers. *Gastroenterology*. 150(4): S766-S767, 2016. [doi:10.1016/S0016-5085(16)32598-7]
2. **Graffy PM**, Ziemlewicz T, Pickhardt P. *Prevalence of vertebral compression fractures at abdominal CT according to trabecular attenuation*. Radiological Society of North America (RSNA) Annual Scientific Meeting, Chicago, IL, Nov 2016. Oral Presentation.
3. Ziemlewicz TJ, **Graffy PM**, Lee SJ, Pickhardt PJ. *Prevalence of vertebral compression fractures on routine thoracoabdominal imaging according to L1 trabecular attenuation: validation of opportunistic osteoporosis screening*. Society of Abdominal Radiology (SAR) Annual Scientific Meeting, Hollywood, FL, Mar 26-31, 2017. Oral Presentation.
4. **Graffy PM**, McKinnon S, Lee G, Remington P. *Life Outside: an investigation into the lived experiences of the Madison homeless*. University of Wisconsin Population Health Sciences Annual Poster Presentation, Madison, WI, Apr 2017. Poster Presentation.
  - a. Also presented at UW-Madison Preventive Health Fellowship Meeting, Madison, WI, Feb 2018. Oral Presentation.
5. **Graffy PM**, Pickhardt P, Said A, Jones D, Malecki K, Welsh B, Zea R, Lubner M. *Multi-parametric CT for noninvasive staging of liver fibrosis from HCV: correlation with the histopathologic METAVIR score*. Presented at:
  - a. Society of Abdominal Radiology (SAR) Annual Scientific Meeting, Scottsdale, AZ, Mar 4-9, 2018.

