

Pedro Nascimento de Lima, PhD

Full Engineer, RAND Corporation

Professor, RAND School of Public Policy

www.pedrodelima.com

SUMMARY

Pedro Nascimento de Lima is a RAND researcher and a professor at the RAND School of Public Policy, specializing in computational methods to support decision-making.

His research draws from a broad range of computational modeling paradigms, including statistical, mechanistic (agent-based, differential equations, microsimulation), and machine learning-based to inform consequential policy decisions.

Nascimento de Lima's substantive research contributions span multiple policy domains. He was a key developer of the modeling framework underlying RAND's COVID-19 State Policy Tool - RAND's most-viewed research product of 2020. In healthcare policy, his work on cancer screening projected requirements for cost-effective blood-based screening tests and stress-tested cancer screening strategies that are followed by millions of Americans. His work also explored policies that could address America's major wealth disparities in the United States.

He has also consistently contributed open-source computational tools to the research community and has a strong commitment to high-quality reproducible research.

Nascimento de Lima earned his Ph.D. in Policy Analysis from the RAND School of Public Policy. He also holds a B.S. and an M.S. in Industrial Engineering (Engenharia de Produção) from Universidade do Vale do Rio dos Sinos in Rio Grande do Sul, Brazil.

EDUCATION

RAND School of Public Policy, *Santa Monica, CA*

Ph.D. in Policy Analysis *Oct 2022*

M.Phil. in Policy Analysis *Dec 2020*

UNISINOS University, *São Leopoldo, Brazil*

M.S. in Industrial Engineering *Feb 2018*

B.S. in Industrial Engineering *Mar 2016*

PROFESSIONAL EXPERIENCE

RAND Corporation

Arlington, VA

Full Engineer

Jun. 2022 - present

- Leads and contributes to a broad stream of research projects sponsored by organizations including the National Institutes of Health (NIH), the National Science Foundation (NSF) and foundations.

Associate Engineer

Oct. 2022 - Jun. 2025

- Co-Investigator on multiple NIH and NSF grants, leading to 10+ publications.
- Led multiple publications on the cost-effectiveness of blood-based biomarkers for colorectal cancer screening.

Assistant Policy Researcher

Sep. 2019 - Oct. 2022

- Developed the R package containing the epidemiological model and the analytic data pipeline underlying [RAND's COVID-19 State Policy Tool](#). The tool became RAND's [most popular](#) research of 2020.
- Developed the famexplorer R package - an [R/Shiny](#)-based visualization web app allowing researchers to create interactive visualization tools for their microsimulation analyses.

Argonne National Laboratory

Lemont, IL

Visiting Graduate Student - Decision and Infrastructure Sciences Division

Dec. 2020 - Dec 2022

- Performed large-scale computational experiments to stress-test COVID-19 mitigation strategies.

University of Southern California

Los Angeles, CA

Adjunct Instructor - USC Sol Price School of Public Policy

Aug. 2021 - Dec. 2021

- Taught Essential Statistics at USC Sol Price School of Public Policy.

UNISINOS University

São Leopoldo, Brazil

Lecturer - Polytechnic School

Feb. 2018 - Jun. 2019

- Taught the following disciplines in undergraduate and MBA classes: Operations Research - Linear Programming; Simulation Modeling (Discrete Event Simulation); System Dynamics Simulation; Operations Management; Information Systems Management.
- Advised undergraduate and MBA students in their capstone research projects. One received the Best Brazilian Industrial Engineering Undergraduate Dissertation Award from ABEPRO (2019).

Research Assistant - GMAP — UNISINOS Research Group

Feb. 2016 - Feb. 2018

- Developed a simulation package in R for cost-benefit analysis of organizational safety and health initiatives.
- Developed algorithms for exploratory modeling and analysis of system dynamics models in R.

