

Marilia Ramos, PhD

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Committed to advancing operational safety and efficiency, holding over ten years of experience in safety research, risk assessment, and human reliability across industries such as nuclear energy, oil and gas, and autonomous systems. Has successfully led high-impact projects for industry and regulatory bodies, resulting in over 45 peer-reviewed publications and presentations at international conferences. Deeply dedicated to technical excellence and enhancing safety across complex systems.

Fluent in English, French, and Portuguese. Strong analytical, organizational, and communication skills.

Core Competencies

Safety • Risk Assessment • Human Reliability Analysis • Research & Analytics • Complex Problem-Solving • Project Management • Partnerships

Professional Experience

Business and Research Development Officer | Mechanical and Industrial Engineering Department (MIE), University of Toronto, Toronto *August 2024 – Present*

- Define, advise, and implement processes to increase funding and private sector engagement for a department with over 60 professors and 450 graduate students.
- Create sector-specific growth strategies and generate monthly statistical reports on business and research development progress for leadership decision-making.
- Lead meetings and presentations with potential clients, preparing and delivering business cases for customer-focused solutions and collaborations.

Research Scientist | The B. John Garrick Institute for the Risk Sciences (GIRS), University of California Los Angeles (UCLA), Los Angeles *November 2019 – August 2024*

- Led research and promoted the Institute's capabilities in risk assessment. Secured over \$2.5 million in funding from competitive grants and industry stakeholders, fostering lasting collaborations with institutions such as the Electric Power Research Institute (EPRI), U.S. Nuclear Regulatory Commission (NRC), Idaho National Laboratory (INL), Institute for Energy Technology (IFE), and SINTEF.
- Directed multiple industry-relevant safety projects, developing and applying advanced methodologies for assessing and ensuring safety, building on the expertise in disciplines such as human reliability analysis (HRA) and probabilistic risk assessment (PRA), and techniques such as fault tree analysis (FTA), event sequence diagrams and event trees (ESDs, ETs), Bayesian networks (BNs), task analysis, human factors, hazard identification and modeling, risk management. Key projects include:

- Human Reliability Analysis Methodology for *Japanese Nuclear Regulatory Authority (2019-2023)*: Developed and tailored an HRA method based on PWR reactor operations. Areas of development included digital control rooms, seismic events, and inspection activities.
- Commentaries on ASME/ANS PRA Standards for *Japan's Nuclear Risk Research Center (2020)*: Contributed to the HRA section of the report, which provides clarification on ASME/ANS standards for PRA models in nuclear power plants, to inform the development of Japan's PRA Standards by the Atomic Energy Society of Japan (AESJ) and assisting Japanese Electric Power Companies in training, peer reviews, and model development.
- Human Reliability Analysis for *Chevron (2018-2021)*: Analyzed incident data, performed technical visitations to midstream and downstream facilities, interviewed operators and managers, and tailored an HRA methodology for oil and gas operations.
- Risk Assessment for and hazard identification applied to the transportation sector: Conducted hazard identification and operational safety analysis of automated vehicles fleets for the U.S. *National Highway Traffic Safety Administration (NHTSA) (2021-2023)*, performed root cause analysis and derived safety recommendations for the *Pacific Gas and Electric company (PG&E) (2019-2021)*.
- Wildfire Evacuation Decision Support Tool for *Pacific Gas & Electric (PGE) (2021-2022)*: Modeled and integrated human decision-making processes into a probabilistic, predictive egress model for communities under a fire threat as part of a larger team developing a wildfire probabilistic risk assessment model.
- Assessment of the impact of automated/autonomous functions on human performance and human reliability, including a range of industries, such as nuclear, oil and gas, and the maritime sector.
- Managed research teams (graduate students, postdocs, engineers) on deliverable-driven projects, ensuring timeliness, quality, and budget management. High commitment to quality and ability to identify additional venues for collaboration led to renewed contracts, expansion of projects to new sectors and applications, and raised interest from additional stakeholders.
- Delivered courses on Human Reliability Analysis over three terms for the online Master of Engineering program at UCLA, ranked number one online engineering program.
- Delivered impactful presentations at key safety conferences, including:
 - International Conference on Probabilistic Safety Assessment and Analysis (PSA).
 - International Conference on Probabilistic Safety Assessment and Management (PSAM)
 - European Safety and Reliability Conference (ESREL)
 - Reliability and Maintainability Symposium (RAMS)
 - Global Congress on Process Safety by CCPS
- Authored/co-authored 15+ technical reports and 45+ peer-reviewed articles. Work has been referenced in nearly 800 studies, contributing to advancements in risk assessment across multiple industries. A complete list can be seen at Google Scholar [\[link\]](#).

Postdoctoral Research Fellow | Department of Marine Technology, Norwegian University of Science and Technology (NTNU), Norway *May 2017 – June 2019*

- Initiated and led the International Workshop on Autonomous Systems Safety (IWASS), now in its 6th edition. IWASS is a yearly event fostering dialogue on AI, automation, and risk management across industries, with participation from over 20 organizations annually.
- Researched risk in autonomous surface vessel operations and remote control rooms, producing influential work cited in over 300 publications.

Risk Analyst | Center for Risk Analysis and Environmental Modeling (CEERMA), Federal University of Pernambuco (UFPE), Brazil *February 2010 – April 2017*

- Evaluated compliance of over five oil refineries and pipeline projects for Petrobras with Brazilian safety regulations. Assessed different lifecycle phases through quantitative risk analysis as part of a multi-disciplinary research team:
 - Closely interacted with refineries' operators, engineers, and managers. Performed technical visitations to refineries' installations to analyze the plant and operations in loco.
 - Analyzed P&ID and PFD documents and HAZOP analyses, performed preliminary hazard assessment, and calculated consequences and risk estimates for loss of containment (LOC) events through Gexcon EFFECTS and RiskCurves software.
 - Developed risk reduction recommendations. Co-authored six risk analysis reports evaluating refineries' operations for the Environmental Agency.
- Developed an HRA methodology tailored for refinery operations, incorporating data obtained through accidents investigations, elicitation of expert opinion, and technical visits.

Education

Ph.D. in Chemical Engineering Federal University of Pernambuco (UFPE), Brazil	2017
Visiting Graduate Researcher at the University of California, Los Angeles (UCLA)	2014-2015
M.Sc. in Chemical Engineering Federal University of Pernambuco (UFPE), Brazil	2012
B.Sc. in Chemical Engineering Federal University of Pernambuco (UFPE), Brazil	2009

Achievements and awards

Human Resources Training Program Award, Brazilian National Agency of Petroleum, Natural Gas and Biofuels	2010 – 2017
Sciences without Borders Award, Government of Brazil	2014 – 2015
National Council for Scientific and Technological Development Award, Government of Brazil	2007 – 2010

Relevant Volunteer Roles

Member | West Hollywood Bicycle Coalition (WeHoByCo)

2022 - 2023

Developed and implemented strategies for promoting the organization's activities, increased partnerships with local businesses, and promoted bike-oriented education and advocacy. Chair of the social media committee April 2023 – Aug 2023.

Advisory Board Member | Brazilian Vegetarian Society (SVB)

2015 - 2019

Elected national advisory board member. Liaised with local government members, supported the organization of local and national events, and developed strategies for increasing Society's impact and growth.