

CURRICULUM VITAE

MARY REGINA BOLAND, MA, MPHIL, PhD, FAMIA

(Last updated August 08, 2025)

PERSONAL

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EDUCATION

2013-2017	Columbia University New York, NY	Ph.D. in Biomedical Informatics
	Dissertation: "Systems-Level Approach to Understand the Seasonal Factors of Early Development with Clinical and Pharmacological Applications"	
	Mentor: Dr. Nicholas P Tatonetti, Department of Biomedical Informatics	
	Committee Members: Dr. Nicholas P Tatonetti, Dr. Dennis Vitkup, Dr. George Hripcsak, Dr. Andrew Gelman, Dr. Pierre Gentine	
2013-2016	Columbia University New York, NY	M.Phil. in Biomedical Informatics
	Mentor: Dr. Nicholas P Tatonetti, Department of Biomedical Informatics	
2010-2012	Columbia University New York, NY	M.A. in Biomedical Informatics
	Dissertation: "Associating Periodontal Diseases with Medical Conditions by Linking Medical and Dental Records"	
	Mentors: Dr. Chunhua Weng and Dr. George Hripcsak, Department of Biomedical Informatics	
2006 - 2010	Saint Vincent College Latrobe, Pennsylvania	B.S. in Bioinformatics
	Dissertation: "Functional Annotation of Putatively Conserved Non-Coding Regions in <i>B. floridae</i> "	
	Mentor: Dr. Michael L Sierk, Department of Chemistry	
	College Scholar of the Honors Program, Graduated <i>Magna cum laude</i>	

POSTDOCTORAL TRAINING

none

LICENSURE AND CERTIFICATION

none

ACADEMIC APPOINTMENTS - PRIMARY

2017-2023	Assistant Professor of Informatics (tenure-track) Perelman School of Medicine University of Pennsylvania, Philadelphia, Pennsylvania
2017-2023	Senior Fellow, Institute for Biomedical Informatics (IBI) Member, Genomics and Computational Biology (GCB) Graduate Group Member, Graduate Group in Epidemiology and Biostatistics (GGEB)
2020-2023	Associate Director, Master of Biomedical Informatics (BMIN) Program, University of Pennsylvania
2023-present	Assistant Professor of Mathematics, Data Science (tenure-track) Boyer School of Natural Sciences, Mathematics and Computing, Saint Vincent College, Latrobe, Pennsylvania

ACADEMIC APPOINTMENTS - SECONDARY

2017-2023	Member (Adjunct Assistant Professor), Department of Biomedical and Health Informatics The Children's Hospital of Philadelphia, Pennsylvania
2017-2023	Affiliate Member, Center of Excellence in Environmental Toxicology (CEET), Perelman School of Medicine University of Pennsylvania, Philadelphia, Pennsylvania
2023-present	Assistant Professor of Marketing, Analytics and Global Commerce, McKenna School of Business, Saint Vincent College, Latrobe, Pennsylvania
2023-present	Affiliate Researcher, Department of Obstetrics & Gynecology, Perelman School of Medicine University of Pennsylvania, Philadelphia, Pennsylvania

MAJOR COMMITTEE ASSIGNMENTS AND CONSULTATIONS

International, National and Regional

International

2020	Scientific Program Committee, IEEE International Conference on Health Informatics (IEEE ICHI), Oldenburg, Germany
2022	Scientific Program Committee, Artificial Intelligence in Medicine (AIME), Halifax, Canada
2022	Scientific Program Committee, AINurse22: 1st Workshop on Artificial Intelligence in Nursing: Advances, Methods and Path Forward, Halifax, Canada
2022	Doctoral Consortium Committee, Artificial Intelligence in Medicine (AIME), Halifax, Canada
2022	Grant Reviewer, 'Artificial Intelligence Applications in Health and Medicine' study section, Israeli Ministry of Innovation, Science and Technology, Government of Israel , Aug-Oct 2022
2022	Grant Reviewer, United Kingdom Research Institute (UKRI) Medical Research Council (MRC), United Kingdom , October 2022
2023	Scientific Program Committee, IEEE International Conference on Bioinformatics and Biomedicine Informatics (IEEE BIBM), Istanbul, Turkey . December 5-8, 2023.

National

2015-2016	Co-Manager, Journal of American Medical Informatics Association Journal Club, American Medical Informatics Association, Washington DC, USA
2015	Year-in-Review Work Group, American Medical Informatics Association, San Francisco, CA, USA
2017	Scientific Program Committee, AMIA Annual Conference (AMIA 2017), American Medical Informatics Association, Washington DC, USA
2017	Scientific Program Committee, AMIA Translational Bioinformatics Summit (AMIA Informatics Summit), American Medical Informatics Association, San Francisco, CA, USA
2018	Scientific Program Committee, IEEE International Conference on Health Informatics (IEEE ICHI), New York, NY USA
2018	Scientific Program Committee, Pervasive Health and Personalized Medicine Crossroads: Challenges and Opportunities Workshop (Pervasive PerMed), New York, NY USA
2018	Scientific Program Committee, AMIA Informatics Summit, American Medical Informatics Association, San Francisco, CA, USA
2018	Scientific Program Committee, AMIA Annual Conference (AMIA 2018), American Medical Informatics Association, San Francisco, CA, USA
2018	Grant Reviewer, “TRISH Biomedical Research Advances for Space Health”, 800,000 award for 2-year period, National Aeronautics and Space Administration (NASA) Translational Research Institute for Space Health (TRISH)
2018-2023	Awards Committee, American Medical Informatics Association
2018-2023	Community Leader, American Society for Clinical Pharmacology & Therapeutics (ASCPT)
2019	Scientific Program Committee, AMIA Informatics Summit 2019, American Medical Informatics Association, San Francisco, CA, USA
2019	Scientific Program Committee, AMIA Annual Conference (AMIA 2019), American Medical Informatics Association, Washington DC, USA
2019	Session Chair, Penn Conference on Big Data in Population Health Sciences Conference Program Committee, Philadelphia, PA
2019	Reviewer, High-School Informatics Program, AMIA Annual Conference (AMIA 2019), American Medical Informatics Association, Washington DC, USA
2019	Scientific Program Committee, 1 st International Symposium on Mathematical and Computational Oncology, Lake Tahoe, Nevada, USA
2020	Scientific Program Committee, AMIA Informatics Summit 2020, American Medical Informatics Association, Houston, TX, USA
2020	Doctoral Consortium Chair, Artificial Intelligence in Medicine (AIME), Minneapolis, Minnesota
2020	Scientific Program Committee, 2nd International Symposium on Mathematical and Computational Oncology, San Diego, CA, USA
2021	Grant Reviewer, Behavioral Genetics and Epidemiology Study Section (BGES), National Institutes of Health, Meeting dates 03/10/2021-03/11/2021
2022	Vice Chair of Data Science, AMIA Informatics Summit 2022, American Medical Informatics Association, Chicago, IL, USA
2022	Grant Reviewer, Post COVID Conditions Collaborative Merit Aware Study Section, Veterans Affairs Office of Research and Development, Meeting dates June 2022
2022	Scientific Program Committee, IEEE International Conference on Bioinformatics and Biomedicine (BIBM), December 6-8, 2022, Las Vegas, NV, USA (https://ieebibm.org/BIBM2022/)
2023	Scientific Program Committee, AMIA Informatics Summit 2023, American Medical Informatics Association, Seattle, WA, USA
2025	Grant Reviewer, Ad hoc, National Institutes of Health (NIH) Eunice Kennedy Shriver National Institute of Child Health and Human Development (NICHD), ZHD1 DSR-L The Road to Prevention of Stillbirth – Clinical Research Center (UG1)

- 2025 Scientific Program Committee, AMIA Informatics Summit 2025, American Medical Informatics Association, Pittsburgh, PA, USA
- 2025 Scientific Program Committee, AMIA Annual Meeting 2025, American Medical Informatics Association, Atlanta, GA, USA

Institutional

- 2010-2012 Departmental Representative, Graduate Student Advisory Council, Graduate School of Arts and Sciences, Columbia University
- 2011-2012 President's and Provost's Student Event Fund Committee, Columbia University
- 2017-2018 Courtesy seminars in the Departments of Biostatistics, Epidemiology & Informatics, Center for Clinical Epidemiology & Biostatistics, Center for Excellence in Environmental Toxicology, University of Pennsylvania
- 2017-2018 Courtesy seminars in the Center for Pediatric Clinical Effectiveness & Policy Lab, Children's Hospital of Philadelphia
- 2018-2023 Epidemiology Academic Advising Committee, Graduate Group in Epidemiology & Biostatistics, University of Pennsylvania
- 2017-2023 Research Day Committee, Department of Biostatistics, Epidemiology & Informatics, University of Pennsylvania
- 2018-2023 Departmental Recruitment Committee, Department of Biostatistics, Epidemiology & Informatics, University of Pennsylvania
- 2018-2023 Internal Advisory Board for Graduate Group in Informatics, Institute of Biomedical Informatics, University of Pennsylvania
- 2018-2023 Masters in Informatics Admissions Committee, Institute of Biomedical Informatics, University of Pennsylvania
- 2018-2023 Executive Committee for Masters in Informatics (MBMI) Program, Institute of Biomedical Informatics, University of Pennsylvania
- 2018-2023 Chair, Advising and Curriculum Committee for Masters in Informatics (MBMI) Program, Institute of Biomedical Informatics, University of Pennsylvania
- 2019-2023 Awards Committee, Department of Biostatistics, Epidemiology & Informatics, University of Pennsylvania
- 2019-2023 Exam Committee, Graduate Group in Epidemiology & Biostatistics, University of Pennsylvania
- 2019 Grant Reviewer, "CRIC Opportunity Pool Program applications", University of Pennsylvania
- 2019-2023 Senator, Medical Faculty Senate Steering Committee, Representative of the Basic Sciences, Perelman School of Medicine, University of Pennsylvania (elected position)
- 2020-2023 Senate Nominating Committee, University-Wide Senate Committee, University of Pennsylvania
- 2020-2023 At-Large Member, Senate Executive Committee, University-Wide Senate Committee, University of Pennsylvania
- 2020-2023 Founding Member, University of Pennsylvania Equity and Diversity Initiative (EDI), Graduate Group in Genomics & Computational Biology (GCB), University of Pennsylvania
- 2020-2023 Associate Director, Masters in Biomedical Informatics Program, University of Pennsylvania
- 2021-2022 Co-Chair, Research Day Committee, Department of Biostatistics, Epidemiology & Informatics, University of Pennsylvania
- 2021-2023 Recruitment and Outreach Committee, PREVAIL, Biomedical Graduate Studies (BGS), University of Pennsylvania
- 2021-2023 Recruitment Ambassador to promote Equity Inclusion and Diversity, IDEAL, Perelman School of Medicine, University of Pennsylvania
- 2021-2023 Secretary, Medical Faculty Senate Steering Committee, Representative of the Basic Sciences, Perelman School of Medicine, University of Pennsylvania (elected position)
- 2021-2023 Professionalism Committee, Department of Biostatistics, Epidemiology & Informatics, University of Pennsylvania

2021-2023	Award Committee, Department of Biostatistics, Epidemiology & Informatics, University of Pennsylvania
2022	Search Committee for a Vice Chair of Faculty Professional Development, Department of Biostatistics, Epidemiology & Informatics, University of Pennsylvania
2023	Faculty Director, Diversity Equity and Inclusion Book Club, Masters of Biomedical Informatics Program, Perelman School of Medicine, University of Pennsylvania
2024	Member, Mission Integration Committee, Saint Vincent College, Latrobe
2025	Search Committee Member, Computer Science Faculty Position, Saint Vincent College, Latrobe
2025	Search Committee Member, Skills and Simulations Lab Position, Saint Vincent College, Latrobe
2025	Threshold Lecture Series Committee, Saint Vincent College, Latrobe
2025	Wimmer Exam General Knowledge Committee, Saint Vincent College, Latrobe

MEMBERSHIPS IN PROFESSIONAL SOCIETIES

2010-2012	American Guild of Organists, New York City Chapter (AGO), <i>2 years</i>
2008-2020	Institute of Electrical and Electronics Engineers (IEEE) Women in Engineering, <i>11 years</i>
2008-2019	IEEE Engineering in Medicine and Biology, <i>11 years</i>
2010-2018	The New York Academy of Sciences (NYAS), <i>8 years</i>
2011-2020	American Association for the Advancement of Science (AAAS), <i>9 years</i>
2015-2020	American Society for Clinical Pharmacology & Therapeutics, <i>5 years</i>
2016-2020	American Society of Human Genetics (ASHG), <i>4 years</i>
2017-2020	The European Society of Human Genetics (ESHG), <i>3 years</i>
2017-2020	American Geophysical Union (AGU), <i>3 years</i>
2018-2020	American Society for Reproductive Medicine (ASRM), <i>2 years</i>
2010-present	American Medical Informatics Association (AMIA), <i>15 years</i>

EDITOR / EDITORIAL BOARDS

2015-2017	Student Editorial Board for <u>Journal of American Medical Informatics Association (JAMIA)</u>
2018-present	Managing Editor for <u>BioData Mining</u>
2018-present	Editorial Board for <u>Journal of American Medical Informatics Association Open (JAMIA Open)</u>
2020-2022	Editorial Board for <u>Journal of American Medical Informatics Association (JAMIA)</u>
2021-2022	Associate Editor for <u>Journal of American Medical Informatics Association (JAMIA)</u> Special issue on Informatics for Sex- and Gender-Related Health: Understanding the problems, developing new methods, and designing new solutions