- b. American Roentgen Ray Society (ARRS) Annual Scientific Meeting, Washington, DC, Apr 21-27, 2018.
  - c. Zachary Clark Radiology Research Symposium, Madison, WI, May 5, 2018. Oral Presentation.
6. **Graffy PM**, Li K, Hernando D, Reeder S, Pickhardt P. *Quantification of liver fat content with non-contrast MDCT: correlation with MRI proton density fat fraction (PDFF)*. Presented at:
  - a. ARRS 2018 Annual Meeting, Washington DC (Apr 21-27, 2018).
  - b. Zachary Clark Radiology Research Symposium, Madison WI (May 5 2018). Oral Presentation.
7. **Graffy PM**, Lubner M, Pickhardt P. *Can multiparametric CT predict the presence of NASH and fibrosis in patients with NAFLD?* American Roentgen Ray Society 119th Annual Meeting, Honolulu HI, May 5-10, 2019. Oral Presentation.
8. Pickhardt PJ, **Graffy PM**, Zea R, Lee SJ, Liu J, Sandfort V, Summers RM. *Fully automated analysis of abdominal CT scans for opportunistic prediction of cardiometabolic events: initial results in a large asymptomatic adult cohort*. Society of Abdominal Radiology (SAR) Annual Scientific Meeting, Orlando FL, 2019. [**Roscoe E. Miller Best Scientific Paper Award.**]
9. **Graffy PM**, Jang S, Lee S, Summers M, Liu J, Pickhardt P. *Opportunistic osteoporosis screening at routine body CT: normative L1 trabecular attenuation values from >20,000 data points*. ARRS 119th Annual Meeting, Honolulu HI, May 5-10, 2019. [**Cum Laude Award for Best Oral Presentation.**]
10. **Graffy PM**, Liu J, Summers M, Pickhardt P. *Deep learning-based segmentation and quantification of muscle density and area at abdominal CT in a longitudinal adult screening cohort*. ARRS 119th Annual Meeting, Honolulu HI, May 5-10, 2019. Oral Presentation.
11. Sandfort V, Yan K, **Graffy PM**, Pickhardt PJ, Summers RM. *CT organ segmentation: use of variational autoencoders to detect incorrect segmentations in a large (>10 000 CT) dataset*. Radiological Society of North America (RSNA) Annual Meeting, Chicago IL, Nov 2019.
12. Pickhardt PJ, **Graffy PM**, Weigman B, Deiss-Yehiely N, Weiss JM. *Diagnostic performance of multi-target stool DNA test and CT colonography for non-invasive colorectal cancer screening in clinical practice*. Presented at:
  - a. Society of Abdominal Radiology (SAR) Annual Meeting, Maui HI (Mar 1-6, 2020).
  - b. American Roentgen Ray Society (ARRS) Annual Meeting, Chicago IL (May 3-8, 2020).
13. Pickhardt PJ, **Graffy PM**, Zea R, Summers RM. *Prediction of metabolic syndrome at abdominal CT in asymptomatic adults using automated CT-based biomarkers*. Presented at:
  - Society of Abdominal Radiology (SAR) Annual Meeting, Maui HI (Mar 1-6, 2020).
  - ARRS Annual Meeting, Chicago IL (May 3-8, 2020).
14. **Deiss-Yehiely N**, Graffy PM, Weigman B, Hassan C, Pickhardt PJ, Weiss JM. *High-risk serrated lesion detection at CRC screening: multi-target stool DNA versus CT colonography*. Digestive Disease Week 2020, Chicago IL, May 2-5, 2020.
15. **Graffy PM**, Zimmerman L, Luo Y, Yu J, Choi Y, Zmora R, Lloyd-Jones D, Allen N. *Longitudinal clustering of Life's Essential 8 health metrics: application of a novel unsupervised learning method in the CARDIA Study*. American Medical Informatics Association (AMIA) Annual Meeting, New Orleans LA, Nov 11-14, 2023.
16. **Graffy PM**, Zimmerman L, Luo Y, Yu J, Choi Y, Zmora R, Lloyd-Jones D, Allen N. *Clustering in CARDIA: longitudinal analysis of Life's Essential 8 using a novel machine-learning method*.
  - a. 17th Annual Feinberg Lewis Landsberg Research Day, Northwestern University, Chicago IL, Sep 14, 2023. Poster.
  - b. 8th Annual Chicago Biomedical Informatics Data Jam, Loyola University, Maywood IL, Oct 6, 2023. Poster.
17. **Peter M. Graffy**, Ashwin Sunderraj, Maxime A. Visa, Corinne Miller, Ben Barrett, Sheetal Rao, Sara F. Camilleri, Ryan D. Harp, Chuxuan Li, Anne Brennenman, Abel Kho, Daniel E. Horton, Norrina Allen. *Climate-related heat exposure and cardiovascular health: a global scoping review*. American Heart Association EPI-Lifestyle Meeting, Chicago IL, Mar 18-21, 2024. Poster.

