

BIOGRAPHICAL SKETCH

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NAME: Graber, Judith, M.

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POSITION TITLE: Associate Professor

EDUCATION/TRAINING

INSTITUTION AND LOCATION	DEGREE	Completion Date MM/YYYY	FIELD OF STUDY
University of Wisconsin, Madison Wisconsin	BS	08/1981	Agricultural Science
University of Illinois, Chicago, Illinois	MS	05/1991	Epidemiology
University of Illinois, Chicago, Illinois	PhD	05/2012	Epidemiology

Personal Statement

I am an occupational and environmental epidemiologist and an Associate Professor of Epidemiology at the Rutgers School of Public Health (SPH) . My research focuses on the intersection and synergistic impacts of occupational and environmental exposures, as well as behavioral factors. My research laboratory, the Firefighter Cancer Prevention and Assessment Study (CAPS), was established as the result of the CINJ Director's response to community partners asking for research into causes and prevention of excess cancer in firefighters. Since its founding in 2017, CAPS has evolved from a traditional epidemiologic study of risk factors into implementation science. We have worked with community partners to translate the findings from our enrollment of over 600 volunteer firefighters across the US into strategies to promote the reduction of cancer risk in this understudied population. The CAPS platform provides opportunities for trainees and young investigators to get hands on-training in applied research. I have a strong track record of mentees obtaining internal and external pilot funding. Most recently, in collaboration with E. Bandera, I supported a career development grant application for a new junior faculty member at CINJ, H. Iyer. I am also collaborating with the New Jersey State Cancer Registry on a linkage study of career firefighters and cancer mortality in New Jersey.

With my faculty primary appointment at Rutgers SHP, I teach their Cancer Epidemiology. A number of new and seasoned CINJ faculty contribute that course with lectures and shared resources, most recently N. Zeinomar, B. Qin and A. Stroup. I look forward to continuing and expanding my research collaborations with CINJ faculty as well as working with new faculty and trainees.

Ongoing and recently completed projects that I would like to highlight include:

EMW-2021-FP-00416
2022/09/21 - 2025/09/20
Graber (PI)

Do volunteer firefighters implement cancer prevention guidelines? Understanding and filling the gaps.

EMW-2019-FP-00517 (FEMA)
2020/09/28-2023/09/27
Graber (PI)

Cancer Risk and Risk Factors in Volunteer Firefighters: The Cancer Assessment and Prevention Study

FP00015640 (CDC/ATSDR)
2021/11/01-2024/10/30
Laumbach (PI)

Exposure to PFNA and other PFAS in drinking water and associations with health-related outcomes in Gloucester County, New Jersey

Mentored projects:

NIH/NHLBI: F31 PA-21-051

07/01/2021 06/30/2023

Shah (PI)

Barriers and predictors of physical fitness among volunteer firefighters

T42 OH 008422 (CDC/NIOSH)

2020/07/01 -2021/07/01

Shah (PI)

Exploring the Challenges and Facilitators to Physical Health in Volunteer Firefighters Across their Tenure

T42 OH 008422 (CDC/NIOSH)

2022/07/01 -2023/07/01

Lubina (PI)

Exploring exposure sources of per- and polyfluoroalkyl substances (PFAS) among volunteer firefighters

B. Positions and Honors

Positions and Employment

1996 - 1999	Epidemiologist, Centers for Disease Control and Prevention, Atlanta, GA
1999 - 2001	Epidemiologist, Maine Bureau of Health, Maine Cancer Registry, Augusta, ME
2001 - 2003	Coordinator/Epidemiologist, Maine Bureau of Health, Maine Behavioral Risk Factor Surveillance System, Augusta, ME
2004 - 2007	Epidemiologist/Project Manager, Maine Bureau of Health, Environmental Public Health Tracking Program, Augusta, ME
2008 - 2012	Teaching Assistant, University of Illinois, School of Public Health, Division of Epidemiology and Biostatistics, Chicago, IL
2012 –	Adjunct Assistant Professor, University of Illinois, School of Public Health, Division of Epidemiology and Biostatistics, Chicago, IL
2013 –	Center for Environmental Exposures and Disease, a National Institute of Environmental Health Science Center of Excellence, Member Co-chair, Integrative Health Services Facility Core (IHSFC)
2013 –	Assistant Professor, Rutgers the State University of New Jersey, Environmental and Occupational Health Sciences Institute, Piscataway, NJ
2014–2016	Assistant Research Professor, Rutgers the State University of New Jersey, School of Public Health, Piscataway, NJ
2015 –	Adjunct Assistant Professor, Rutgers the State University of New Jersey, Graduate Program in Toxicology
2016 – 2018	Assistant Professor, Rutgers the State University of New Jersey, School of Public Health, Piscataway, NJ
2018 –	Associate Professor, Rutgers the State University of New Jersey, School of Public Health, Piscataway, NJ
2018 – 2020	Epidemiology Concentration Director, School of Public Health, Department of Biostatistics and Epidemiology
2020 –	Master in Epidemiologic Methods, Program Director, School of Public Health, Department of Biostatistics and Epidemiology