AWARDS AND HONORS

2006-2010	Academic and Leadership Scholarship Recipient, Saint Vincent College
2006-2010	Graduate of Honors Scholars Program, Saint Vincent College
2006-2010	Dean's List (8 consecutive semesters: Fall 2006-Spring 2010), Saint Vincent College
2006-2010	Member of Alpha Lambda Delta Honors Society, Saint Vincent College
2009-2010	National SMART Grant Recipient
2009-2010	AJ Palumbo Research Grant Recipient (Wrote and Received)
2010	Who's Who for American Colleges and Universities
2010	Poster Presentation of Distinction, Saint Vincent College Undergraduate Research Symposium
2010	Graduated Magna cum laude, Saint Vincent College
2010	Award for Excellence in Bioinformatics, Departmental Award, Saint Vincent College
2011	Distinguished Paper Award: 2011 AMIA Translational Summit (co-author)
2013	Nominated for Student Paper Award: 2013 AMIA Annual Meeting (co-author)

2013 Key Paper from 2013, AMIA Clinical Research Informatics Year-in-Review (first-author)

2013 Nominated for Distinguished Paper Award: 2013 AMIA Translational Summit (co-author)

2013 Top Paper in the Practice of Clinical Informatics, AMIA Annual 2013 Symposium (first author)

2013-2014 Columbia University Dean's Fund, PhD Fellowship, Graduate School of Arts and Sciences

2015 Who's Who in America, 69th Edition

2014-2016 National Library of Medicine, PhD Fellowship, Columbia University

2015 1st Place Winner of Distinguished Student Paper Award 2015, AMIA Translational Summit (first-author)

2015 Travel Award (\$500) to attend and present work at the Symposium on Advances in Genomics, Epidemiology and Statistics (SAGES) 2015 held at the Center for Genetics and Complex Traits (CGACT), University of Pennsylvania, Perelman School of Medicine

2015 Mario Stefanelli Best Student Paper Award at the 2015 Conference on Artificial Intelligence in Medicine (co-author)

2015 [Scientist of the Week](#) by Laboratory Equipment, written by Lily Barback and published on July 9, 2015

2015 Editor's Choice Article for Journal of American Medical Informatics Association (JAMIA) (first-author)

2015 Most Downloaded Paper in the History of the journal (including older papers) for the Journal of American Medical Informatics Association (JAMIA) (first-author)

2016 Who's Who in America, 70th Edition

2016-2017 National Institutes of Health, PhD Fellowship for Precision Medicine (TL1), Columbia University

2016 Finalist for Distinguished Student Paper Award 2016 AMIA Translational Summit (first-author)

2018 Top Scoring Poster Award, ASCPT Annual Meeting (first-author)

2018 Invited Flash Presentation, Quantitative Pharmacology Network Meeting, ASCPT Annual Meeting (first-author)

2019 Early Stage Investigator Poster Presentation Award, National Institute of Environmental Health Sciences, National Institutes of Health

2019 American Society for Reproductive Medicine Corporate Member Council In-Training Travel Awards

2019 American Society for Reproductive Medicine, 1st Place Scientific Program Prize Papers
S Alur-Gupta, **MR Boland**, MD Sammel, K Barnhart, A Dokras. Higher incidence of postpartum complications in women with PCOS.

2020 Fellow of the American Medical Informatics Association (FAMIA)

2022 Member of Sigma Xi, Scientific Research Honor Society

2022 Top Informatics Presentation, University of Pennsylvania, Department of Biostatistics Epidemiology & Informatics Research Day, April 27, 2022 (senior author)

2023 Named one of the 40 women for 40 years as an exemplary alumna, Saint Vincent College, Latrobe, PA, USA

2025 Editor of Distinction Award 2025, Springer Nature, for Editorial Work on BioData Mining.

JOURNAL REFEREE ACTIVITIES

2014-present referee for [Science Advances](#), [Briefings in Bioinformatics](#), [Clinical Pharmacology & Therapeutics](#), [International Journal of Epidemiology](#), [Pediatrics](#), [Molecular Psychiatry](#), [Nature Medicine](#), [Nature Metabolism](#), [Journal of the American Medical Informatics Association \(JAMIA\)](#), [Journal of Biomedical Informatics](#), [PLOS Computational Biology](#), [Journal of the](#)

Association for Information Science and Technology, BMC Bioinformatics, Scientific Reports, Computer Methods and Programs in Biomedicine, Health Informatics Journal, Journal of the American Medical Informatics Association (JAMIA) Open, American Journal of Human Biology, BioData Mining, PLOS One, Cancers, Lancet Rheumatology, Epidemiology, Nature Digital Medicine, New England Journal of Medicine, Nature Medicine.

CONFERENCE REFEREE ACTIVITIES

2014-present referee for American Medical Informatics Association Annual Conference, American Medical Informatics Association Translational Summits Conference, American Society for Clinical Pharmacology & Therapeutics Annual Conference, Institute for Electrical and Electronics Engineers (IEEE) International Conference on Health Informatics (ICHI), American Medical Informatics Association (AMIA) Clinical Informatics Summit, Pacific Symposium on Biocomputing.

RESEARCH FUNDING

(dollar amounts are only provided for Dr. Mary Regina Boland's contribution)

Past

2009-2010	Department of Education National SMART Grant Recipient Awarded only in the 3 rd -5 th year undergraduate, requirements for Grant include GPA>3.0 and majoring in a technical STEM field. Also had to be a Pell Grant Recipient. Role: Trainee Awarded \$10,000
2009-2010	AJ Palumbo Research Grant Recipient Role: Principal Investigator Awarded \$2,000
2011-2013	National Library of Medicine (P.I. – Weng) R01 LM009886 Bridging the Semantic Gap Between Research Eligibility Criteria and Clinical Data Role: Research Associate
2011-2013	National Center for Advancing Translational Sciences (P.I. – Ginsberg) UL1 TR000040 Clinical and Translational Science Award Role: Research Associate
2011-2013	National Center for Advancing Translational Sciences (P.I. – Ginsberg) UL1 RR024156 Clinical and Translational Science Award; Adapting the RAO Model to Four Types of Community-Based Providers Role: Research Associate
2012-2013	National Library of Medicine (P.I. – Bigger) R01 LM010815 Developing Flexible EHR Plug-ins to Re-Engineer Clinical Care and Research Workflow Role: Research Associate

2013	National Institute of Health, Agency for Healthcare Research and Quality (P.I. – Bakken) R01 HS019853 Washington Heights Initiative Community-based Comparative Effectiveness Research Role: Research Associate
2013-2015	National Library of Medicine (P.I. – Hripcsak) R01 LM006910 Discovering and Applying Knowledge in Clinical Databases Role: Research Associate and Trainee
2013-2014	Columbia University – Dean’s Fund Competitive 1-Year PhD Fellowship Role: Trainee Awarded \$80,000 for 1 year (\$34,000/year stipend) – total value \$80,000. Amount of Award Received: \$80,000
2014-2016	National Library of Medicine (P.I. – Hripcsak) T15 LM007079 Training in Biomedical Informatics at Columbia University Role: Trainee Awarded \$82,500 per year for 5 years (\$35,000/year stipend) – total value \$412,500. Amount of Award Received: \$165,000 (because I received other grants and transitioned from this award).
2014-2017	National Institute for General Medical Sciences (P.I. – Tatonetti) R01 GM107145 Drug Effect Discovery Through Data Mining and Integrative Chemical Biology Role: Trainee
2016-2017	TL1 Precision Medicine Training Program (P.I. – Chung) TL1 TR001875-01 The TRANSFORM TL1 Precision Medicine (PM) Program provides training and mentorship in methods and applications of PM to pre-docs, post-docs, junior faculty and a wide range of research personnel. Role: Trainee Awarded \$83,500 per year for 1 year (\$36,000/year stipend) with optional second year extension– total value \$167,000. Amount of Award Received: \$83,500 (because I graduated and transitioned off the grant)
2017-2020	Perelman School of Medicine, University of Pennsylvania Startup Funds Role: Principal Investigator
2018-2023	NIH R01-HL134015 (P.I. – Pack & Robishaw) \$574,434.00 R01 HL134015 Approaches to Genetic Heterogeneity of Obstructive Sleep Apnea Role: Co-Investigator (10% effort, starting in Jul 2018)
2018-2021	NIH R01-LM010098 (P.I. – Moore) \$1,764,375

	R01 LM010098 Bioinformatics Strategies for Genome Wide Association Studies Role: Co-Investigator (10% effort, starting in Nov 2018)
2018-2020	NIH P30-ES013508 (P.I. – Penning) \$50,000 Pilot Grant for Chester Healthy Infant Research-to-Action Partnership (CHIRP) Role: Co-PI on Pilot Award for Research Funds
2020-2021	PISC (P.I. - Boland) \$16,000 Pilot Grant for Postpartum Depression and Concussion Role: PI on Pilot Award for Research Funds
2020-2021	NIH U54- NS115322 (P.I. – Smith & Wiebe) \$3,824,133 R01 HL134015 Connect TBI Role: Co-Investigator (10% effort, from 2020-2021) Note: Wrote computer scripts to convert legacy data to RedCap database format for future research studies
2021-2023	NIH UL1 - TR001878 (P.I. – FitzGerald) \$12,481,951 Institutional Clinical and Translational Science Award Role: Co-Investigator (20% effort)
2021-2023	NIH R01-LM013519 (P.I. – Chen) \$1,399,658 PheBC: bias correction methods for EHR derived phenotype Role: Co-Investigator (8.6% effort)
2020-2023	PCORI (P.I. – Chen) \$1,071,927 ME-2019C3-18315 An Efficient Distributed Learning Framework for Integrating Evidence in Clinical Research Role: Co-Investigator (5% effort)
2020-2023	NIH R01- HL157160 (P.I. – Burris and South) \$1,071,927 The Role of Neighborhood Greenspace in Reducing Risk of Hypertensive Disorders of Pregnancy, Chronic Hypertension and Racial Disparities in Maternal Morbidity Role: Co-Investigator (8.5% effort)
2023-2023	NIH R01 - HL169458 (P.I. – Kim & Ritchie) \$3,115,759 Methods for Enhancing Polygenic Risk Prediction Models for Complex Disease Role: Co-Investigator (10% effort)
2021-2023	NIH P30 - AG073105 (P.I. – Demiris & Ritchie) \$4,058,926

Penn Artificial Intelligence and Technology Collaboratory for Healthy Aging
Role: Co-Investigator (10% effort)

2023-2024 Penn Internal (P.I. – Ko)
\$40,000
Improving Diversity in Gynecologic Cancer Clinical Trials
Role: Co-Investigator (5% effort)

Present

2024-2025 NIH P30 AG073105 Pilot Project (P.I. – Zhang)
\$308,345 (subaward to Penn \$126,874, subaward to Saint Vincent College \$51,970.00)
Fairness and Robust Interpretability of Prediction Approaches for Aging and Alzheimer's Disease
Role: Principal Investigator of Sub-Award to Saint Vincent College

2024-2027 NSF Award Number (FAIN): 2433179 (Site P.I. – Boland with co-PI: Jodis and Antonacci)
\$368,526
Collaborative Research: EPIIC: Strengthening Collaborative Advancements Leveraging Equitable University Partnerships
Role: Principal Investigator

2025-2029 NSF Award Number (FAIN): 2500343 (Site P.I. – Boland)
\$150,000
Collaborative Research: SCH: Personal Determinants of Health Enhanced Machine Learning Models for Early Prediction of Alzheimer's Disease and Related Dementias
Role: Principal Investigator

Submitted

Numerous Submissions Under Review

TEACHING EXPERIENCE/CURRENT TEACHING RESPONSIBILITIES

Saint Vincent College (2023-Present)

Courses

2023-2024 Academic Year

2023 “Introduction to Data Science”, DS100, freshmen-level data science and analytics introductory course, Saint Vincent College, Latrobe, PA, USA.

2023 “Data Mining”, DS350, junior-level data science and analytics advanced course, Saint Vincent College, Latrobe, PA, USA.

2023 “Advanced Methods of Data Science”, DS370, senior-level data science advanced course, Saint Vincent College, Latrobe, PA, USA.

2024 “Methods of Data Science and Analytics”, DS300, sophomore/junior-level data science and analytics course, Saint Vincent College, Latrobe, PA, USA.

2024 “Health Analytics”, HSCI230, required course for Biotechnology students, elective course for Data Science majors, Saint Vincent College, Latrobe, PA, USA. **First offered Spring 2024.**

2024 “Capstone in Data Science”, DS400, senior-level data science advanced capstone course, Saint Vincent College, Latrobe, PA, USA.

2024-2025 Academic Year

2024	“Introduction to Data Science”, DS100, freshmen-level data science and analytics introductory course, Saint Vincent College, Latrobe, PA, USA.
2024	“Data Mining”, DS350, junior-level data science and analytics advanced course, Saint Vincent College, Latrobe, PA, USA.
2024	“Deep Learning & Other Advanced Methods of Data Science”, DS370, senior-level data science advanced course, Saint Vincent College, Latrobe, PA, USA.
2024	“Data Science Internship”, DS550, internship experience, Saint Vincent College, Latrobe, PA, USA. Supervised 1 student.
2025	“Methods of Data Science and Analytics”, DS300, sophomore/junior-level data science and analytics course, Saint Vincent College, Latrobe, PA, USA.
2025	“Health Analytics”, HSCI230, required course for Biotechnology students, elective course for Data Science majors, Saint Vincent College, Latrobe, PA, USA.
2025	“Database Concepts & Information Structures”, CS350, required course for Computer Science students and Data Science majors, Saint Vincent College, Latrobe, PA, USA.
2025	“Capstone in Data Science”, DS400, senior-level data science advanced capstone course, Saint Vincent College, Latrobe, PA, USA.
2025	“Data Science Internship”, DS550, internship experience, Saint Vincent College, Latrobe, PA, USA. Supervised 3 students.
2025	“Applications of Data Analytics, Informatics and Health Technology”, Masters in Nursing program, NUR-5416, Saint Vincent College, Latrobe, PA, USA.

