BIOGRAPHICAL SKETCH

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NAME: **Alberto J. Caban-Martinez**

eRA COMMONS USER NAME (credential, e.g., agency login): ACABAN-M

POSITION TITLE: **Professor (tenured), Public Health Sciences, Orthopaedics, and Physical Medicine and Rehabilitation**

EDUCATION/TRAINING *(Begin with baccalaureate or other initial professional education, such as nursing, include postdoctoral training and residency training if applicable. Add/delete rows as necessary.)*

INSTITUTION AND LOCATION	DEGREE *(if applicable)*	Completion Date MM/YYYY	FIELD OF STUDY
University of Miami, Miami, FL	B.S.	05/01	Computer Science
Nova Southeastern University, Davie, FL	M.P.H.	05/04	Public Health
Nova Southeastern University, Davie, FL	D.O.	05/11	Osteopathic Medicine
University of Miami, Miami, FL	Ph.D.	05/11	Epidemiology
Harvard School of Public Health, Boston, MA	Postdoc	08/13	Occupational Health

A. Personal Statement

I am an osteopathic physician-scientist and environmental/occupational epidemiologist (DO, PhD, MPH, CPH) with over a decade of experience leading research on environmental toxicants and chronic disease risk in high-exposure worker populations. My expertise lies in environmental/occupational epidemiology, biomonitoring, and translational cohort studies that evaluate exposure–disease pathways. I currently serve as a tenured Professor in the Departments of Public Health Sciences, Orthopaedics, and Physical Medicine & Rehabilitation at the University of Miami Miller School of Medicine, where I also serve as Associate Vice-Provost for Research Regulation, Integrity, Security and Evaluation, and as Vice Chair for Research in the Department of Public Health Sciences. As Deputy Director of the Sylvester Firefighter Cancer Initiative, I have led large-scale exposure studies of Florida firefighters, including annual follow-up of over 6,000 active and 620 retired personnel. These cohorts have enabled biomonitoring investigations into per- and polyfluoroalkyl substances (PFAS), characterizing their prevalence across job roles and associations with metabolic, immune, and endocrine dysfunction. I served on the International Agency for Research on Cancer (IARC) Monograph 132 Working Group that classified firefighting as carcinogenic to humans (Group 1), and currently serve on the National Academies of Sciences, Engineering, and Medicine's Committee on Clinical Follow-Up and Care for Those Impacted by the JP-5 Releases at Red Hill. My interest in marine biomedicine began through early work with the University of Miami's then Center for Oceans and Human Health (COHH), where I studied health impacts of *Karenia brevis* (red tide) and other harmful algal blooms (HABs). I now serve as a faculty collaborator at the Rosenstiel School and as Co-Principal Investigator with Dr. Kim Popendorf on *DISPEL to HABs*, a Florida Department of Health–funded initiative continuously supported since 2019 to examine disparities in blue-green algae exposure and long-term health risks. My contributions span cohort design, exposure assessment, and the development of community-engaged toxin screening strategies. Looking ahead, my membership in the Glassell Family Center for Marine Biomedicine will deepen this transdisciplinary research, leveraging cross-campus collaborations to explore environmental drivers of chronic disease.

Fire Investigator Comprehensive Occupational (FICO) Health and Safety Assessment

AWD-005730
Caban-Martinez/Popendorf (MPI)
07/01/2020 – 06/30/2026
Agency: Florida Department of Health
Diversity and Innovation in Screening and Prevention of Exposure over the Long-term (DISPEL) to HABs

State of Florida Appropriation #2369A
Kobetz (PI)
07/01/2025 – 06/30/2026
Firefighter Cancer Initiative at UM's Sylvester Comprehensive Cancer Center

AWD-CVH TSA-04
Caban-Martinez (MPI Contact)
09/01/2024 – 08/31/2025
Per- and PolyfluoroAlkyl Substaces (PFAS), HIV, and Cardiovascular Disease Risk