Other Experience and Professional Memberships

2000 –	Member, American Public Health Association (APHA)
2012 –	Rutgers Environmental Occupational Sciences Institute
2012 –	Rutgers Cancer Institute of New Jersey
2018 –	Member, International Society for Environmental Epidemiology (ISEE)

- 2019 – Chair, Doctoral Examination Committee, , Rutgers the State University of New Jersey School of Public Health, Department of Biostatistics and Epidemiology
- 2022 – Member, International Commission on Occupational Health (ICOH); Scientific Committee on Epidemiology in Occupational Health (EPICOH)
- 2022 International Agency for Research on Cancer (IARC), World Health Organization IARC Monographs Volume 132 Occupational Exposure as a Firefighter, Working Group member. Lyon France (Epidemiology and Meta analysis subgroups)
- 2023 External Expert Panel member, Centers for Disease Control and Prevention, National Institute for Occupational Safety and Health. RFA-OH-22-002. NIOSH Centers for Education and Research Centers (ERC)

C. Contributions to Science

A. Complex Occupational Exposures and Cancer Risk. A theme of my work over the past decade is cancer risk in occupationally exposed cohorts. This work grew out of my doctoral thesis on the respiratory effects of coal mining in the US and Ukraine, which suggested that coal miners may be at increased risk for lung cancer. I have continued this work as the PI of CAPS where we have initiated a study of cancer incidence and mortality that has lined data from the with the New Jersey State Cancer Registry and the Department of Pension and Benefits. As a result of my work, I served on the 132 Working Group of the International Agency for Cancer (IARC) that evaluate whether occupation as a firefighting is carcinogenic to humans.

- a. DeBono NL, Daniels RD, Freeman LEB, **Graber JM**, Hansen J, Teras LR, Driscoll T, Kjaerheim K, Demers PA, Glass DC, Kriebel D, Kirkham TL, Wedekind R, Miranda-Filho A, Stayner LT, Schubauer-Berigan MK. Firefighting and cancer: A meta-analysis of cohort studies in the context of cancer hazard identification. *Scand J Work Environ Health*. 2023
- b. Demers PA, DeMarini DM, Fent KW, Glass DC, Hansen J, Adetona O, Andersen MHG, Freeman LEB, Caban-Martinez AJ, Daniels RD, Driscoll TR, Goodrich JM, **Graber JM**, Kirkham TL, Kjaerheim K, Kriebel D, Long AS, Main LC, Oliveira M, Peters S, Teras LR, Watkins ER; Burgess JL, Stec AS, White PA, DeBono NL, Benbrahim-Tallaa L, de Conti A, El Ghissassi F, Grosse Y, Leslie T Stayner LT, Suonio E, Viegas S, Wedekind R, Boucheron P, Hosseini B, Kim J, Zahed H, Mattock H, Madia F, Schubauer-Berigan MK. Carcinogenicity of occupational exposure as a firefighter. *Lancet Oncol* (online) 2022. June 30, 2022. PMID: 35780778
- c. **Graber JM**, Harris G, Black K, Lucchini RG, Dasaro CR, Giuliano AR, Steinberg MB, Moline JM, Crane MA, Harrison DJ, Luft B, Todd AC, Udasin IG. Excess HPV-related head and neck cancer in the World Trade Center Health Program General Responder cohort. *Int J Cancer*. 2019 Sep 15;145(6):1504-1509. PMID: 30556136
- d. **Graber JM**, Stayner LT, Conroy LM, Cohen RA, Attfield MD. Respiratory-related mortality among US coal miners; results after 37 years of follow-up *Occup Environ Med*. 2014 Jan;71(1):30-9.