Undergraduate Students Capstone Mentor

2023	William Aikins, Liberal Arts capstone, "Peer Support: Changing Minds, Changing Lives", co-mentored with Dr. Eric Mohr, Saint Vincent College, Latrobe, PA, USA.
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Perelman School of Medicine, University of Pennsylvania (2017-2023)

Courses and Lectures

2018	“Informatics Mentor”, for Proposal Development (MTR 602), part of the Masters in Translational Research Program, University of Pennsylvania Medical School.
2018	“Precision Medicine”, module director for Special Topics in Biomedical and Health Informatics (BMIN 504), University of Pennsylvania Medical School.
2018	“Use of Statistics Methods and Machine Learning for Population-Level Analysis Using Electronic Health Records”, lecture for Medical Informatics (FRO 519), University of Pennsylvania Medical School.
2019	“Precision Medicine and Health Policy” (BMIN 505-401), course director/instructor , University of Pennsylvania Medical School. New course, first offered Spring 2019.
2019	“Precision Medicine”, module director for Special Topics in Biomedical and Health Informatics (BMIN 504), University of Pennsylvania Medical School.
2020	“Precision Medicine and Health Policy” (BMIN 505-401), course director/instructor , University of Pennsylvania Medical School. First offered Spring 2019.
2020	“Precision Medicine”, module director for Special Topics in Biomedical and Health Informatics (BMIN 504), University of Pennsylvania Medical School.
2021	“Precision Medicine and Health Policy” (BMIN 505-401), course director/instructor , University of Pennsylvania Medical School. First offered Spring 2019.
2021	“Precision Medicine”, module director for Special Topics in Biomedical and Health Informatics (BMIN 504), University of Pennsylvania Medical School.
2022	“Precision Medicine and Health Policy” (BMIN 505-401), course director/instructor , University of Pennsylvania Medical School. First offered Spring 2019.

2022	“Precision Medicine”, module director for Special Topics in Biomedical and Health Informatics (BMIN 504), University of Pennsylvania Medical School.
2022	“Capstone” (BMIN 9900), course co-director/instructor with Dr. John H Holmes, University of Pennsylvania Medical School.
2022	“Informatics Approaches to Studying Women's Health”, lecturer for Reproductive Epidemiology (EPID 646), University of Pennsylvania Medical School.
2023	“Precision Medicine and Health Policy” (BMIN 505-401), course director/instructor , University of Pennsylvania Medical School. First offered Spring 2019.
2023	“Precision Medicine”, module director for Special Topics in Biomedical and Health Informatics (BMIN 504), University of Pennsylvania Medical School.
2023	“Capstone” (BMIN 9900), course co-director/instructor with Dr. John H Holmes, University of Pennsylvania Medical School.

Seminars

2020-2021	“Health Disparities, Race and Informatics”, seminar director/instructor , University of Pennsylvania. First seminar offered Spring 2021.
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High-School Students Mentored

2019-2021	Owen Wetherbee, Lower Merion High-School, went to Georgia Tech
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Undergraduate Students Mentored

2018	Ashley Cukier, Medical Anthropology major, University of Pennsylvania
2018-2020	Caroline DeVoto, Computer Science major, Notre Dame
2019-2020	Phiwinhlanhla Ndebele-Ngwenya, Summer Undergraduate Minority Research Program, LDI, University of Pennsylvania
2020-2021	Jessica Liu, University of Pennsylvania
2020-2021	Sarah Tadlock, University of Pennsylvania
2020-2022	Rebecca Morse, University of Pennsylvania, Obtained Fulbright Scholarship to attend a Masters program in Switzerland
2022	Saiido Noor, Summer Undergraduate Internship Program (SUIP), Perelman School of Medicine, University of Pennsylvania
2020-2023	Ella Poole, University of Pennsylvania

Masters Students Mentored

2017-2018	Jiadi Xiong, Data Science Masters Program, University of Pennsylvania
2017-2019	Aditya Kashyap, Data Science Masters Program, University of Pennsylvania

PhD Rotation Students Mentored

2019	Jessica Meeker (Joint with Dr. Heather Burris), Graduate Group in Epidemiology & Biostatistics, University of Pennsylvania
2020	Bernadette D'Alonzo, Graduate Group in Epidemiology & Biostatistics, University of Pennsylvania
2021	Kelli Williams, Graduate Group in Epidemiology & Biostatistics, University of Pennsylvania
2022	Chloe Paris, Graduate Group in Genomics & Computational Biology, University of Pennsylvania
2023	Julia Ditosto, Graduate Group in Epidemiology & Biostatistics, University of Pennsylvania

PhD Students Mentored

- 2019-2021 Jessica Meeker, Graduate Group in Epidemiology & Biostatistics, University of Pennsylvania, Started as fulltime mentor: Summer 2019; Defense Date: March 18, 2021, Graduation Date: May 17, 2021. Current: Epidemic Intelligence Service (EIS) Postdoctoral Fellow at the CDC in Reproductive Epidemiology
- 2019-2025 Aditya Kashyap (Joint with Dr. Chris Callison-Burch), Graduate Group in Computer Science, SEAS, University of Pennsylvania. Started as fulltime mentor: Fall 2019; Defense Date: January 20, 2025, Expected Graduation: May 2025

Medical School Students Mentored (Elizabeth Blackwell Society)

- 2017 Y. Ally Wang, class of 2018
- 2018 Robin H Wang, class of 2022

Post-doctoral Student Scientists Mentored

- 2018-2020 Ray Bai, Department of Biostatistics, Epidemiology & Informatics, University of Pennsylvania (Joint with Dr. Yong Chen) (starting as tenure-track Assistant Professor of Statistics at University of South Carolina in Aug 2020)
- 2018-2022 Silvia Canelon, Department of Biostatistics, Epidemiology & Informatics, University of Pennsylvania

Ph.D. Student, Academic Advising

- 2018-2021 Jessica Meeker, Graduate Group in Epidemiology and Biostatistics, University of Pennsylvania
- 2019-2021 Tuhina Srivastava, Graduate Group in Epidemiology and Biostatistics, University of Pennsylvania
- 2020-2022 Dominique Medaglio, Graduate Group in Epidemiology and Biostatistics, University of Pennsylvania
- 2023-2023 Saiido Noor, Graduate Group in Epidemiology and Biostatistics, University of Pennsylvania

Ph.D. Candidacy Exams Served On

- 2018 David Lee, Title: *Alternative Splicing in Inflammatory Bowel Disease*, Graduate Group in Genomics and Computational Biology, University of Pennsylvania
- 2019 Chi-Yun Wu, Title: *TBA*, Graduate Group in Genomics and Computational Biology, University of Pennsylvania
- 2021 Vivek Sriram, Title: *Exploring Genetic Drivers of Disease Complications through Network-based Integration of EHR-linked Biobank Data*, Graduate Group in Genomics and Computational Biology, University of Pennsylvania
- 2021 Brenda Xiao, Title: *Integrating Various Risk Factors with Polygenic Risk Scores for Preeclampsia*, Graduate Group in Genomics and Computational Biology, University of Pennsylvania
- 2022 Karl Keat, Title: TBD, Graduate Group in Genomics and Computational Biology, University of Pennsylvania.
- 2023 Rachit Kumar, Title: TBD, Graduate Group in Genomics and Computational Biology, University of Pennsylvania.

Ph.D. Qualifying Exams Served On

- 2019 Neal Dhopeswaha, Graduate Group in Epidemiology and Biostatistics, University of Pennsylvania

2019	Jessica Meeker, Graduate Group in Epidemiology and Biostatistics, University of Pennsylvania
2019	Tara Klingner, Graduate Group in Epidemiology and Biostatistics, University of Pennsylvania
2019	Alexa Woodward, Graduate Group in Epidemiology and Biostatistics, University of Pennsylvania
2019	Stephanie Teeple, Graduate Group in Epidemiology and Biostatistics, University of Pennsylvania
2020	Lanair Lett, Graduate Group in Epidemiology and Biostatistics, University of Pennsylvania
2020	Tuhina Srivastava, Graduate Group in Epidemiology and Biostatistics, University of Pennsylvania
2020	Kuldeep Yadav, Graduate Group in Epidemiology and Biostatistics, University of Pennsylvania
2021	Bernadette D'Alonzo, Graduate Group in Epidemiology & Biostatistics, University of Pennsylvania
2021	Emily Acton, Graduate Group in Epidemiology & Biostatistics, University of Pennsylvania
2021	Dominique Medaglio, Graduate Group in Epidemiology & Biostatistics, University of Pennsylvania
2021	Brinkley Raynor, Graduate Group in Epidemiology & Biostatistics, University of Pennsylvania
2021	Danielle Kellier, Graduate Group in Epidemiology & Biostatistics, University of Pennsylvania
2022	Kelli Williams, Graduate Group in Epidemiology & Biostatistics, University of Pennsylvania
2022	Wilhelm van der Mei, Graduate Group in Epidemiology & Biostatistics, University of Pennsylvania
2022	Kira Nightingale, Graduate Group in Epidemiology & Biostatistics, University of Pennsylvania
2023	Julia Ditosto, Graduate Group in Epidemiology & Biostatistics, University of Pennsylvania
2023	Christopher Miller Graduate Group in Epidemiology & Biostatistics, University of Pennsylvania
2023	Haedi Thelen Graduate Group in Epidemiology & Biostatistics, University of Pennsylvania
2023	Katrina Bazemore, Graduate Group in Epidemiology & Biostatistics, University of Pennsylvania
2023	Naria Sealy, Graduate Group in Epidemiology & Biostatistics, University of Pennsylvania

Ph.D. Dissertation Committees Served On

2018-2020	Rui Duan, Title: <i>EHR + X: Challenges, Methods and Inference in Integrating EHR data with Other Sources</i> , Graduate Group in Epidemiology and Biostatistics, University of Pennsylvania
2020-2021	Mackenzie Edmondson, Title: <i>Privacy-Preserving Distributed Regression Algorithms for Analysis of Multi-Site Real-World Data</i> , Graduate Group in Epidemiology and Biostatistics, University of Pennsylvania. Defended: June 2021, Graduated: October 2021
2022-2023	Karl Keat, Title: TBD, Graduate Group in Genomics and Computational Biology, University of Pennsylvania. Defended: TBD, Graduated: TBD.
2021- 2024	Brenda Xiao, Title: <i>Integrating Various Risk Factors with Polygenic Risk Scores for Preeclampsia</i> , Graduate Group in Genomics and Computational Biology, University of Pennsylvania. Defended: April 15, 2024, Graduated: May 20, 2024.
2022-2024	Danielle Kellier, Title: <i>Social Disparities in Healthcare Utilization for Children and Adolescents with Migraine Disease</i> , Graduate Group in Epidemiology & Biostatistics, University of Pennsylvania. Defended: July 24, 2024, Graduated: October 2024

Masters Science Clinical Epidemiology Students Mentored

2018-2020	Snigdha Alur-Gupta, MSCE program, University of Pennsylvania (co-mentor: Dr. Dokras)
2020-2022	Adina Goldberg, MSCE program, University of Pennsylvania (co-mentor: Dr. Levine)
2023-2024	Katilyn Broderick, MSCE program, University of Pennsylvania (informatics mentor: Dr. Boland, clinical epidemiology mentor: Dr. Ellie Caniglia)

Masters Translational Research (MTR) Students Mentored

2018-2020 Courtney Quinlan, MTR program, University of Pennsylvania

Masters Biomedical Informatics Program (MBMI)

2020- 2023 Faculty Associate Director of Masters in Biomedical Informatics (MBMI) Program

2021- 2023 Capstone Oversight Mentors (joint with Dr. Holmes) for Masters in Biomedical Informatics (MBMI) Program

College of Physicians and Surgeons, Columbia University (2010-2017)

Courses and Lectures

2011-2013 “Ontologies”, module director and lecturer for Symbolic Methods of Biomedical Informatics (G4003), Columbia University College of Physicians and Surgeons

2014 “Introduction to Translational Bioinformatics” (G4006), teaching assistant and course designer, Columbia University College of Physicians and Surgeons

2015 “Translational Bioinformatics” (G4006), teaching assistant, Columbia University College of Physicians and Surgeons

2016 “Biological Sequence Analysis” (G4013), teaching assistant, Columbia University College of Physicians and Surgeons

Jefferson University

Tutor

2014-2016 “Research Methods”, tutor, Nursing School, Jefferson University

American Society of Health-System Pharmacists (ASHP)

Courses and Lectures

2016 “Data Mining for Drug Safety”, teaching assistant and lecturer, Continuing Education course for American Society of Health-System Pharmacists

2016 “Connecting the EHR to Biomedical Discoveries”, teaching assistant and lecturer, Continuing Education course for American Society of Health-System Pharmacists

American Medical Informatics Association (AMIA)