Undergraduate Research Intern - GMAP — UNISINOS Research Group

Jun. 2013 - Feb. 2016

- Developed a competitive dynamics model of iron ore producers, accounting for regional comparative advantages and substitution dynamics among different iron ore types.
- Developed a VBA tool to run and summarize simulation results.
- Conducted Business Process Modeling of productivity and innovation programs for government agencies in Southern Brazil (AGDI and SEBRAE/RS).

Rede Industrial

Presidente Lucena, Brazil

Chief Analyst

Jan. 2012 - Jun. 2013

- Oversaw SIGMA's software development and support teams.
- Conceptualized new features included in SIGMA's 2012 release, including the SIGMA's integration module, Sigma SMS module and SIGMA's Android App.

Business Analyst

Jan. 2009 - Jan. 2012

- Conducted software requirements analysis for internal and external clients.
- Developed SQL queries for database reporting and bug troubleshooting.
- Streamlined software development processes implementing and customizing Jira workflows.

RESEARCH

Public-facing research products (peer-reviewed papers, RAND reports, pre-prints, conference papers, and software).

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- [2] Griswold, M., Griffin, B. A., Rubinstein, M., Liu, M., Schuler, M., Stone, E., **Nascimento de Lima**, P., Stein, B. D., & Stuart, E. A. (2025). Assessing Bias and Precision in State Policy Evaluations: A Comparative Analysis of Time-Varying Estimators Using Policy Simulations [arXiv:2503.20882 [stat]]. <https://doi.org/10.48550/arXiv.2503.20882>
- [3] Harlass, M., Knudsen, A. B., Nieboer, D., van Duuren, L. A., Kuntz, K. M., Rutter, C. M., **Nascimento de Lima**, P., Collier, N., Ozik, J., Hahn, A. I., Alarid-Escudero, F., Zauber, A. G., Inadomi, J. M., Meester, R. G. S., & Lansdorp Vogelaar, I. (2025). Benefits of colorectal cancer screening using FIT with varying positivity thresholds by age and sex. *JNCI: Journal of the National Cancer Institute*, djaf149. <https://doi.org/10.1093/jnci/djaf149>
- [4] Hotton, A. L., **Nascimento de Lima**, P., Fadikar, A., Collier, N. T., Khanna, A. S., Motley, D. N., Tatara, E., Rimer, S., Almirol, E., Pollack, H. A., Schneider, J. A., Lempert, R. J., & Ozik, J. (2025). Incorporating social determinants of health into agent-based models of HIV transmission: Methodological challenges and future directions [Publisher: Frontiers]. *Frontiers in Epidemiology*, 5. <https://doi.org/10.3389/fepid.2025.1533119>
- [5] Issaka, R. B., Matrajt, L., **Nascimento de Lima**, P., & Rutter, C. M. (2025). Modeled Cost-Effectiveness of a Rideshare Program to Facilitate Colonoscopy Completion. *JAMA Network Open*, 8(9), e2530515. <https://doi.org/10.1001/jamanetworkopen.2025.30515>
- [6] Mann, S., **Nascimento de Lima**, P., Eagan, J., Ulyte, A., & Griffin, B. A. (2025). Potential spillover effects on diagnostic delay for cancer during the NHS-Galleri trial: A quasi-experimental difference-in-differences study [ISSN: 3067-2007 Pages: 2024.11.06.24316784]. <https://doi.org/10.1101/2024.11.06.24316784>
- [7] **Nascimento de Lima**, P., Bartholomew, L., May, F. P., Coronado, G. D., & Rutter, C. M. (2025). The triple-effect of colorectal cancer screening: Reducing deaths, government spending and mortality disparities. *JNCI: Journal of the National Cancer Institute*, djaf202. <https://doi.org/10.1093/jnci/djaf202>
- [8] **Nascimento de Lima**, P., Dolan, F. C., McDonald, T., Patel, K. V., Boudreaux, B., Garber, C., Dion, L., Mann, S., & Welburn, J. W. (2025). *COMPASS: A Framework for Navigating Systemic Risks* (tech. rep.). <https://doi.org/10.7249/WRA3888-1>