18. Benjamin W. Barrett, **Peter M. Graffy**, Daniel E. Horton, Abel Kho. *Daymet and DeGAUSS: development of a novel method linking high-resolution gridded meteorological data with geocoded healthcare encounters*. International Population Data Linkage Network Annual Meeting, Chicago IL, Sep 18, 2024. Rapid Oral.
19. Harrison Garcia, **Peter Graffy**, Benjamin Barrett, Maxime Visa, Ashwin Sunderraj, Jenny Jia, Daniel E. Horton. *Urban tree canopy, temperature, and mortality: a machine-learning analysis of Chicago neighborhoods*. 18th Annual Feinberg Lewis Landsberg Research Day, Northwestern University, Chicago IL, Sep 12, 2024. Poster. *Social and Public Health Section Finalist*.
20. Maxime Visa, Helen Kemprecos, Benjamin Barrett, **Peter Graffy**, Daniel Horton. *Development and validation of a novel method for healthcare data linkage to high-resolution gridded temperature and climate variables*. 18th Annual Feinberg Lewis Landsberg Research Day, Chicago IL, Sep 12, 2024. Poster.
21. **Peter Graffy**, Maxime Visa, Benjamin Barrett, Abel Kho, Daniel Horton. *Comparison of heat exposure measurement methods to determine the effect of extreme heat on cardiovascular disease mortality in Chicago*. 18th Annual Feinberg Lewis Landsberg Research Day, Chicago IL, Sep 12, 2024. Poster.
22. Mehul V. Raval, Yao Tian, Lynn Huang, Erin Wymore, Deysi Paniagua-Perez, Kirsty M. Engelhardt, Mallory N. Perez, Alison Lehane, Charesa Smith, Gwyneth Sullivan, Audra J. Reiter, Andrew Hu, Martha-Conley E. Ingram, **Peter Graffy**, et al. *Implementation yields success – results of the ENhanced Recovery In CHildren Undergoing Surgery (ENRICH-US) randomized controlled trial*. American Pediatric Surgical Association Annual Meeting, Quebec Canada, May 7-10, 2025.
23. Mehul V. Raval, Willemijn Schafer, Yao Tian, Mallory N. Perez, Lynn Huang, Alison Lehane, Erin Wymore, Deysi Paniagua-Perez, Charesa Smith, Gwyneth Sullivan, Audra J. Reiter, Andrew Hu, Martha-Conley E. Ingram, Kirsty M. Engelhardt, **Peter Graffy**, et al. *Preliminary analysis of implementation drivers in the ENRICH-US randomized controlled trial*. American Surgical Association Annual Meeting, San Diego CA, Apr 24-26, 2025.
24. **Peter Graffy**, Benjamin Barrett, Daniel Horton, Abel Kho, Norrina Allen. *Critical temperature thresholds for identifying vulnerability to heat-related excess cardiovascular morbidity and mortality in Chicago*. 19th Annual Feinberg Lewis Landsberg Research Day, Chicago IL, Sep 11, 2025. Poster.
  - a. Also presented at *Illinois Weather and Public Health Response Summit*, Chicago IL, Nov 12-13, 2025. Oral Presentation.
25. **Peter Graffy**, Benjamin Barrett, Daniel Horton, Norrina Allen, Abel Kho. *Heat and Hearts: computational phenotyping of cardiovascular disease during extreme heat events using electronic health record data*.
  - a. 19th Annual Feinberg Lewis Landsberg Research Day, Chicago IL, Sep 11, 2025. Poster.
  - b. American Heart Association Scientific Sessions – Early Innovators Spotlight, New Orleans LA, Nov 7-10, 2025. Oral Presentation.
26. Hyojung Jang, **Peter Graffy**, Benjamin Barrett, Abel Kho. *Diagnosis-specific heat-related emergency department visits among adults in Chicago: a time-stratified case-crossover study using distributed lag nonlinear models*. 19th Annual Feinberg Lewis Landsberg Research Day, Chicago IL, Sep 11, 2025. Poster.
27. Jake Mackie, **Peter Graffy**, Benjamin Barrett. *Leveraging LLM-based weak supervision for automated detection of heat-related EMS incidents*. 19th Annual Feinberg Lewis Landsberg Research Day, Chicago IL, Sep 11, 2025. Poster.
28. **Peter Graffy**, Shan Guleria, Kaveri Chhikara, William Parker. *The REspiratory Failure Environmental Risk (REFER) Study: computational phenotyping of acute respiratory failure in ICU patients*. University of Chicago BSD Postdoctoral Symposium, Chicago IL, Sep 17, 2025. Oral Presentation. **[Best Oral Presentation Award.]**
29. Harrison Garcia, **Peter Graffy**, Benjamin Barrett, Maxime Visa, Jenny Jia, Daniel E. Horton. *Increasing tree canopy associated with reduced mortality: a longitudinal analysis of Chicago neighborhoods*.

Association of Medicine and Psychiatry Annual Conference, Newport Beach CA, Oct 9-11, 2025.

Poster.