Courses and Lectures

2015-2016 “JAMIA Journal Club”, co-manager, Continuing Education course for American Medical Informatics Association

Saint Vincent College

Courses and Lectures

- 2008-2009 “General Chemistry I Laboratory”, teaching assistant, Chemistry Department, Saint Vincent College
- 2008-2009 “General Chemistry II Laboratory”, teaching assistant, Chemistry Department, Saint Vincent College

Tutor

- 2008-2009 “General Chemistry I”, tutor, Chemistry Department, Saint Vincent College
- 2008-2009 “General Chemistry II”, tutor, Chemistry Department, Saint Vincent College
- 2008-2009 “Organic Chemistry I”, tutor, Chemistry Department, Saint Vincent College
- 2008-2009 “Organic Chemistry II”, tutor, Chemistry Department, Saint Vincent College
- 2008-2009 “General Chemistry I Laboratory”, tutor, Chemistry Department, Saint Vincent College
- 2008-2009 “General Chemistry II Laboratory”, tutor, Chemistry Department, Saint Vincent College
- 2008-2009 “Organic Chemistry I Laboratory”, tutor, Chemistry Department, Saint Vincent College
- 2008-2009 “Organic Chemistry II Laboratory”, tutor, Chemistry Department, Saint Vincent College

INVITED PRESENTATIONS

- 2013 “Discovering Medical Conditions Associated with Periodontitis Using Linked Electronic Health Records” Department of Biomedical Informatics, Researcher Seminar, Columbia University, New York, NY. January 24, 2013.
- 2014 “SeaWAS: Season-Wide Association Study” Department of Biomedical Informatics, Student Seminar, Columbia University, New York, NY. November 06, 2014.
- 2015 “Birth Month Affects Lifetime Disease Risk: A Phenome-Wide Method” Department of Systems Biology, Student Seminar, Columbia University, New York, NY. May 05, 2015.
- 2016 “Electronic Health Records and Precision Medicine: Enabling Large-Scale Discoveries Using Phenome-Wide Approaches” IMPACT Symposium IV – Statistical Challenges and Opportunities in Precision Cancer Medicine, Cary NC. November 18, 2016.
- 2016 “A Systems-Level Approach to Understand the Seasonal Factors of Early Development with Clinical and Pharmacological Applications” Institute for Biomedical Informatics, University of Pennsylvania Philadelphia, PA. December 13, 2016.
- 2017 “A Systems-Level Approach to Understand the Seasonal Factors of Early Development with Clinical and Pharmacological Applications” Department of Biomedical Informatics, University of Pittsburgh Pittsburgh, PA. February 17, 2017.
- 2017 “Lessons from Smith-Lemli-Opitz Syndrome that Can Help All Kids – How SLOS Can Inform Us About Birth Month – Disease Risk Dependencies”, Smith-Lemli-Opitz Family Medical Conference, Cincinnati, Ohio. June 23, 2017.
- 2017 “Prenatal/Perinatal Exposures – Latent and Overt – and Their Lifetime Effect”, Center for Pediatric Clinical Effectiveness & Policy Lab Seminar Series, Children’s Hospital of Philadelphia, Philadelphia, PA. September 15, 2017.
- 2017 “Uncovering Exposures Responsible for Birth Season – Disease Effects: A Global Study”, Observational Health Data Sciences and Informatics Symposium. Bethesda, MD. October 18, 2017.
- 2017 “Climate Classification is an Important Factor in Assessing Quality-of-Care Across Hospitals”, 2017 Fall Meeting, American Geophysical Union, New Orleans, LA. December 11-15, 2017.
- 2018 “Prenatal/Perinatal Exposures – Latent and Overt – and Their Lifetime Effect”, Center for Excellence in Environmental Toxicology, University of Pennsylvania, Philadelphia, PA. February 15, 2018.
- 2018 “Prenatal/Perinatal Exposures – Latent and Overt – and Their Lifetime Effect”, Center for Clinical Epidemiology & Biostatistics, University of Pennsylvania, Philadelphia, PA. February 15, 2018.

- 2018 “Development of A Machine Learning Algorithm to Classify Drugs of Unknown Fetal Effect”, American Society of Clinical Pharmacology & Therapeutics, Orlando, FL. March 21-24, 2018.
- 2018 “Contributions from Informatics and Data Science to Environmental Health and Exposome Research”. Medical Informatics in Europe (MIE). Gottenburg, Sweden, April 24-27, 2018. Panel member with F Martin-Sanchez, R Bellazzi.
- 2018 “First Trimester Exposure to Fine Air Particulate and Increased Risk of Cardiovascular Disease”, Center for Excellence in Environmental Toxicology, External Advising Committee, University of Pennsylvania, Philadelphia, PA. April 19, 2018.
- 2018 “First Trimester Exposure to Fine Air Particulate and Increased Risk of Cardiovascular Disease”, Informatics Day, Department of Biostatistics, Epidemiology & Informatics, University of Pennsylvania, Philadelphia, PA. May 31, 2018.
- 2018 “Using Electronic Health Records to Explore Relationships with OSA and Cardiovascular Disease”, Sleep Apnea Global Interdisciplinary Consortium (SAGIC) – Reykjavik, Iceland. September 23, 2018.
- 2018 “Can your birth month predict your risk of heart disease?”, Undergraduate Bioinformatics Program, Saint Vincent College, Latrobe, PA, USA. October 11, 2018.
- 2018 “Condition Coding Practice Differences Between USA, Asia and Europe”, Observational Health Data Sciences and Informatics (OHDSI) Symposium. Bethesda, MD, USA. October 12, 2018.
- 2018 “Construction of PEPPER: Prenatal Exposure Pubmed Parser”, American Medical Informatics Association, San Francisco, CA. Nov. 2018.
- 2018 “Mapping Regional Effects of Exposure to Hydraulic Fracturing Fluid and Linking with Information on Toxicity”, 2018 Fall Meeting, American Geophysical Union, Washington DC, December 10-14 2018.
- 2019 “ODAL: A one-shot distributed algorithm to perform logistic regressions on electronic health records data from multiple clinical sites”, Pacific Symposium in Biocomputing, Kona, Hawaii. Jan. 2019.
- 2019 “Construction of PEPPER: Prenatal Exposure Pubmed Parser”, Pacific Symposium in Biocomputing, Kona, Hawaii. Jan. 2019.
- 2019 “Investigating the Effects of Pharmacological Drug Exposure on Pregnancy Outcomes”, Center for Research on Reproduction and Women’s Health (CRRWH). May 29, 2019 University of Pennsylvania, Philadelphia, PA.
- 2019 “Mapping Regional Effects of Exposure to Hydraulic Fracturing Fluid and Linking with Information on Toxicity”, Environmental Health Sciences Core Center 2019 Meeting, University of Iowa, Iowa City, Iowa, June 20-21 2019.
- 2019 “Developing Informatics Methods that Enable Reproducible Results”, Personalized Health Informatics Group, Swiss Institute of Bioinformatics, Basel Switzerland. July 17, 2019.
- 2019 “Approaches to Obtaining Outcomes Data for Sleep Studies”, Sleep Apnea Global Interdisciplinary Consortium (SAGIC) – Vancouver, Canada. September 20, 2019.
- 2020 “Developing Informatics Methods to Study Maternal and Child Health Outcomes and their Environmental Contributions”– University of Texas Medical Center, Houston, TX, March 20, 2020. **Cancelled Due to Coronavirus.**
- 2020 “The Difficulties, Pitfalls & Importance of Studying Exposures During Pregnancy”, Food & Drug Administration, May 6, 2020.
- 2020 “Experiences in Informatics: My Career Path”– Department of Biomedical Informatics, Columbia University, New York, NY, September 9, 2020. **Virtual Session.**
- 2020 “Developing Informatics Methods to Study Maternal and Child Health Outcomes and their Environmental Contributions”– School of Biomedical Informatics (SBMI) University of Texas Medical Center, Houston, TX, September 30, 2020. **Virtual Session.**
- 2021 “Turn Right Here: A Journey through the Pathways of AMIA Q & A Session for Students”– Invited by AMIA leadership to present at the AMIA 2021, March 23, 2021. **Virtual Session.**
- 2021 “International Workshop on AI in Health: Transferring and INtegrating Knowledge for Better Health”– Invited Guest Speaker to present at The Web Conference 2021, April 19, 2021. **Virtual Session.**
- 2021 "Studying Neighborhood Effects on Human Health Using Electronic Health Record Data"- Invited Guest Speaker to present at Humboldt State University, California, September 29, 2021. **Virtual Session.**

- 2021 "Studying Neighborhood Effects on Human Health Using Electronic Health Record Data"- Invited Guest Speaker to present at Morehouse College, Atlanta, GA, October 8, 2021. **Virtual Session.**
- 2021 "Studying Neighborhood Effects on Human Health Using Electronic Health Record Data"- Invited Guest Speaker to present at University of California Berkeley - SEED Scholar program, California 2021, October 27, 2021. **Virtual Session.**
- 2021 "Identifying Residential Mobility Using Electronic Health Record Data"- Invited Guest Speaker to present at University of California San Francisco, California, November 05, 2021. **Virtual Session.**
- 2022 "Studying Hydraulic Fracturing Chemicals and Affects on Human Health"- Invited Guest Speaker for Community Engagement Core, Stakeholder Advisory Board Meeting, Center for Excellence in Environmental Toxicology, University of Pennsylvania, Philadelphia, PA, January 20, 2022. **Virtual Session.**
- 2022 "Methods and Considerations for Studying Neighborhood Effects and Environmental Exposures on Human Health Using Electronic Health Record Data "- Guest Speaker to present at North Carolina A&T, November 02, 2022. **Virtual Session.**
- 2022 "Impact of Climate Change on the Timing of Menarche"- Invited Guest Speaker for Center for Excellence in Environmental Toxicology Symposium, University of Pennsylvania, Philadelphia, PA, November 18, 2022. **Virtual Session.**
- 2023 "Studying Disparities through the Integration of Environmental Exposures with Health Outcomes using Electronic Health Records"- Invited Guest Speaker for Saint Vincent College, Business School, January 25, 2023. Latrobe, PA, USA. In Person.
- 2023 "Studying Disparities through the Integration of Environmental Exposures with Health Outcomes using Electronic Health Records"- Invited Guest Speaker for Vanderbilt University, Department of Biomedical Informatics, February 22, 2023. **Virtual Session.**
- 2023 "Studying Disparities through the Integration of Environmental Exposures with Health Outcomes using Electronic Health Records"- Invited Speaker for Department Research Day, University of Pennsylvania, March 29, 2023.
- 2023 "Studying Disparities through the Integration of Environmental Exposures with Health Outcomes using Electronic Health Records"- Invited Guest Speaker for Cedars-Mount Sinai, Los Angeles, CA, April 12, 2023. **Virtual Session.**
- 2023 "Understanding the role of endocrine disruptors on human health and disparities through the development of novel informatics methods"- Invited Guest Speaker for Toxicology Division of the American Chemical Society (ACS) symposium on augmented and artificial intelligence methods applied to toxicology. April 14, 2023. **Virtual Session.**
- 2023 "Characteristics of High-Performing Hospitals Where Black Women Experience Optimal Birth Outcomes"- Podium Presentation for Academy Health (senior author), June 25, 2023, Seattle, WA, USA.
- 2023 "Using Electronic Health Records and Principals of Artificial Intelligence in Reproductive Research"- Invited Grand Rounds Presentation for the Department of Obstetrics & Gynecology, Penn State, October 04, 2023.

SERVICE

- 2009-2010 Ovarian Cancer National Alliance™ Benefit Concert Organizer, Saint Vincent Basilica, Latrobe PA
- 2011 Student Volunteer for the AMIA Fall 2011 Annual Conference, Washington DC
- 2014-2015 Big Brother/Big Sister Program, Graduate Student Organization, Columbia University, New York, NY

FOUNDING SCHOLARSHIP

- 2025 Saint Giles Scholarship for Data Science majors at Saint Vincent College, Latrobe, PA, USA.

BIBLIOGRAPHY

Impact Summary (08/08/2025 – Source: Google Scholar)

Total publications = 92

Total citations = 2876

Average citations per paper ~ 31.26

H-index = 31

i10-index = 55

Publications cited \geq 10 times = 55

Publications cited \geq 20 times = 41

Publications cited \geq 30 times = 33

Publications cited \geq 50 times = 20

Publications cited \geq 100 times = 6

NCBI Account:

<https://www.ncbi.nlm.nih.gov/myncbi/1BEwu-YaGomAK/bibliography/public/>

ORCID Account:

<https://orcid.org/0000-0001-8576-6408>

Google Scholar:

<https://scholar.google.com/citations?user=AJKKzMAAAAAAJ&hl=en&oi=ao>

DBLP:

<https://dblp.org/pid/119/7465.html>

Referred Textbook

MR Boland. [Health Analytics with R: Learning Data Science Using Examples from Healthcare and Direct-to-Consumer Genetics](#). Springer. Release Date: January 1, 2025. **Sold over 3,000 copies (digital and paper) to five continents and over 25 countries!**

Referred Publications

Journal Articles

1. BA D'Alonzo, AC Bretzin, R Morse, ALC Schneider, SP Canelon, DJ Wiebe, **MR Boland**. Risk of Mortality Among Adult Females Diagnosed with Traumatic Brain Injury in an Academic Medical System. *Neurotrauma Reports*. **2025**; *In press*
2. T Te, AAT Bui, CH Fung, **MR Boland**. Geospatial Analysis of Short Sleep Duration and Cognitive Disability in US Adults: A Multi-State Study Using Machine Learning Techniques. *BioData Mining*. **2025**; *In press*.
3. A Kashyap, D Rao, **MR Boland**, L Shen C Callison-Burch. Predicting Explainable Dementia Types with Concept Bottleneck Models. *Bioinformatics*. **2025**; *In press*.
4. T Te, **MR Boland***, S Ghadimi, JM Dzierzewski, C Alessi, J Martin, S Kremen, A Naeim, CH Fung*. Predicting Sleepiness From Verbal Reaction Time During Verbal Cognitive Testing. *Sleep Science and Practice*. **2025**; *In press*.
5. **MR Boland**, E Tubridy, SS Solorzano, F Simpkins, AJ Smith, E Ko. Geographic disparities in gynecologic oncology clinical trial availability in the United States: A state-level analysis. *JAMA Network Open* **2024**; *In press*.