B. PFAS Exposure and Mechanisms of Disease in Occupational Settings. In the past few years, my work included a focus on understanding PFAS exposure and mechanisms of disease in occupational settings. This work has described unique distributions of PFA exposure in volunteer firefighters enrolled in CAPS. I also collaborate with a national network of researchers, the Firefighter Cancer Cohort Study (FFCCS) on studies of PFAS prevalence and serum levels in career firefighters. Within these studies we are investigating associations between PFAS serum levels and epigenetic changes related to early mechanistic changes associated with carcinogenesis.

- 1. **Graber JM**, Black TM, Shah NN, Caban-Martinez AJ, Lu S, Brancard TE, Ho CH, Turyk MB, Burgess JL, Black KG, Steinberg MB, Black K, Steinberg MB, Fan Z, Burgess JL. Prevalence and predictors of per- and polyfluoroalkyl sub-stances (PFAS) serum levels among members of a suburban US volunteer fire department. *Int. J. Environ. Res. Public Health*. 2021 ;18(7):3730. doi: 10.3390/ijerph18073730.
- 2. Burgess JL, Fisher JM, Nematollahig A, Jungh AM, Calkins MM, **Graber JM**, Grant C, Beitel S, Littau S, Gulotta J, Wallentine D, Hughes J, Popp C, Calafat AM, Botelho JC, Coleman AD, Schaefer-Solle N, Louzado-Feliciano P, Oduwole SO, Caban-Martinez AJ. Serum Per-and Polyfluoroalkyl Substances in Four Municipal US Fire Departments . *Am J Ind Med*. 2022 Jul 21. doi: 10.1002/ajim.23413

3. Goodrich JM, Calkins MM, Caban-Martinez AJ, Stueckle T, Grante C, Calafat AM, Nematollahig A, Jungh AM, **Grabner JM**, Jenkins T, Slitt AL, Dewald A, Beitel S, Littau S, Gulotta J, Wallentine D, Hughes J, Popp C, Burgess JL. Per- and polyfluoroalkyl substances, epigenetic age and DNA methylation: a cross-sectional study of firefighters. *Epigenomics*. 2021 (20):1619-1636. doi: 10.2217/epi-2021-0225.
4. Lubina KA, Hinton K, Rivera-Núñez Z2, Black TM, Laumbach RJ, Shou-en L, Shah NN, Fan Z, Yu CH, Brian KS, Burgess JL, Caban-Martinez AJ, Calkins MM, **Grabner JM**. Prevalence and predictors of per- and polyfluoroalkyl substances (PFAS) serum levels among US volunteer firefighters. *International Society for Environmental Epidemiology (ISEE)*. Sep 2022. Athens, Greece

C. PFAS and Other Exposures and Health Outcomes In Community Settings. In addition to occupational settings, my work has explored chemical exposures from industrial and agricultural pollution of community water sources. This includes ongoing research engagement with a community in New Jersey (Paulsboro) with high levels of exposure to a mixture of PFAS with uniquely high levels of perfluorononanoic acid (PFNA). Among the early findings in this community is the observation that increased serum PFNA levels were associated with a clinician's diagnosis of elevated serum cholesterol. This work built upon previous collaborations exploring exposure to agricultural chemical (atrazine, nitrates) through community water supplies and adverse birth outcomes in Midwestern communities.

1. **Grabner JM**, Alexander C, Laumbach R, Black K, Georgopoulos PG, Marshall E, Shendell DG, Alderson D, Mi Z, Mascari M, Weisel C. Per- and polyfluoroalkyl substances (PFAS) blood levels after contamination of a community water supply and comparison with 2013-14 NHANES. *J Expo Sci Environ Epidemiol*. 2019 Mar;29(2):172-182. PMID: 30482936
2. Alberg KS, Turyk ME, Jones RM, Rankin K, Freels S, **Grabner JM**, Stayner LT. Arsenic in drinking water and adverse birth outcomes in Ohio. *Environ Res*. 2017; 157: 52-59. PMID: 28521257
3. Stayner LT, Alberg K, Jones R, **Grabner J**, Pedersen M, Turyk M. Atrazine and nitrate in drinking water and the risk of preterm delivery and low birth weight in four Midwestern states. *Environ Res*. 2016. 3;152:294-303. PMID: 27816866
4. Jones RM, **Grabner JM**, Anderson R, Rockne K, Turyk M, Stayner LT. Community drinking water quality monitoring data: utility for public health research and practice. *J Public Health Manag Pract*. 2014 Mar-Apr;20 (2):210-9. PMID: 23715219