30. Nawaz M.O., Goldberg D.L., Kerr G.H., Kim S-Y., Chen L., Anenberg S.C., **Graffy PM.**, Lang V., Horton D.E., Southerland V. *Modeling approaches of applying remote sensing to infer surface-level NO<sub>2</sub>*. American Geophysical Union (AGU) Fall Meeting 2025, New Orleans LA. Poster Presentation.
31. Bell R, **Graffy PM**, Ramdeen SL, Siringan M, Horton DE, Parker WF, Palis B, Okereke I, Odell D. *Pollution and Progression: Air Quality and Stage of Lung Cancer Diagnosis Across the U.S.* American Association for Thoracic Surgery (AATS) 2026 Annual Meeting, Chicago IL.
32. **Graffy PM**, Chhikara K, Guleria S, Ingram NE, Chaudhari V, Rojas JC, Buell K, Ramesh N, Ortiz AC, Barker AK, Park B, Lyons PG, Liao W-T, Gao CA, Hochberg C, Horton DE, Mutlu G, Parker WF. *Cumulative air pollution exposure increases the severity of acute respiratory failure: a U.S. multicenter study.* American Thoracic Society (ATS) 2026 International Conference, Orlando FL.

## AWARDS AND HONORS

### A. Personal

- |            |   |
|------------|---|
| 2025       | American Heart Association Early Innovator Spotlight                      |
| 2025       | University of Chicago BSD Postdoc Travel Award                            |
| 2025       | University of Chicago BSD Annual Symposium Best Oral Presentation Award   |
| 2025       | Chicago Wilderness Alliance George B. Rabb Force of Nature Award          |
| 2025       | Invited speaker for the University of Hamburg climate and health workshop |
| 2023       | Selected to present at inaugural AI in Healthcare Forum                   |
| 2019       | Society of Abdominal Radiology Roscoe E. Miller Best Paper Award          |
| 2019       | American Roentgen Ray Society Cum Laude Best Oral Presentation Award      |
| 2017       | Delta Omega Public Health Honor Society                                   |
| 2016       | Best of British Journal of Radiology Award                                |
| 2014– 2018 | All-American Ultimate Frisbee Association 1st Team                        |
| 2012       | Luther College Senior Honors Thesis Award                                 |
| 2008– 2012 | Presidential Scholarship  |
| 2008– 2012 | NCAA Division III All-Academic 1st Team (Men's Soccer)                    |
| 2008– 2012 | Dean's List   |

### B. Students

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| 2024 | Poster Finalist, 18 <sup>th</sup> Annual Lewis Landberg Research Day, Harrison Garcia |
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## SERVICE

### A. Invited Professional and Public Lectures

1. "Data linkage, electronic health records, and CVD," University of Hamburg, Hamburg, Germany, 2025
2. "Critical temperature thresholds for heat-related cardiovascular morbidity and mortality in Chicago," University of Illinois-Chicago, Chicago, IL, 2025
3. "NYUTron and LLMs in clinical decision making," Northwestern University, Chicago, IL, 2023

### B. University, School and Departmental Committees

University of Chicago

C. Biological Sciences Postdoctoral Association Member

Northwestern University

- Northwestern Institute for Artificial Intelligence in Medicine: AI in Healthcare Forum Student Organizer
- Health Sciences Integrated Program Student Organization Sports Chair
- Youth Sports Coach (Soccer and Ultimate Frisbee)

#### D. Organization Membership

- American Thoracic Society (ATS) (2025 – Present)
- American Heart Association (AHA) (2023 – Present)
- American Medical Informatics Association (AMIA) (2023 – Present)
- American Roentgen Ray Society (ARRS) (2016-2019)

#### E. Reviewer of Manuscripts

*Osteoporosis International, Artificial Intelligence in Medicine, Journal of Computer Assisted Tomography (JCAT), Journal of Gerontology: Medical Sciences, Journal of the American Medical Informatics Association (JAMIA), Journal of the American Medical Informatics Association Open (JAMIAO), JMIR Public Health and Surveillance (JPHS)*