6. T Te, CH Fung, **MR Boland**. Comorbidities that Modulate Temporal Risk for Incident Hypertension Among Patients with Obstructive Sleep Apnea. *Clinical Hypertension* **2024**; *In press*.
7. R Clark, **MR Boland**. Spontaneous Vaginal Birth Rates Among Black Women Meet National Targets in Hospitals with Better Nurse Work Environments. *BMJ Open* **2024**; *In press*.
<https://doi.org/10.1136/bmjopen-2023-082421>
8. EM Poole, **MR Boland**. A National Study of the Impact of Hormonal Modulators in Hydraulic Fracturing Fluid Chemicals on Birth Outcomes in the United States of America: A County-Level Analysis. *Environmental Health Perspectives* **2024**; 132:10. <https://doi.org/10.1289/EHP12628>
9. MC Arnold, L Liu, **MR Boland**. Development, Evaluation and Comparison of Machine Learning Algorithms for Predicting In-hospital Patient Charges for Congestive Heart Failure Exacerbations, Chronic Obstructive Pulmonary Disease Exacerbations and Diabetic Ketoacidosis. *BioData Mining*. **2024**; *In Press*.
10. BA D'Alonzo, AC Bretzin, R Morse, ALC Schneider, SP Canelon, DJ Wiebe, **MR Boland**. A Comparison of Different Definitions of Traumatic Brain Injury: Implications for Cohort Characteristics and Survival in Females. *Injury Prevention*. **2024**; May 27: ip-2023-045069. doi: 10.1136/ip-2023-045069.
11. D Zhang, J Tong, R Stein, Y Lu, N Jing, Y Yang, **MR Boland**, C Luo, RJ Carroll, CB Forrest, Y Chen. One-shot distributed algorithms for addressing heterogeneity in competing risks data across clinical sites. *Journal of Biomedical Informatics*; **2024**; 150(Feb):104595.
12. T Te, B Keenan, O Veatch, **MR Boland**, R Hubbard, A Pack. Identifying Clusters of Patient Comorbidities associated with Obstructive Sleep Apnea Using Electronic Health Records. *Journal of Clinical Sleep Medicine*. **2024**; Apr 1; 20(4): 521-533. doi: 10.5664/jcsm.10930.
13. R Bai, **MR Boland***, Y Chen* Scalable high-dimensional Bayesian Varying Coefficient Models with Unknown Within-Subject Covariance. *Journal of Machine Learning Research*. **2023**; *In Press*. *Joint Senior Author
14. KE Mari, N Yang, **MR Boland**, JR Meeker, R Ledyard, EA Howell, HH Burris. Assessing Racial Residential Segregation as a Risk Factor for Severe Maternal Morbidity. *Annals of Epidemiology*. **2023**; *In Press*.
15. S Alur-Gupta, **MR Boland**, A Dokras. Risk of SARS-CoV-2 Infection Among Women with Polycystic Ovary Syndrome. *Fertility & Sterility* **2023**; May;119(5):847-857
16. A Kashyap, C Callison-Burch, **MR Boland**. A Deep Learning Method to Detect Opioid Prescription and Opioid Use Disorder from Electronic Health Records. *International Journal of Medical Informatics*. **2023**; *In press*.
17. L Davidson, S Canelon, **MR Boland**. A Medication-Wide Association Study (MWAS) on Repurposed Drugs for COVID-19 with Pre-pandemic Prescription Medication Exposure and Pregnancy Outcomes. *Scientific Reports* **2022**; *In Press*.
18. L Davidson, S Canelon, **MR Boland**. Prescription Medication Exposures and Multi-Fetal Pregnancies: Medication-Wide Association Study (MWAS) Using Electronic Health Record Data. *Journal of Medical Internet Research (JMIR)* **2022**; *In Press*.
19. A Bushong, T McKeon, **MR Boland**, J Field. Publicly available data reveals association between asthma hospitalizations and unconventional natural gas development in Pennsylvania. *PloS One*. 2022; *In press*.
20. R Morse, AC Breitzin, S Canelon, B D'Alonzo, ALC Schneider, **MR Boland**. Design and Evaluation of a Postpartum Depression Ontology. *Applied Clinical Informatics*. 2022; *In press*.
21. DR Mazzotti, BT Keenan, EH Thorarinsdottir, T Gislason, AI Pack, R Schwab, G Maislin, N Jafari, **MR Boland**, F Pack, J Kim, UJ Magalang, J Mindel, MM Lyons, S Holfinger, S Rojas, D Laurent, A Gonzalez Zacarias, B Benediktsdottir, T Penzel, B Sanner, I Fietze, M Franczyk, N Laharnar, H Qin, F Han, A Liyue Xu, JJ Guo, QY Li, Y Lin, N-H Chen, L-P Chuang, Y-S Lin, S-W Lin, H-Y Huang, PA Cistulli, P deChazal, K Sutherland, B Singh, N McArdle, P Eastwood, D Mazzotti, O Veatch, D Lim. Is the Epworth Sleepiness Scale Sufficient to Identify the Excessively Sleepy Subtype of OSA? *Chest* 2022; 161 (2): 557-561.

22. R Bai, GE Moran, J Antonelli, Y Chen*, **MR Boland***. Spike-and-Slab Group Lasso for Grouped Regression and Sparse Generalized Additive Models. *Journal of American Statistical Association (JASA) Applications*. **2022**; 117:537, 184-197. *Joint Senior Author
23. **MR Boland**, N Elhadad, W Pratt. Informatics for Sex- and Gender-Related Health: Understanding the Problems, Developing New Methods and Designing New Solutions. *Journal of American Medical Informatics Association (JAMIA)*. **2022**; 29(2): 225-229. PMID: 35024858.
24. JR Meeker, HH Burris, R Bai, LD Levine, **MR Boland**. Neighborhood deprivation increases the risk of post-induction cesarean delivery. *Journal of American Medical Informatics Association (JAMIA)*. **2022**; 29(2): 329-334. PMID: 34921313.
25. S Canelon, S Butts, **MR Boland**. Evaluation of Stillbirth Among Pregnant People with Sickle Cell Trait. *JAMA Network Open*. 2021; 4(11):e2134274.
26. **MR Boland**, L Davidson, S Canelon, J Meeker, T Penning, JH Holmes, J Moore. Harnessing Electronic Health Records to Study Emerging Environmental Disasters: A Proof of Concept with Perfluoralkyl Substances (PFAS). *Nature Digital Medicine*. 2021; 4(1):122.
27. JH Holmes, J Beinlich, **MR Boland**, K Bowles, Y Chen, T Cook, G Demiris, M Draugelis, L Fluharty, P Gabriel, R Grundmeier, C Hanson, D Herman, B Himes, R Hubbard, C Kahn Jr., D Kim, R Koppel, Q Long, N Mirkovic, J Morris, D Mowery, M Ritchie, R Urbanowicz, JH Moore. Why is the Electronic Health Record so Challenging for Research and Clinical Care? *Methods of Information in Medicine*. 2021; 60(1-02):32-48.
28. JR Meeker, HH Burris, **MR Boland**. An Algorithm to Identify Residential Mobility from Electronic Health Record Data. *International Journal of Epidemiology*. 2021; *In press*.
29. JR Meeker, SP Canelon, R Bai, LD Levine, **MR Boland**. Individual- and Neighborhood-Level Risk Factors for Severe Maternal Morbidity. *Obstetrics & Gynecology*. 2021; 137(5):847-854.
30. L Davidson, **MR Boland**. Towards Deep Phenotyping Pregnancy: A Systematic Review on Artificial Intelligence and Machine Learning Methods to Improve Pregnancy Outcomes. *Briefings in Bioinformatics*. 2021; 22(5):bbaa369.
31. S Canelon, HH Burris, LD Levine, **MR Boland**. Development and Evaluation of MADDIE: Method to Acquire Delivery Date Information from Electronic Health Records. *International Journal of Medical Informatics*. **2020**; 145:104339.
32. S Alur-Gupta, **MR Boland**, K Barnhart, M Sammel, A Dokras. Postpartum Complications Increased in Women with Polycystic Ovary Syndrome. *American Journal of Obstetrics & Gynecology*. **2021**; 224(3): 280.e1-280.e13
33. O Wetherbee, J Meeker, C DeVoto, T Penning, J Moore, **MR Boland**. WellExplorer: An Integrative Resource Linking Hydraulic Fracturing Chemicals with Targeted Proteins, Hormonal Pathways and Geographic Location. *Database*. **2020**; *In press*. DOI: 10.1093/database/baaa053
34. B Singh, G Maislin, BT Keenan, N McArdle, DR Mazzotti, U Magalang, AI Pack, R Schwab, DC Lim, OJ Veatch, **MR Boland**, F Pack, J Kim, UJ Magalang, J Mindel, MM Lyons, S Holfinger, S Rojas, T Gislason, B Benediktsdottir, T Penzel, B Sanner, I Fietze, M Franczyk, N Laharnar, H Qin, F Han, A Liyue Xu, JJ Guo, QY Li, Y Lin, N-H Chen, L-P Chuang, Y-S Lin, S-W Lin, H-Y Huang, C Shin, SK Lee, PA Cistulli, P deChazal, K Sutherland, P Eastwood. CPAP Treatment and Cardiovascular Prevention An Alternate Study Design that Includes Excessively Sleepy Patients? *Chest* 2020; 157 (4): 1046-1047.
35. JH Moore, I Barnett, **MR Boland**, Y Chen, G Demiris, G Gonzalez-Hernandez, DS Herman, BE Himes, RA Hubbard, D Kim, JS Morris, DL Mowery, MD Ritchie, L Shen, R Urbanowicz, JH Holmes. Ideas for how informaticians can get involved with COVID-19 research. *BioData Mining*. **2020**; 13:3.
36. L Davidson, **MR Boland**. Enabling Pregnant Women and their Physicians to Make Informed Medication Decisions Using Artificial Intelligence. *Journal of Pharmacokinetics and Pharmacodynamics*. **2020**; 47(4):305-318.
37. R Duan, C Luo, MJ Schuemie, J Tong, JC Liang, HH Chang, **MR Boland**, J Bian, H Xu, JH Holmes, CB Forrest, SC Morton, JA Berlin, JH Moore, KB Mahoney, Y Chen. Learning from local to global-an efficient distributed algorithm for modeling time-to-event data. *J Am Med Inform Assoc*. **2020**; 27(7):1028-1036.

38. S Canelon, **MR Boland**. A Systematic Literature Review on Factors Affecting the Timing of Menarche: Potential for Climate Change to Impact Women's Health. *International Journal of Environmental Research and Public Health*. **2020**; 17(5): 1703. **IF: 2.5**
39. A Kashyap, H Burris, C Callison-Burch, **MR Boland**. The CLASSE GATOR (CLinical Acronym SenSE disambiGuATOR): A Method for Predicting Acronym Sense from Neonatal Clinical Notes. *International Journal of Medical Informatics*. **2020**; 137:104101. **IF: 3.2**
40. **MR Boland**, M Fieder, LH John, P Rijnbeek, S Huber. Female Reproductive Performance and Maternal Birth Month: A Systematic Review and Meta-Analysis Exploring Multiple Seasonal Mechanisms. *Scientific Reports*. **2020**; 10:555. **IF: 4.3**
41. **MR Boland**, ML Casal, M Kraus, AR Gelzer. Applied Veterinary Informatics: Development of a Semantic and Domain-Specific Method to Construct a Canine Data Repository. *Scientific Reports*. **2019**; 9(1):18641. **IF: 4.3**
42. R Duan, **MR Boland**, Z Liu, Y Liu, HH Chang, H Xu, H Chu, CH Schmid, CB Forrest, JH Holmes, MJ Schuemie, JA Berlin, JH Moore, Y Chen. Learning from Electronic Health Records Across Multiple Sites: A Communication Efficient and Privacy Preserving Distributed Algorithm. *J Am Med Inform Assoc*. **2020**; 27 (3): 376-385. **IF: 4.5**
43. **MR Boland**, S Alar-Gupta, L Levine, P Gabriel, G Gonzalez. Disease Associations Depend on Visit Type: Results from a Visit-Wide Association Study. *BioData Mining*. **2019**; 12(1):15. **IF: 1.9**
44. J Moore, **MR Boland**, P Camara, G Gonzalez, B Himes, D Mowery, M Ritchie, L Shen, R Urbanowicz, J Holmes. Preparing next generation scientists for biomedical big data: Artificial intelligence approaches. *Personalized Medicine*. **2019**; 6(3):247-257. **IF: 1.0**
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Full-Text Conference/Workshop Proceedings