- [9] **Nascimento de Lima**, P., Maerzluf, C., Ozik, J., Collier, N., & Rutter, C. M. (2025). Stress-testing US colorectal cancer screening guidelines: Decennial colonoscopy from age 45 is robust to natural history uncertainty and colonoscopy sensitivity assumptions [Publisher: SAGE Publications Inc STM]. *Medical Decision Making*, 0272989X251334373. <https://doi.org/10.1177/0272989X251334373>
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Testing, Cases, Hospitalizations, Deaths, and the Ability to Practice Physical Distancing. Retrieved April 10, 2025, from <https://www.rand.org/pubs/tools/TLA1080-1-v2.html>

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- [53] **Nascimento de Lima**, P., Calderaro, D. R., Goldmeyer, D. B., Rodrigues, L. H., & Morandi, M. I. W. M. (2015). Minimizando custos de manutenção: Uma alternativa para o nivelamento de recursos de um cronograma de manutenção preventiva utilizando programação linear e a engenharia de confiabilidade. *XXXV - Encontro Nacional de Engenharia de Produção - ENEGEP*, 35.
- [54] **Nascimento de Lima**, P., & Tegner, M. G. (2015). O que melhora a operação do serviço de uma pequena empresa? ferramentas para a melhoria de operações de serviço e aplicação em seis empresas de são leopoldo - rs no contexto do projeto negócio a negócio etapa 3. *XXXV - Encontro Nacional de Engenharia de Produção - ENEGEP*, 35.
- [55] **Nascimento de Lima**, P., Tegner, M. G., Corcini Neto, S. L. H., & Veit, D. R. (2015). Lean office na prática: Proposição e aplicação de método à luz do gerenciamento de processos. *XXXV - Encontro Nacional de Engenharia de Produção - ENEGEP*, 35.
- [56] **Nascimento de Lima**, P., Vieira, D. C., Tegner, M. G., Heck, I., & Luz, F. R. (2015). Ergonomia e segurança no setor aeronáutico: A contribuição do diagnóstico participativo de riscos em um ambiente de manutenção de aeronaves. *XXXV - Encontro Nacional de Engenharia de Produção - ENEGEP*, 35.

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DISTINCTIONS AND AWARDS

RAND Silver Medal Award

RAND Corporation, 2021

Alongside Lawrence Baker, Raffaele Vardavas, Alyson Youngblood, and Heather McCracken, for developing RAND's COVID-19 State policy tool.

Innovation Spotlight Award

RAND Corporation, 2020

For developing the FAM Explorer R package - An interactive visualization tool for FAM-based dynamic microsimulation models.

Best Brazilian Industrial Engineering Undergrad Dissertation (Advisor)

ABEPRO, 2019

Title: Process Mining and SLA violation prediction at a multinational software company. Student: Eduardo Mazzuco.

Best Brazilian Industrial Engineering Masters Dissertation (Author)

ABEPRO, 2018

Title: Strategic Decision Making Under Deep Uncertainty in the 3D Printing Industry: A Robust Decision Making Analysis. ([full text](#)).

Best Brazilian Industrial Engineering Undergrad Dissertation (Author)

ABEPRO, 2016

Title: Problem Structuring Methods: A Review of Methods to address Complex Problems. ([full text](#)).

Inovapps 2015 Prize

Brazilian Communications Ministry, 2015

For proposing and developing the open-source Avalia Brasil Android App. Collaborators: Nataniel Schling and Klaus Klein. ([github repository](#))

RESEARCH FUNDING

Grants from NIH and NSF. Does not include projects funded by contracts or philanthropy.