B. Positions, Scientific Appointments, and Honors

Positions and Scientific Appointments

2024 – Pres. Professor (tenured), Department of Public Health Sciences, University of Miami, Miller School of Medicine, Miami, FL
2022 – Pres. Associate Vice-Provost for Research Integrity, Regulatory Affairs and Assessment, University of Miami, Coral Gables, FL
2021 – 2022 Assistant Provost for Research Integrity, University of Miami, Coral Gables, FL
2021 – Pres. Vice Chair for Research, UM Department of Public Health Sciences, Miami, FL
2021 – Pres. Deputy Director, MD-MPH Program, University of Miami, Miller School of Medicine, Miami, FL
2021 – Pres. Fellow, Collegium Ramazzini, International Academy in Occupational and Environmental Health
2020 – 2024 Associate Professor (tenure-track), Department of Public Health Sciences, University of Miami, Miller School of Medicine, Miami, FL
2018 – 2024. Secretary, International Commission on Occupational Health, Scientific Committee on Construction Industry
2016 – Pres. Member, Cancer Control Program, Sylvester Comprehensive Cancer Center, University of Miami, Miller School of Medicine
2016 – 2017. Standing Member, Safety and Occupational Health Study Section, National Institute for Occupational Safety and Health, U.S. Department of Health and Human Services
2015 – 2017. Gulf War and Health Committee (Standing Member), Institute of Medicine
2014 – 2020 Assistant Professor (tenure-track), Department of Public Health Sciences, University of Miami, Miller School of Medicine, Miami, FL
2013 – 2016 Instructor, Orthopedic Surgery, Brigham and Women's Hospital and Harvard Medical School, Boston, MA
2013 – 2015. Research Associate, Environmental and Occupational Medicine & Epidemiology Program, Department of Environmental Health, Harvard University School of Public Health, Boston, MA
2011 – 2016. Musculoskeletal Disorders Committee, International Commission on Occupational Health
2011 – Pres. NIOSH Construction Sector Council Member
2011 – 2013 Postdoctoral Research Fellow, Environmental and Occupational Medicine & Epidemiology Program, Department of Environmental Health, Harvard University School of Public Health, Boston, MA
2008 – 2011. American College of Epidemiology, Board of Directors, Associate Director
2005 – Pres. American College Occupational & Environmental Medicine – Member
2005 – 2007 Delta Omega (Public Health Honor Society), Alpha Xi Chapter – President
2004 – Pres Society of Epidemiologic Research – Student Member (ID#: 34892)
2004 – 2005 Secretary, Minority Health Section, Florida Public Health Association
2003 – 2011 Research Associate, Department of Epidemiology & Public Health, University of Miami

School of Medicine, Miami, FL

Honors

2024 Faculty Excellence in Teaching Award, Department of Public Health Sciences, University of Miami, Miller School of Medicine
2024 Faculty of the Year Award, Public Health Student Association, University of Miami, Department of Public Health Sciences
2023 Faculty of the Year Award, Public Health Student Association, University of Miami, Department of Public Health Sciences
2023 Distinguished Mentorship Award, Delta Omega, the National Public Health Honor Society
2022 Inducted Fellow, Collegium Ramazzini, International Academy of Occupational and Environmental Health, Carpi, Italy
2022 Bullard-Sherwood Award Honorable Mention of the National Institute for Occupational Safety and Health
2022 Minority and Minority-Serving Institution Faculty Scholar (MMSIF) in Cancer Research Award, American Association of Cancer Research, 2022
2021 Senior Educator of the Year, Dean's Annual Faculty Award, University of Miami, Leonard M. Miller School of Medicine, Miami, Florida
2020 George Paff Teaching Award for Outstanding Public Health Educator, University of Miami, Leonard M. Miller School of Medicine, Miami, Florida
2019 Faculty of the Year, Department of Public Health Sciences, University of Miami, Leonard M. Miller School of Medicine, Miami, Florida
2019 Outstanding Mentor Award, MD-MPH Program, University of Miami, Leonard M. Miller School of Medicine, Miami, Florida
2018 Minority Faculty Scholar in Cancer Research Award, American Association for Cancer Research, Chicago, IL, 2018
2018 Outstanding Mentor Award, MD-MPH Program, University of Miami, Leonard M. Miller School of Medicine, Miami, Florida, 2018
2016 Faculty of the Year Award, University of Miami, Department of Public Health Sciences
2016 Faculty Advisor Award, Public Health Students Association, University of Miami, Department of Public Health Sciences – 2016
2013 Harvard School of Public Health, Postdoctoral Association, Leadership Award
2012 American Public Health Association, Latino Caucus - Outstanding New Public Health Professional
2010 American College of Occupational Medicine, Student/Resident Research Award
2009 Jim Keogh Scholarship Occupational Health and Safety American Public Health Association
2009 National Hispanic Science Network Summer Internship Award
2007 American College of Occupational Medicine, Student/Resident Research Award
2007 Florida American Academy of Osteopathy – Medical Student of the Year
2006 U.S. Department of Health & Human Services Medical School Scholarship