71. K Noshin+, **MR Boland**+, B Hou, V Lu, C Manning, L Shen, A Zhang. Understanding the Clinical Modalities Important in NeuroDegenerative Disorders, Alzheimer's Disease, and Risk of Patient Injury

- Using Machine Learning and Survival Analysis. *AMIA Informatics Summit 2025*, Pittsburgh, PA, USA (full paper). *In press*. +Equal contribution first author
72. K Noshin+, **MR Boland**+, B Hou, V Lu, C Manning, L Shen*, A Zhang. Integrating Social Determinants of Health in a Multi-Modal Deep Clustering Survival Model for Injury-Risk in Alzheimer's and Related Dementia Patients. *AAAI Workshop 2025*; Feb. *In press*. (oral presentation). +Equal contribution first author
 73. K Noshin+, **MR Boland**+, B Hou, V Lu, C Manning, L Shen, A Zhang. Uncovering Important Diagnostic Features for Alzheimer's, Parkinson's and Other Dementias Using Interpretable Association Mining Methods. *Pacific Symposium on Biocomputing*; **2025**; *in press*. +Equal contribution first author
 74. L Davidson, **MR Boland**. Investigating Three Classification Methods for Per/Poly-Fluoroalkyl Substance (PFAS) Exposure from Electronic Health Records and Potential for Bias. *AMIA Informatics Summit 2023*, Seattle, WA, USA (full paper). *In Press*.
 75. S Tadlock, C Phillips, ML Casal, MC Kraus, AR Gelzer, **MR Boland**. Development of an Informatics Algorithm to Link Seasonal Infectious Diseases to Birth-Dependent Diseases Across Species: A Case Study with Osteosarcoma. *AMIA Informatics Summit 2021*; *In press*.
 76. **MR Boland**, J Liu, C Balocchi, JR Meeker, R Bai, I Mellis, D Mowery, D Herman. A Method to Link Neighborhood-Level Covariates to COVID-19 Infection Patterns in Philadelphia Using Spatial Regression. *AMIA Informatics Summit 2021*; *In press*.
 77. S Canelon, **MR Boland**. Not all C-sections Are the Same: Investigating Emergency vs. Election C-section Deliveries as an Adverse Pregnancy Outcome. *Pacific Symposium on Biocomputing 2021*; *In press*.
 78. **MR Boland**, K Verspoor, MG Kann, S Golder, L Levine, K O'Connor, N Villanueva-Rosales, G Gonzalez-Hernandez. Advanced Methods for Big Data Analytics in Women's Health. *Pacific Symposium on Biocomputing 2021*; *In press*.
 79. L Davidson, **MR Boland**. Comparative Analysis and Evaluation of State-of-the-Art Medication Mapping Tools to Transform a Local Medication Terminology to RxNorm. *AMIA Informatics Summit 2020*, Houston, Tx, USA (full paper). *In press*.
 80. R Duan, **MR Boland***, JH Moore, Y Chen. ODAL: A one-shot distributed algorithm to perform logistic regressions on electronic health records data from multiple clinical sites. *Pacific Symposium on Biocomputing 2019*; **30-41**. *Equal-contribution first-author
 81. G Gonzalez-Hernandez, Z Lu, R Leaman, D Weissenbacher, **MR Boland**, Y Chen, J Du, J Fluck, CS Greene, J Holmes, A Kashyap, RL Nielsen, Z Ouyang, S Schaaf, JN Taroni, C Tao, Y Zhang, H Liu. PSB 2019 Workshop on Text Mining and Visualization for Precision Medicine. *Pacific Symposium on Biocomputing*; **2019**; 449-454.
 82. **MR Boland**, NP Tatonetti. In Search of 'Birth Month Genes': Using Existing Data Repositories to Locate Genes Underlying Birth Month-Disease Relationships. *AMIA Summits on Translational Science Proceedings*; **2016**; 189-198. **Finalist for Distinguished Student Paper Award 2016 AMIA Translational Summit**.
 83. N Nissim, **MR Boland**, R Moskovitch, NP Tatonetti, Y Elovici, Y Shahar, G Hripcsak. Active Learning Framework for Efficient Condition Severity Classification. *Artificial Intelligence in Medicine*. **2015**; 13-24. **Mario Stefanelli Best Student Paper Award**
 84. **MR Boland**, NP Tatonetti. Are All Vaccines Created Equal? Using Electronic Health Records to Discover Vaccines Associated With Clinician-Coded Adverse Events. *AMIA Summits on Translational Science Proceedings*; **2015**; 196-200.
1st Place Winner of Distinguished Student Paper Award 2015 AMIA Translational Summit.
 85. V Agarwal, P LePendur, T Podchiyska, R Barber, **MR Boland**, G Hripcsak, N Shah. Using narratives as a source to automatically learn phenotype models. *Data Mining for Medicine and Healthcare (DMMI) Proc*. **2014**; Washington DC, USA.
 86. N Nissim, **MR Boland**, R Moskovitch, NP Tatonetti, Y Elovici, Y Shahar, G Hripcsak. CAESAR-ALE: An Active Learning Enhancement for Conditions Severity Classification. *SIGKDD 2014*, New York, NY, USA.

87. **MR Boland**, NP Tatonetti, G Hripesak. CAESAR: a Classification Approach for Extracting Severity Automatically from Electronic Health Records. *Intelligent Systems for Molecular Biology Phenotype Day*. **2014**; Boston, MA.
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89. CL Gordon, S Pouch, LG Cowell, **MR Boland**, HL Platt, A Goldfain, C Weng. Design and evaluation of a bacterial clinical infectious diseases ontology. *AMIA Annu Symp Proc*. **2013**;2013:502-11. **Nominated for Student Paper Award AMIA 2013 Annual Meeting.**
90. **MR Boland***, R Miotto*, C Weng. A method for probing disease relatedness using common clinical eligibility criteria. *Studies in health technology and informatics*. **2013**;192:481-5. *Equal Contribution first-author
91. G Hruby, **MR Boland**, JJ Cimino, J Gao, AB Wilcox, J Hirschberg, C Weng. Characterizing Research Data Query Mediation at a Urology Department. *AMIA Summits on Translational Science Proceedings 2013*: 89-93. **Nominated for Distinguished Paper Award 2013 AMIA Translational Summit.**
92. **MR Boland**, S Tu, S Carini, I Sim, C Weng. EliXR-TIME: A Temporal Knowledge Representation for Clinical Research Eligibility Criteria. *AMIA Summits on Translational Science Proceedings 2012*: 71-80.

Editor of Book Chapter

93. P Orzechowski, M Stauffer, JH Moore, **MR Boland**. Personalized Medicine (chapter 1). In: Simulations in Medicine Computer-Aided Diagnostics and Therapy. April 20, **2020**. Edited by Irena Roterman-Konieczna.

Scientific Reports

1. L Davidson, S Canelon, **MR Boland**. Is Hydroxychloroquine Safe During Pregnancy? Observations from Penn Medicine. 2020.
2. YJ Lee, **MR Boland**, S Bakken, C Weng. Ontology Alignment for Linking a Homegrown Research Networking System to VIVO: Findings and Implications for Standards Development. 2013.
3. **MR Boland**, S Trembowelski, DC Dine, RC Steinman, S Bakken, C Weng. How Are Research Networking Systems Used and by Whom? A Case Study Using Google Analytics. 2013.

Referred Conference/Workshop/Symposium Presentations

1. E Ko, C McCallister, K Elkins, N Weldeab, N Koelper, J Chittams, S Hinkle, AB Huang, K Powell, MP Lynch, M Wachlin, H Harvie, S Kim, **MR Boland**, AJB Smith. **Abstract 11082**: Addressing disparities by implementing a supportive care program in oncology. *American Society of Clinical Oncology*. May 30-June 03, 2025. Chicago, Illinois, USA. To be published online at https://ascopubs.org/doi/abs/10.1200/JCO.2025.43.16_suppl.11082 on May 28, 2025.
2. T Te, **MR Boland***, S Ghadimi, JM Dzierzewski, C Alessi, J Martin, S Kremen, A Naeim, CH Fung*. 0442 Predicting Sleepiness From Verbal Reaction Time During Verbal Cognitive Testing. *Sleep*. May **2025**; 48, Issue Supplement_1, 2025, Pages A193–A194.
3. K Noshin+, **MR Boland+***, B Hou, V Lu, C Manning, L Shen, A Zhang. Understanding the Clinical Modalities Important in NeuroDegenerative Disorders, Alzheimer's Disease, and Risk of Patient Injury Using Machine Learning and Survival Analysis. *AMIA Informatics Summit 2025*; Mar. *in press*. (oral presentation). +Equal contribution first author
4. K Noshin+, **MR Boland+**, B Hou, V Lu, C Manning, L Shen*, A Zhang. Integrating Social Determinants of Health in a Multi-Modal Deep Clustering Survival Model for Injury-Risk in Alzheimer's and Related Dementia Patients. *AAAI Workshop 2025*; Feb. *in press*. (oral presentation). +Equal contribution first author

5. K Noshin+, **MR Boland***, B Hou, V Lu, C Manning, L Shen, A Zhang. Uncovering Important Diagnostic Features for Alzheimer's, Parkinson's and Other Dementias Using Interpretable Association Mining Methods. *Pacific Symposium on Biocomputing*; **2025**; *in press*. +Equal contribution first author
6. ***MR Boland**. Holy Multiples: Stories of Fifteen Twin/Triplet Saints and the Science Behind Twinning, Gender and Survival. *Society of Catholic Scientists Meeting*, June 7-9 , 2024. Mundelein, Illinois, USA. (poster)
7. E Ko, E Tubridy, SS Solorzano, F Simpkins, AJ Smith, **MR Boland**. Disparities in gynecologic oncology clinical trial availability in the United States: A state-level analysis. *American Society of Clinical Oncology*. May 31-June 04, 2024. Chicago, Illinois, USA. To be published online at asco.org/abstracts on May 23, 2024
8. E Ko, E Tubridy, C Cutri-French, S Solorzano, E McMinn, S Kim, L Martin, AJ Smith, F Simpkins, **MR Boland**. Impact of Geographic Region on Racial Disparities in Gynecologic Oncology Clinical Trial Enrollment. *Society of Gynecological Oncology 2024 Annual Meeting on Women's Cancer*. March 16-18, 2024. San Diego, CA, USA.
9. DJ Kellier, M Anto, **MR Boland**, B Marquez de Prado, NT Hughes, RA Hubbard, JH Holmes, S Ostapenko, JT Farrar, CL Szperka. Disparities in Medical Documentation for Pediatric Headache in the Emergency Department. *American Academy of Neurology Annual Meeting*; April 26, 2023. Boston, MA, USA.
10. DJ Kellier, M Anto, **MR Boland**, B Marquez de Prado, NT Hughes, JH Holmes, S Ostapenko, JT Farrar, CL Szperka. Predicting Migraine in the Pediatric Emergency Room through Machine Learning. *American Academy of Neurology Annual Meeting*; April 26, 2023. Boston, MA, USA.
11. R Clark, **MR Boland**. Characteristics of High-Performing Hospitals Where Black Women Experience Optimal Birth Outcomes. *Academy Health* (senior author), June 25, 2023, Seattle, WA, USA.
12. DJ Kellier, M Anto, **MR Boland**, B Marquez de Prado, NT Hughes, S Ostapenko, JT Farrar, CL Szperka. Predicting migraine in the pediatric emergency room visits for headache: A case for machine learning? American Headache Society, P-147, June 15 2023. Austin, TX, USA.
13. DJ Kellier, M Anto, **MR Boland**, B Marquez de Prado, NT Hughes, S Ostapenko, JT Farrar, CL Szperka. Disparities in medical documentation for pediatric headache in the emergency room. American Headache Society, P-58, June 15 2023. Austin, TX, USA.
14. L Davidson, ***MR Boland**. Investigating Three Classification Methods for Per/Poly-Fluoroalkyl Substance (PFAS) Exposure from Electronic Health Records and Potential for Bias. *AMIA Informatics Summit 2023*, Seattle, WA, USA (full paper).
15. S Noor, LM Davidson, **MR Boland**. Linking Social Vulnerability and Alzheimer's Disease Among Females. *ABRCMS (Annual Biomedical Research Conference for Minoritized Scientists) 2022*. November 9-12, 2022. Anaheim CA (poster).
16. A Allen, A Nadgauda, N Koepler, JR Meeker, D Shah, **MR Boland**, S Butts, S Senapti. Investigating the Effect of Social Vulnerability Index on Fibroid Recurrence and Metabolic Dysfunction. *Endocrine Society (ENDO 2022)*. Atlanta, Georgia. June 11-14, 2022.
17. B D'Alonzo, R Morse, AC Bretzin, ALC Schneider, S Canelon, **MR Boland**. Identifying Traumatic Brain Injury in Females from Electronic Health Records: Considerations for Defining a Cohort. *SAVIR (Society for advancement of violence and injury research) 2022*. Washington, DC (podium).
18. B D'Alonzo, R Morse, AC Bretzin, ALC Schneider, S Canelon, **MR Boland**. Identifying Traumatic Brain Injury in Females from Electronic Health Records: Considerations for Defining a Cohort. *AMIA Informatics Summit 2022*. Chicago Illinois (podium).
19. JR Meeker, HH Burris, R Bai, LD Levine, **MR Boland**. Neighborhood deprivation increases the risk of post-induction cesarean delivery. *AMIA Informatics Summit 2022*. Chicago Illinois (podium).
20. S Alur-Gupta, **MR Boland**, A Dokras. Impact of PCOS on coronavirus disease 2019 (COVID-19) incidence and severity in the United States. Androgen Excess-PCOS 19th Annual Meeting. Virtual Conference (podium). November 12-14, 2021.