D. The Intersection of Occupational Exposures and Behavioral Risk Factors. In addition to the contributions discussed above, my work focuses on health outcomes of acute and chronic dust exposure in occupational settings and interactions with personal health behaviors. My previous work has explored the direct and indirect influence of World Trade Center related exposures on head and neck cancer incidence through moderation and mediation of that pathway by personal risk factors as well as with oral infection with the human papillomavirus (HPV). I continue this line of research with the Firefighter Cancer Assessment and Prevention Study (CAPS), exploring risk and risk factors, as well as perceptions of disease risk, among volunteer and career firefighters.

- a. Kadiwar P, Shah NN, Black TM, Steinberg MB, Jahnke SA, Caban-Martinez A, Black KG, **Grabner JM**. Dietary Intake in Toms River Volunteer Firefighters; Comparison with U.S. Recommended Dietary Intake. *J Occup Environ Med*. 2021 Feb 1;63(2):147-150. PMID: 33273397
- b. Caban-Martinez AJ, Silvera CA, Santiago KS, Louzado-Feliciano P, Burgess JL, Smith DL, Jahnke S, Horn GP, **Grabner JM**. COVID-19 Vaccine Acceptability among U.S. Firefighters and Emergency Medical Services Workers: A Cross-Sectional Study. *J Occup Environ Med*. 2021;63(5):369-373. PMID: 33560073
- c. Manderski MTB, Black K, Udasin IG, Giuliano AR, Steinberg MB, Stricklans PO, Black T, Dasaro CR, Crane MA, Harrison DJ, Moline JM, Luft B, Lucchini RG, Passannante MR, Todd AC, **Grabner JM**. Risk Factors for Head and Neck Cancer in the World Trade Center Health Program General Responder Cohort: Results from a Nested Case-Control Study. *Occup Environ Med*. 2019. PMID: 32620532
- d. Maloney SR, Udasin IG, Black TM, Steinberg MB, Shah NN, Pratt ME, **Grabner JM**. Perceived Health Risks among Firefighters; The New Jersey Firefighter Health Survey. *J Occup Environ Med*. 2021; 63(4):317-321, 2021. PMID: 33769397

E. Survey Methods in Occupational Settings. An additional focus of my work has been on the use of secondary data to study emerging occupational issues and risk factors in first responders. This work has evolved from my 15 years of experience as an epidemiologist in public health practice. Within the New Jersey Firefighter Cancer Assessment and Prevention Study (CAPS) we are conducting a linkage project to estimate cancer incidence in firefighters using two existing data sources: the New Jersey State Cancer Registry and the New Jersey Office of Pensions and Benefits. We are incorporating estimates of cancer-related health behaviors from the NJ state Behavioral Risk Factor Surveillance System to understand variation in cancer-related risks factors such as physical activity, and prevention behaviors, such as cancer screening between first responders and the New Jersey population. We are also assessing exposure to carcinogens and other toxicants using the National Health and Nutrition Examination Survey.

- a. Manderski MT, Black K, Udasin IG, Black TM, Steinberg MB, Giuliano AR, Luft BJ, Harrison D, Crane MA, Moline J, Passannante MR, Ohman Strickland P, Dasaro CR, Lucchini RG, Todd AC, **Graber JM**. Retrospective Assessment of Risk Factors for Head and Neck Cancer Among World Trade Center General Responders. *Front Public Health*. 2020;8:488057. PMID: 33330296
- b. **Graber JM**, Wackowski OA Manderski MT, Cohen, RA, Rose CS Delnevo CD. Assessing tobacco use among working adults in the United States - the need to consider poly tobacco use *J Occup Environ Med*. 2017; 159 (5):pe100. PMID: 28486349
- c. Graber JM, Worthington KW, Meng Q, Delnevo CD, Cohen RA. High tobacco use among New Jersey workers; a collaborative approach to population access and preliminary survey results. *J Occup Environ Med*. 2016. 58 (4). e133- 9. PMCID: PMC5295724
- d. Farnacio Y, Marshall E, Pratt M, **Graber JM**. Are Workplace Psychosocial Factors Associated with Work-Related Injury in the U.S. Workforce. National Health Interview Survey, 2010. *J Occup Environ Med*. 2017. 59(10): e164-e171. PMID: 28991808

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