C. Contributions to Science

1. Environmental and Occupational Chemical Exposures in First Responders

Since joining the University of Miami, I have led a comprehensive program of research focused on identifying and mitigating hazardous chemical exposures among firefighters and other emergency responders. Recognizing that this workforce faces disproportionate cancer and chronic disease risks due to frequent encounters with combustion byproducts and synthetic chemicals, I founded and currently lead three active occupational cohorts of career and retired firefighters. These cohorts contribute annual survey data and biomonitoring information through digital platforms, including a mobile personal exposure record app and a state-supported firefighter cancer surveillance initiative. To improve environmental sampling methods in this setting, my team has evaluated the use of silicone wristbands as passive samplers for volatile and semi-volatile organic compounds in real-world fireground environments. We also developed and implemented experimental protocols to assess the thermal behavior and chemical off-gassing of contaminated turnout ensembles post-exposure. These studies have provided novel, real-time insights into firefighter exposure pathways and informed best practices for decontamination, exposure control, and risk communication in fire departments across the country.

a. Bakali U, Baum JLR, Louzado-Feliciano P, Killawala C, Santiago KM, Pauley JL, Dikici E, Schaefer Solle N, Kobetz EN, Bachas LG, Deo SK, **Caban-Martinez AJ**, Daunert S.Characterization of fire investigators' polyaromatic hydrocarbon exposures using silicone wristbands. Ecotoxicol Environ Saf. 2024 Jun 15;278:116349. doi: 10.1016/j.ecoenv.2024.116349. Epub 2024 May 6. PMID: 38714081
b. Kling HE, Koru-Sengul T, Schaefer Solle N, Louzado-Feliciano P, Lee DJ, Kobetz EN, **Caban-Martinez AJ**. Weight Status and Binge Drinking Among Male and Female Florida Firefighters. J Occup Environ Med. 2023 Aug 1;65(8):e565-e570. doi: 10.1097/JOM.0000000000002894. Epub 2023 May 28. PMID: 37253243
c. Testoff AC, Schaefer Solle N, Shafazand S, Louzado-Feliciano P, Lee DJ, Koru-Sengul T, Kobetz EN, **Caban-Martinez AJ**. Sleep Latency and Post-Traumatic Stress Disorder Among Retired Career Florida Firefighters: Evidence From the Advancing Epidemiology of Retired Firefighters Aging Longitudinally Cohort. J Occup Environ Med. 2022 Dec 1;64(12):e851 e856. doi: 10.1097/JOM.0000000000002722. Epub 2022 Oct 7. PMID: 36221257
d. Burgess JL, Fisher JM, Nematollahi A, Jung AM, Calkins MM, Graber JM, Grant CC, Beitel SC, Littau SR, Gulotta JJ, Wallentine DD, Hughes RJ, Popp C, Calafat AM, Botelho JC, Coleman AD, Schaefer-Solle N, Louzado-Feliciano P, Oduwole SO, **Caban-Martinez AJ**. Serum per- and polyfluoroalkyl substance concentrations in four municipal US fire departments. Am J Ind Med. 2023 May;66(5):411-423. doi: 10.1002/ajim.23413. Epub 2022 Jul 21. PMID: 35864570

2. Interventions to Improve Human Health in the Work Environment

A central aim of my research program is to design, implement, and evaluate workplace interventions that reduce exposure risks and promote long-term health and well-being across a wide range of occupational groups. I have adapted and leveraged existing technologies—such as wearable sensors for physical activity, GPS-based tracking systems, and heat stress monitors—to quantify modifiable risk factors in dynamic work environments. For example, my team developed and tested the Walking Meeting (WaM) intervention to encourage physical activity among sedentary office workers, showing measurable benefits in both health behavior and organizational culture. In parallel, I have contributed to the creation of validated tools to assess fatigue and thermal strain among construction workers, helping identify high-risk shifts and job tasks. These efforts have collectively improved our ability to monitor occupational exposures in real-time and develop targeted, scalable strategies to prevent injury, improve recovery, and reduce chronic disease burden in working populations.

a. Kling HE, Yang X, Messiah SE, Arheart KL, Brannan D, **Caban-Martinez AJ**. Opportunities for Increased Physical Activity in the Workplace: the Walking Meeting (WaM) Pilot Study, Miami, 2015. Prev Chronic Dis. 2016 Jun 23;13:E83. doi: 10.5888/pcd13.160111. PMID: 27337560.
b. **Caban-Martinez AJ,** Courtney TK, Chang WR, Lombardi DA, Huang YH, Brennan MJ, Perry MJ, Katz JN, Verma SK. Preventing slips and falls through leisure-time physical activity: findings from a study of limited-service restaurants. PLoS One. 2014 Oct 16;9(10):e110248. doi: 10.1371/journal.pone.0110248. PMID: 25329816.
c. Zhang M, Sparer EH, Murphy LA, Dennerlein JT, Fang D, Katz JN, **Caban-Martinez AJ**. Development and validation of a fatigue assessment scale for U.S. construction workers. Am J Ind Med. 2015 Feb;58(2):220-8. doi: 10.1002/ajim.22411. PMID: 25603944.
d. Arias OE, **Caban-Martinez AJ**, Umukoro PE, Okechukwu CA, Dennerlein JT. Physical activity levels at work and outside of work among commercial construction workers. J Occup Environ Med. 2015 Jan;57(1):73-8. doi: 10.1097/JOM.0000000000000303. PMID: 25563543; PMCID: PMC4530451.