21. S Tadlock, C Phillips, ML Casal, MC Kraus, AR Gelzer, **MR Boland**. Development of an Informatics Algorithm to Link Seasonal Infectious Diseases to Birth-Dependent Diseases Across Species: A Case Study with Osteosarcoma. *AMIA Informatics Summit 2021*. Virtual Conference (paper).
22. ***MR Boland**, J Liu, C Balocchi, JR Meeker, R Bai, I Mellis, D Mowery, D Herman. A Method to Link Neighborhood-Level Covariates to COVID-19 Infection Patterns in Philadelphia Using Spatial Regression. *AMIA Informatics Summit 2021*. Virtual Conference (paper).
23. S Canelon, S Butts, **MR Boland**. The Impact of Sickle Cell Status on Adverse Delivery Outcomes Using Electronic Health Record Data. *AMIA Informatics Summit 2021*. Virtual Conference (podium).
24. S Lynch, E South, D Mowery, **MR Boland**. Comparison and Analysis of Concordance for Two Popular Geocoding Methods Applied to Electronic Health Record Data. *AMIA Informatics Summit 2021*. Virtual Conference (poster).
25. ***MR Boland**, L Davidson, S Canelon, J Meeker, T Penning, JH Holmes, J Moore. Harnessing Electronic Health Records to Study Emerging Environmental Disasters: A Proof of Concept with Perfluoralkyl Substances (PFAS). *AMIA Annual Meeting 2020*, Virtual Conference (podium).
26. SP Canelon, H Burris, L Levine, **MR Boland**. Development and Evaluation of an Algorithm to Automatically Extract Delivery Episodes from Electronic Health Records. *AMIA Annual Meeting 2020*, Virtual Conference (poster).
27. J Meeker, H Burris, **MR Boland**. An Algorithm to Identify Patient Relocation Events ('Moves') from EHR Data. *AMIA Annual Meeting 2020*, Virtual Conference (poster).
28. O Wetherbee, J Meeker, C DeVoto, T Penning, J Moore, **MR Boland**. WellExplorer: An Integrative Resource Linking Hydraulic Fracturing Chemicals with Targeted Proteins, Hormonal Pathways and Geographic Location. *AMIA Annual Meeting 2020*, Virtual Conference (poster).
29. J Meeker, **MR Boland**. The association between neighborhood level exposures and progression to labor. *American Public Health Association (APHA) Annual Meeting 2020*, Virtual Conference (poster).
30. ***MR Boland**, ML Casal, M Kraus, A Gelzer. Applied Veterinary Informatics: Development of a Canine Data Repository to Uncover Disease-Breed Associations. *AMIA Informatics Summit 2020*, Houston, Tx, USA (podium). **Cancelled Due to Coronavirus.**
31. J Meeker, H Burris, **MR Boland**. An Algorithm to Identify Patient Relocation Events ('Moves') from Electronic Health Records Data. *AMIA Informatics Summit 2020*, Houston, Tx, USA (poster). **Cancelled Due to Coronavirus.**
32. L Davidson, **MR Boland**. Comparative Analysis and Evaluation of State-of-the-Art Medication Mapping Tools to Transform a Local Medication Terminology to RxNorm. *AMIA Informatics Summit 2020*, Houston, Tx, USA (full paper). **Presentation Cancelled Due to Coronavirus.**
33. P Ndebele-Ngwenya, S Canelon, JA Peterson, S Butts, **MR Boland**. Investigating the Relationship Between Income and Housing Quality on Women's Risk of Preterm Birth. *Society for Advancement of Chicanos/Hispanics and Native Americans in Science 2019* (poster).
34. S Canelon, **MR Boland**. Investigating Pregnancy-Related Health Outcomes Among Patients with Sickle Cell Disease and Linking with Health Disparities. *AMIA 2019*, November 16-20, Washington DC, USA. (poster presentation).
35. R Bai, GE Moran, J Antonelli, Y Chen, **MR Boland**. Spike-and-Slab Group Lasso for Grouped Regression and Sparse Generalized Additive Models. *Joint Statistical Meetings in Colorado 2019*, July 26 – August 1, Denver Colorado (USA) (podium presentation).
36. S Alur-Gupta, **MR Boland**, MD Sammel, K Barnhart, A Dokras. Higher incidence of postpartum complications in women with PCOS. *Fertility and Sterility 2019*; 112(3):e39
37. S Alur-Gupta, **MR Boland**, MD Sammel, K Barnhart, A Dokras. Higher incidence of postpartum complications in women with PCOS. *American Society for Reproductive Medicine 2019*. (podium presentation). **Won Top Award ASRM**
38. ***MR Boland**, S Alur-Gupta, L Levine, P Gabriel, G Gonzalez. Importance of Visit Type in Understanding Results from Phenome-Wide Association Studies: Results from a Visit-WAS. *ISMB 2019, July 21-25*, Basel, Switzerland. (poster presentation).

39. R Duan, **MR Boland***, JH Moore, Y Chen. ODAL: A one-shot distributed algorithm to perform logistic regressions on electronic health records data from multiple clinical sites. *In Press at 2019 Pacific Symposium on Biocomputing*. *Equal-contribution first-author (oral presentation).
40. G Gonzalez-Hernandez, Z Lu, R Leaman, D Weissenbacher, **MR Boland***, Y Chen, J Du, J Fluck, CS Greene, J Holmes, A Kashyap, RL Nielsen, Z Ouyang, S Schaaf, JN Taroni, C Tao, Y Zhang, H Liu. PSB 2019 Workshop on Text Mining and Visualization for Precision Medicine. *Pacific Symposium on Biocomputing*; **2019**; 449-454 (oral presentation).
41. ***MR Boland**, C DeVoto. Mapping Regional Effects of Exposure to Hydraulic Fracturing Fluid and Linking with Information on Toxicity. **Presented** at 2018 Fall Meeting, AGU, Washington DC, 10-14 December. (poster presentation)
42. ***MR Boland**, LH John, PR Rijnbeek. Condition Coding Practice Differences Between USA, Asia and Europe. **Presented** at *Observational Health Data Sciences and Informatics Symposium 2018*, October 12, Bethesda MD, USA (podium presentation).
43. ***MR Boland**, A Kashyap, J Xiong, JH Holmes, S Lorch. Construction of PEPPER: Prenatal Exposure Pubmed ParsER. *AMIA Annu Symp Proc. 2018*, San Francisco, CA, USA. *In Press*. (podium presentation)
44. F Martin-Sanchez, R Bellazzi, ***MR Boland**, G Lopez-Campos. Contributions from Informatics and Data science to Environmental Health and Exposome Research. *Medical Informatics in Europe (MIE) 2018*; Gottenburg, Sweden, 24-27 April. (panel presentation)
45. ***MR Boland**, F Polubriginof, NP Tatonetti. Development of A Machine Learning Algorithm to Classify Drugs of Unknown Fetal Effect. *American Society of Clinical Pharmacology & Therapeutics*. 2018; Orlando, FL, 21-24 March. **Top Scoring Poster Award**. (poster and flash talk presentation)
46. ***MR Boland**, P Parhi, P Gentine, NP Tatonetti. Climate Classification is an Important Factor in Assessing Quality-of-Care Across Hospitals. Presented at 2017 Fall Meeting, AGU, New Orleans, LA, 11-15 December.
47. ***MR Boland**, P Parhi, R Miotto, R Carroll, U Iqbal, P-A Nguyen, M Schuemie, SC You, D Smith, S Mooney, P Ryan, Y-C Li, RW Park, J Denny, JT Dudley, G Hripcsak, P Gentine, NP Tatonetti. Uncovering Exposures Responsible for Birth Season – Disease Effects: A Global Study. *Observational Health Data Sciences and Informatics Symposium 2017*, October 18, Bethesda MD, USA (presentation).
48. ***MR Boland**, NP Tatonetti. Assessing the Mutational Spectrum of 7-DeHydroCholesterol Reductase and the Toxicological Effects of Pharmacological Inhibition During the Prenatal Period; (Abstract / Prenatal, Perinatal and Reproductive Genetics #3260T). Presented at the 66th Annual Meeting of The American Society of Human Genetics, October 20, 2016, Vancouver, Canada.
49. ***MR Boland**, P Parhi, U Iqbal, A Nguyen, M Schuemie, SC You, P Ryan, J Li, RW Park, G Hripcsak, NP Tatonetti. A Climate-Wide Journey to Explore Mechanisms Underlying Birth Month-Disease Risk Associations: Preliminary Results. *Observational Health Data Sciences and Informatics Symposium 2016*, Washington DC, USA (poster).
50. ***MR Boland**, L Li, R Miotto, J Dudley, NP Tatonetti. [Cardiovascular Disease Risk And Birth Month? Discovering and Replicating Novel Birth Month Associations](#). *Data Science Day at Columbia University*, New York, NY, USA (poster), April 3, 2016
51. ***MR Boland**, NP Tatonetti. In Search of ‘Birth Month Genes’: Using Existing Data Repositories to Locate Genes Underlying Birth Month-Disease Relationships. *AMIA Summits on Translational Science Proceedings 2016*, San Francisco, CA, USA.
52. F Polubriaginof, A Perotte, **MR Boland**, D Vawdrey. Quality of Race and Ethnicity Data in Electronic Health Records. *AMIA Summits on Translational Science Proceedings 2016*, San Francisco, CA, USA (podium).
53. ***MR Boland**, G Hripcsak, P Ryan, NP Tatonetti. A Climate-Wide Journey to Explore Mechanisms Underlying Birth Month-Disease Risk Associations: A Call for Collaboration. *Observational Health Data Sciences and Informatics Symposium 2015*, Washington DC, USA (poster).
54. ***MR Boland**, Z Shahn, D Madigan, G Hripcsak, NP Tatonetti. Using Electronic Health Records to Uncover Disease-Birth Month Dependencies. *National Library of Medicine Informatics Trainee Conference 2015*, National Library of Medicine, Bethesda, MD, USA (focus session).

55. ***MR Boland**, Z Shahn, D Madigan, G Hripcsak, NP Tatonetti. Using Electronic Health Records to Uncover Disease-Birth Month Dependencies. *2015 Symposium on Advances in Genomics, Epidemiology and Statistics (SAGES)*, University of Pennsylvania Perelman School of Medicine, Philadelphia, PA, USA (poster). **Travel Award Received.**
56. N Nissim, **MR Boland**, R Moskovitch, NP Tatonetti, Y Elovici, Y Shahar, G Hripcsak. Active Learning Framework for Efficient Condition Severity Classification. *Conference on Artificial Intelligence in Medicine (AIME)*. **2015**; Pavia, Italy.
57. ***MR Boland**, NP Tatonetti. Are All Vaccines Created Equal? Using Electronic Health Records to Discover Vaccines Associated With Clinician-Coded Adverse Events. *AMIA Summits on Translational Science Proceedings 2015*, San Francisco, CA, USA.
58. ***MR Boland**, Z Shahn, D Madigan, G Hripcsak, NP Tatonetti. Using Electronic Health Records to Uncover Disease-Birth Month Dependencies. *AMIA Summits on Translational Science Proceedings 2015*, San Francisco, CA, USA (poster).
59. B Kidd, A Wroblewska, **MR Boland**, J Agudo, M Merad, NP Tatonetti, B Brown, J Dudley. Systematic integrative analysis of immune pharmacology. *AMIA Summits on Translational Science Proceedings 2015*, San Francisco, CA, USA (poster).
60. V Agarwal, P LePendur, T Podchiyska, R Barber, **MR Boland**, G Hripcsak, N Shah. Using narratives as a source to automatically learn phenotype models. *Data Mining for Medicine and Healthcare (DMMI) Proc. 2014*, Washington DC, USA.
61. N Nissim, **MR Boland**, R Moskovitch, NP Tatonetti, Y Elovici, Y Shahar, G Hripcsak. CAESAR-ALE: An Active Learning Enhancement for Conditions Severity Classification. *SIGKDD 2014*, New York, NY, USA.
62. ***MR Boland**, NP Tatonetti, G Hripcsak. CAESAR: a Classification Approach for Extracting Severity Automatically from Electronic Health Records. *Intelligent Systems for Molecular Biology Phenotype Day*. **2014**; Boston, MA.
63. **MR Boland**, R Miotto, C Weng. A method for probing disease relatedness using common clinical eligibility criteria. *MEDINFO 2013*, Copenhagen, Denmark.
64. YJ Lee, **MR Boland**, S Bakken, C Weng. Ontology Alignment for Linking a Homegrown Research Networking System to VIVO: Findings and Implications for Standards Development. *AMIA Summits on Translational Science Proceedings 2013* p.99 (poster).
65. ***MR Boland**, S Trembowelski, DC Dine, RC Steinman, S Bakken, C Weng. Using Google Analytics to Elucidate Research Networking System Usage. *Clinical and Translational Science Award Annual Meeting 2012* (poster).
66. YJ Lee, **MR Boland**, S Bakken, C Weng. Aligning One CTSA's Research Networking System to VIVO. *Clinical and Translational Science Award Annual Meeting 2012* (podium).
67. ***MR Boland**, G Hripcsak, DJ Albers, Y Wei, A Wilcox, J Wei, M Breene, J Zimmerman, C Weng. Linked Records Reveal Associations between Oral and Overall Health. *Clinical and Translational Science Award Annual Meeting 2012* (poster).
68. ***MR Boland**, SB Johnson, S Trembowelski, DC Dine, RC Steinman, S Bakken, C Weng. An Initial Log-based Usage Analysis of Research Networking Systems. *AMIA Summits on Translational Science Proceedings 2012*, p.103 (podium).
69. ***MR Boland**, S Tu, S Carini, I Sim, C Weng. EliXR-TIME: A Temporal Knowledge Representation for Clinical Research Eligibility Criteria. *AMIA Summits on Translational Science Proceedings 2012*: 71-80 (oral presentation).
70. ***MR Boland**, ML Sierk. Annotation of Putatively Conserved Non-Coding Regions in Branchiostoma Floridae. *National Conference for Undergraduate Research 2010*, Missoula, MT (poster).
71. ***MR Boland**, R Parker. Optimizing Cancer Chemotherapy Administration: Effect of Model Structure on Treatment Cost and Effect. *Undergraduate Research in Tissue Engineering (Pittsburgh-Based Affiliate Research Institutes) 2009*, Pittsburgh, PA (Poster No. 3).