Health and Financial Costs of Unequal Care: Colorectal Cancer as a Case Study

National Institute on Minority Health and Health Disparities, R01MD017599

2023 - 2028

Role: RAND Subaward PI, Co-Investigator

Comparative Modeling of Effective Policies for Colorectal Cancer Control

National Cancer Institute, U01CA253913

2020 - 2025

Role: RAND Subaward PI, Co-Investigator

Computational modeling to evaluate socio-structural interventions for HIV and substance use

National Institute on Drug Abuse, Ro1DA057350 *2023 - 2028*

Role: Co-Investigator

PIPP Phase I: Robust Epidemic Surveillance and Modeling (RESUME)

National Science Foundation, Directorate for Engineering, 2200234 *2022 - 2025*

Role: Co-Investigator

Modeling the Coupled Dynamics of COVID-19 Transmission and Protective Behaviors

National Institute of Allergy and Infectious Diseases, Ro1AI160240 *2021 - 2026*

Role: Co-Investigator

Assessing the long-term impacts of the COVID-19 pandemic on disparities in cancer screening and follow-up

National Cancer Institute, Ro1CA265020 *2021 - 2026*

Role: Co-Investigator

Center to Advance Research Excellence (OPTIC)

National Institute on Drug Abuse, P50DA046351 *2018 - 2028*

Role: Co-Investigator

Modeling the Coupled Dynamics of Influenza Transmission and Vaccination Behavior

National Institute of Allergy and Infectious Diseases, Ro1AI118705 *2016 - 2022*

Role: Co-Investigator

SELECT TALKS AND PRESENTATIONS

Impacts of uncertainty in funding for HIV elimination in Chicago

DMDU 2025 *Nov 2025*

Navigating Uncertain AI Futures

DMDU 2025 *Nov 2025*

Optimizing Metagenomic Surveillance Networks

MIDAS 2025 (Lightning talk) *Nov 2025*

A Primer on DMDU Methods for technologists

RAND CAST Retreat

Oct 2025

Demonstrating Robustness in Health Policy Choices

DMDU in Health Symposium

Nov 2024

Engineering Health Policy

Healthcare Division Brownbag

Oct 2024

The Value of Environmental Surveillance for Pandemic Response

MIDAS Webinar

Jul 2024

The Value of Environmental Surveillance for Pandemic Response

WBE Webinar

Jul 2024

Characteristics of a cost-effective blood test for colorectal cancer screening

DDW

May 2024

Decision Making under Deep Uncertainty in Health Policy

DMDU in Health SIG Meeting

May 2024

Robustness of colorectal cancer screening: A Stress test of US colonoscopy screening guidelines

INFORMS Annual Meeting

Oct 2023

Cost-effectiveness threshold analysis of blood-based tests for colorectal cancer screening

AGA meeting

Sept 2023

Informing Health Policy Under Uncertainty: Crafting good decisions without precise predictions

Cancer Policy Affinity Group Seminar, Fred Hutch Cancer Center

Jun 2023

High-Performance Computing with EMEWS and Swift-T, with Jonathan Ozik

RAND SCAN Brownbag

Feb 2023

Deep Uncertainty 101 For Infectious Disease Modelers

MIDAS Webinar

Jan 2023

Reopening California: Seeking Robust, Non-Dominated COVID-19 Exit Strategies

MIDAS / CDC call

Apr 2021

PROFESSIONAL AFFILIATIONS AND ACTIVITIES

Society for Decision Making Under Deep Uncertainty (DMDU)

DMDU in Health Special Interest Group	<i>2024 - present</i>
Membership Chair	<i>2023 - present</i>
Communications and Outreach Chair	<i>2019 - 2020</i>
Member, Communications Team Volunteer	<i>2017 - 2018</i>
MIDAS Network	
MIDAS Student Committee volunteer	<i>2020 - 2022</i>
NUGEEP - Rio Grande do Sul State Student Chapter - ABEPRO	
President	<i>2015 - 2016</i>

TECHNICAL SKILLS

Programming	R and python
High-Performance Computing	slurm, Swift/T, EMEWS with R
Web Apps Development	R's Shiny Package
Relational Databases	mySQL, MS SQL Server
Modeling and Simulation	iThink, Arena, deSolve R package
Other Tools	Tableau, Wordpress, Git
Github profile	github.com/pedroliman
Personal website	www.pedrodelima.com