3. Health Inequities in Vulnerable and Racial/Ethnic Minority Worker Populations

My work consistently integrates a focus on occupational health disparities, particularly among workers from underrepresented and vulnerable communities. Occupational risks are not uniformly distributed, and factors such as race, ethnicity, immigration status, geographic isolation, and employment instability can exacerbate exposure to workplace hazards and limit access to preventive health services. Through both primary data collection and analyses of large-scale datasets (e.g., NHIS, BRFSS), I have explored how these factors influence health outcomes, risk perception, and healthcare utilization. My work has shown, for example, that young unemployed adults have worse health profiles than their employed counterparts, and that rural workers in Latin America face unique occupational risks and barriers to care. These findings

have informed community health interventions, contributed to discussions on health equity in labor policy, and helped reframe occupational health as an issue of social justice.

a. **Caban-Martinez AJ**, Lee DJ, Goodman E, Davila EP, Fleming LE, LeBlanc WG, Arheart KL, McCollister KE, Christ SL, Zimmerman FJ, Muntaner C, Hollenbeck JA. Health indicators among unemployed and employed young adults. J Occup Environ Med. 2011 Feb;53(2):196-203. doi: 10.1097/JOM.0b013e318209915e. PMID: 21270653.
b. **Caban-Martinez AJ,** Halder GE, Tellechea L, Fajardo M, Kaltman J, Anand J, Prendes S, Penyak V, Koganti D, Chavoustie S, Fleming LE. Health status and behaviors among adults residing in rural Dominican Republic. Rural Remote Health. 2012;12:1956. Epub 2012 May 15.
c. Kachan D, Fleming LE, Christ S, Muennig P, Prado G, Tannenbaum SL, Yang X, **Caban-Martinez AJ**, Lee DJ. Health Status of Older US Workers and Nonworkers, National Health Interview Survey, 1997-2011. Prev Chronic Dis. 2015 Sep 24;12:E162. doi: 10.5888/pcd12.150040. PMID: 26402052; PMCID: PMC4584473.
d. **Caban-Martinez AJ**, Davila EP, Zhao W, Arheart K, Hooper MW, Byrne M, Messiah A, Dietz N, Huang Y, Fleming LE, Lee DJ. Disparities in hypertension control advice according to smoking status. Prev Med. 2010 Sep-Oct;51(3-4):302-6. doi: 10.1016/j.ypmed.2010.06.012. Epub 2010 Jun 19. PMID: 20600258; PMCID: PMC2939289.

4. **Environmental Exposures in Marine Environments and Harmful Algal Blooms (HABs)**

My early engagement with the University of Miami's Center for Oceans and Human Health (COHH) sparked my long-standing interest in the human health impacts of marine environmental exposures. I began this line of research by examining the respiratory and systemic effects of Karenia brevis (red tide) toxins in coastal communities. Building on this foundational work, I now serve as Co-Principal Investigator of the DISPEL to HABs study (Diversity and Innovation in Screening and Prevention of Exposure over the Long-term to Harmful Algal Blooms), a continuously funded initiative supported by the Florida Department of Health since 2019. Together with my collaborator Dr. Kim Popendorf, we lead a transdisciplinary team that integrates marine chemistry, epidemiology, exposure science, and community engagement to assess cyanobacterial toxin exposure and long-term health risks in environmentally and socioeconomically vulnerable populations. This work has led to the development of novel toxin screening strategies, informed state policy discussions, and contributed to national conversations on the health consequences of harmful algal bloom proliferation under climate change.

a. Gaston CJ, Royer HM, Leibensperger RJ, III, Maizel D, Lanpher KB, Solo-Gabriele H, Brand LE, Zhai RG, **Caban-Martinez AJ**, Popendorf KJ (2021). Filtration Efficiency of Air Conditioner Filters and Face Masks to Limit Exposure to Aerosolized Algal Toxins. Aerosol Air Qual. Res. 21, 210016. https://doi.org/10.4209/aaqr.210016
b. Testoff A., Popendorf K., Maizel D, Solle, NS and **Caban-Martinez AJ**., 2024, October. Domestic pet exposure and illness to blue-green algae: Evidence from the dispel to HABs cohort study. In American Public Health Association (APHA) 2024 Annual Meeting and Expo.

Complete List of Published Work:
https://pubmed.ncbi.nlm.nih.gov/?term=caban-martinez&sort=date