#### F. Teaching Experience

##### Northwestern University

2023            PUB\_HLTH 303: Environmental Health Sciences (TA)  
2024            PUB\_HLTH 422: Intermediate Epidemiology (Guest Lecturer)

#### G. Research Mentoring

Name	Role / Level	Years	Department / Program	Institution
Ben Weigman	PGY3, Diagnostic Radiology	2017 – 2018	Department of Radiology	University of Wisconsin Hospital and Clinics
Nimrod Deiss-Yehiely	PGY2, Internal Medicine	2018 – 2019	Department of Radiology	University of Wisconsin Hospital and Clinics
Maxime Visa	Medical Student	2022 – 2025	Feinberg School of Medicine	Northwestern University
Harrison Garcia	Medical Student	2024 – 2025	Feinberg School of Medicine	Northwestern University
Helen Kemprecos	Medical Student	2024 – 2025	Carle School of Medicine	University of Illinois Urbana-Champaign
Jake Mackie	PhD Candidate	2024 – 2025	Health Services and Outcomes Research	Northwestern University
Mercy Berchi	PhD Candidate	2024 – 2025	Health and Biomedical Informatics	Northwestern University
Donna Hooshmand	PhD Candidate	2025	Computer Science	Northwestern University
Hyojung Jang	PhD Candidate	2025 – 2026	Biostatistics	Northwestern University
Rachel Zuo	High School Student	2025	Research Project Mentorship	—
Aarin Bothra	High School Student	2025	Research Project Mentorship	—

#### GRANTS AND OTHER FUNDING

## **A. Ongoing Support**

5T32HL007605-40

PI: Mutlu & Fang

06/30/2025 – Present

NIH, NHLBI

Postdoctoral Fellowship

*Research Training in Pulmonary Critical Care Computational Medicine.*

## **B. Completed Support**

24PRE1193628

PI: Graffy

01/01/2024 – 6/30/2025

American Heart Association

Predoctoral Fellowship

*Heat and Hearts: Computational Phenotyping Cardiovascular Disease in the Context of Extreme Heat.*

## **C. Under Review**

Eric and Wendy Schmidt AI in Science Fellowship

PI: Graffy

2026 – 2028

The University of Chicago Physical Sciences Division: Data Science

K99/R00

PI: Graffy

2026 – 2030

NIH/NHLBI

Pathway to Independence Award

*Development and validation of a multi-modal respiratory failure environmental risk (REFER) index for critical care patients.*

## **MEDIA**

*Work featured in:* “OEMC, cooling centers, air conditioning & more: What's changed in extreme heat response since deadly 1995 Chicago heat wave.” ABC 7 Chicago, July 16, 2025. [Link here](#).

*Work featured in:* “Heat Study: Chicago Temperatures Vary as Much as 22 Degrees Between Neighborhoods.” *Borderless Magazine*, by Liuan Huska, January 29, 2024. [Link here](#).

*Work featured in:* “As Chicago Survives Another Heat Wave, the City Reassesses Its Disaster Plan.” *Chicago Tribune*, July 16, 2025. [Link here](#).

*Featured in broadcast:* “Chicago Park District Announces Extended Pool Operations Through Labor Day.” *WGN-TV*, August 8, 2025. Highlighted the district’s use of the Heat Vulnerability Index to guide a phased closure of pools and beaches—keeping 22 beaches, 19 neighborhood pools, and one inland beach open through Labor Day amid staffing and extreme heat considerations. [Link here](#).

## **PUBLICATION METRICS**

Total Citations (All Time): **2,561**

Citations Since 2020: **2,437**

h-index: **24 (both overall and since 2020)**

i10-index: **29 (both overall and since 2020)**

## **SOFTWARE AND TOOLS**

Daymet DeGAUSS Tool (2024). Open-source containerized workflow for assigning high-resolution Daymet climate data to geospatial health datasets. Available at: <https://degauss.org/daymet>.