72. ***MR Boland**, M Raab, M Sangimino. Data design & Flow for RAE: An interactive web-based biomedical informatics system for pediatric orthopedic patients. *Duquesne University Summer Research Symposium 2008*, Pittsburgh, PA. (Poster No. 84).
- *Mary Regina Boland Gave Oral Presentation of Research**

MEDIA COVERAGE

Selected Research

Environmental-Related Research

Per-FluoroAlkyl Substances (PFAS)

MR Boland, L Davidson, S Canelon, J Meeker, T Penning, JH Holmes, J Moore. Harnessing Electronic Health Records to Study Emerging Environmental Disasters: A Proof of Concept with Perfluoralkyl Substances (PFAS). *Nature Digital Medicine*. 2021; 4(1):122.

Excerpts of Coverage:

[Delaware Valley experts, residents call 'forever chemical' health screening recommendations a 'bold step'](#)

by Zoe Read, published on August 07, 2022. WHYY

WATERSHED

Delaware Valley experts, residents call 'forever chemical' health screening recommendations a 'bold step'



By Zoe Read · Updated Aug 7, 2022 6:07 pm



“....**Dr. Mary Regina Boland**, a biomedical informatics researcher who studies environmental health risks at the University of Pennsylvania’s Perelman School of Medicine, said if the patients getting tested discovered the source of their exposure, they could lower their health risks. “I see this as being useful in that if you find that your blood levels are high, then maybe you can filter your water and then your blood levels will go down. And then a lot of the risk for these diseases will then go away — not completely, but to some extent,” she said. **Boland** added that some people may relocate to a new residence before their neighborhood is discovered to be contaminated with PFAS. Therefore, it’s a good idea for anyone to consider getting tested.”

Hydraulic Fracturing Chemicals

O Wetherbee, J Meeker, C DeVoto, T Penning, J Moore, **MR Boland**. WellExplorer: An Integrative Resource Linking Hydraulic Fracturing Chemicals with Targeted Proteins, Hormonal Pathways and Geographic Location. *Database*. 2020; *In press*. DOI: 10.1093/database/baaa053

Excerpts of Coverage:

[Is Your Drinking Water Toxic? This App May Help You Find Out](#)

by Lauren Ingeno, published on September 22, 2020. PennMedicine News

News Release

Is Your Drinking Water Toxic? This App May Help You Find Out.

A new tool developed by Penn Medicine researchers informs users about their potential exposure to hydraulic fracturing chemicals

September 22, 2020

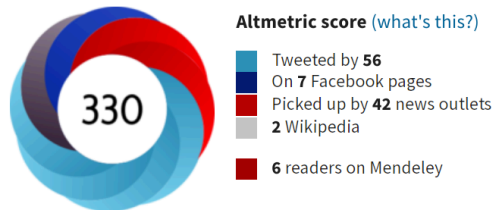
PROPORTION OF WELLS WITH CHEMICALS THAT
TARGET TESTOSTERONE PATHWAYS

“...The chemical mixtures used in fracking are known to regulate hormonal pathways, including testosterone and estrogen, and can therefore affect human development and reproduction,” **Boland** said. “Knowing about these chemicals is important, not only for researchers who may be studying health outcomes in a community, but also for individuals who may want to learn more about possible health implications based on their proximity to a well. They can then potentially have their water tested....”

Seasonal Exposure Research

MR Boland, MS Kraus, E Dziuk, AR Gelzer. Cardiovascular Disease Risk Varies by Birth Month in Canines. *Scientific Reports*. 2018; 8:7130.

Online attention

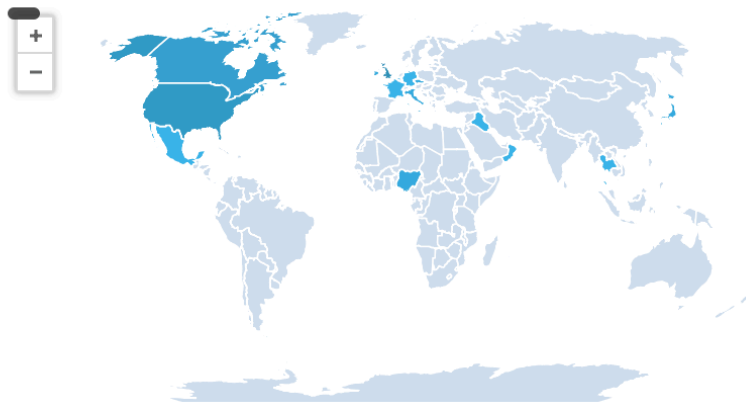


This Altmetric score means that the article is:

- in the 99th percentile (ranked 1,602nd) of the 255,521 tracked articles of a similar age in all journals
- in the 99th percentile (ranked 10th) of the 2,388 tracked articles of a similar age in *Scientific Reports*

Figure 1. Altmetric Profile with Score of 330 as of November 2018 Along with Twitter Breakdown of Individuals Talking about this Work. Altmetric has tracked 6,591,263 research outputs across all sources so far. Compared to these Boland et al. has done particularly well and is in the 99th percentile for all articles tracked of a similar age!

Twitter demographics



Excerpts of Coverage:



[How a Dog's birth month impacts its health](#) by Joseph Pinkstone, published on May 18, 2018. Daily Mail

*"...There is evidence that the time of year an animal is born causes a predisposition to a variety of illnesses and conditions. This is not limited to dogs, and also includes all species – even humans. For example, previous research found that people born in the northern hemisphere in January and April are at the highest risk of coronary heart disease. This is believed to be as a result of exposure to sunlight, pollution or the flu virus after birth. **Dr. Boland** believes this is the most likely cause of the disparity in heart attack rates amongst dogs. She said 'It looks like it could be early gestational exposure to air pollution'."*



[Penn study: Summer puppies more prone to heart disease](#) by Stacey Burling, published on May 21, 2018. Philadelphia Inquirer

*"...The research, published recently in *Scientific Reports*, has implications for people, whose hearts are remarkably similar to those of dogs, said **Mary Regina Boland**, an assistant professor of informatics in the biostatistics, epidemiology, and informatics department at the Perelman School of Medicine. Previous research has shown seasonal differences in human births and risk for heart disease. Boland's hypothesis is that the culprit in canines is*

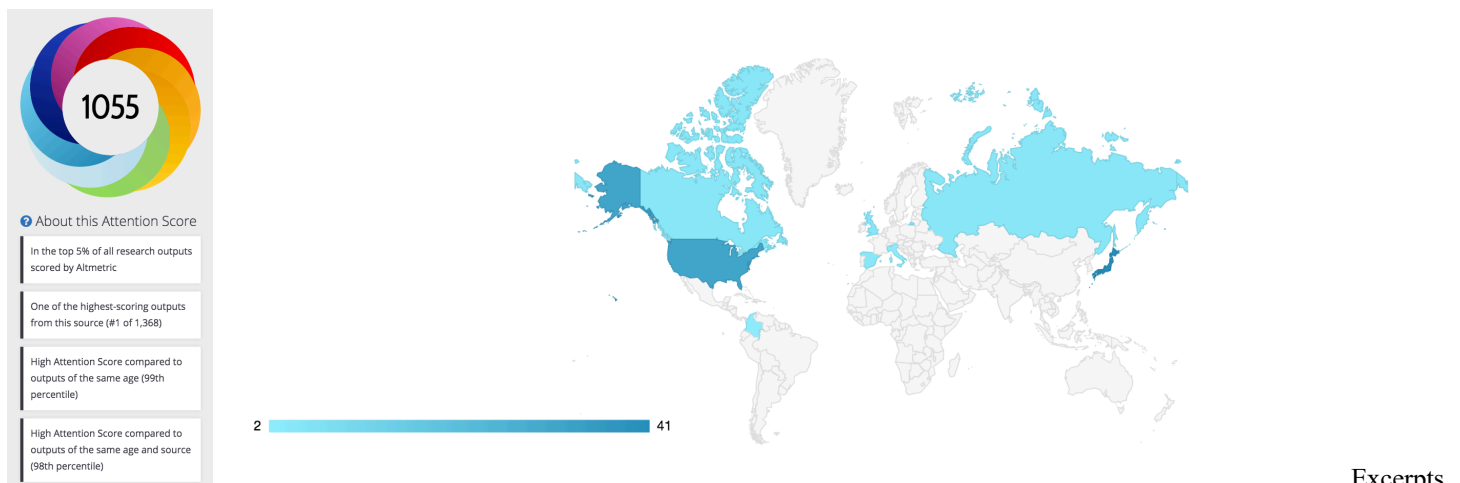
exposure to outdoor air pollution – fine air particulates, including dust and pollen – early in a puppy’s development. Pollution peaks in summer and winter, though time spent outdoors is much less then. Some genetic interaction with an environmental factor is likely, she said.”

Psychology Today

[A Dog’s Birth Month May Predict Its Cardiovascular Health](#) by Stanley Coren, published on May 23, 2018. Psychology Today

“...Dogs, overall, tend to be much less susceptible to heart diseases than humans; however their cardiovascular system is similar enough to people so that dogs have traditionally been used in research on various medical procedures for heart problems. For example, the first angiograms and the first pacemakers were tested on laboratory dogs. Given the similarity between humans and canines, a team of researchers headed by **Mary Regina Boland** from the Perelman School of Medicine at the University of Pennsylvania in Philadelphia, decided to see if a dog’s birthday was associated with its heart health in ways that are similar to those found in people and this research ust recently appeared in *Scientific Reports*. ”

MR Boland, Z Shahn, D Madigan, G Hripcsak, NP Tatonetti. Birth Month Affects Lifetime Disease Risk: A Phenome-Wide Method. *J Am Med Inform Assoc*. **2015**; 22(5):1042-53.



Excerpts
of

Figure 2. Altmetric Profile with Score of 1055 as of November 2016 Along with Twitter Breakdown of Individuals Talking about this Work. Altmetric has tracked 6,591,263 research outputs across all sources so far. Compared to these Boland et al. has done particularly well and is in the 99th percentile: it’s in the top 5% of all research outputs ever tracked by Altmetric (across all journals).

Coverage:

U.S. News & World Report

[What’s the Healthiest Month to Be Born In?](#) Written by Anna Medaris Miller, published on August 31, 2016. U.S. News and World Report

“Astrology aside, scientists are finding strong links between birth season and health risks. **Mary Regina Boland** is a Halloween baby – a scary birthday not only for the superstitious, but in some ways also for the health-conscious. In recent research, Boland, a Ph.D. fellow at Columbia University Medical Center, and colleagues found that babies born in October and November had among the highest risk of developing diseases, while those born in some spring and summer months were generally better protected.”

The Washington Post

[Scientists have discovered how the month you’re born matters for your health.](#) Written by Ana Swanson, published on June 15, 2015. Washington Post’s wonkblog.

“For much of history, astronomy and astrology were a big part of medicine. Nearly 2,500 years ago, Hippocrates, the father of Western medicine, observed a connection between the movements of the stars and disease, writing that “the contribution of astronomy to medicine is not a small one but a very great one indeed.”... The study also has impressive implications for how researchers can use the massive amounts of data that are currently being collected on people’s health to expand our understanding of disease. Because of certain provisions in the Affordable Care Act, public health records are now being collected on a daily basis around the United States, says **Mary Regina Boland**, the study’s first author, who is doing the research as part of her dissertation. “So in the future, there will be an unprecedented amount of data that will be available to use to for these kind of analysis.””



[How the Month You Were Born Can Shape Your Life.](#) Written by Esther Crain, published on June 10, 2015. Yahoo Parenting

"A summer birthday means warm weather, outdoor fun... and maybe problems in school.

If you knew that children born during a certain time of year were at a higher risk for educational delays or specific health issues, would you try to time conception to give birth during a particular month? The concept is not that crazy. That's because two new studies demonstrate the different ways that the season of a baby's birth can influence his or her odds of developing certain diseases and conditions, as well as the likelihood that the child will lag behind his or her peers during the first year of school."



[The Shocking Things Your Birthday Says About Your Health. Some months are dicier than others.](#) Written by Elizabeth Narins, published on June 10, 2015. Cosmopolitan. 17,300 shares

*"The study ruled out more than 1,600 associations between birth month and disease risk, but the data confirmed 39 suspected links between birthday and disease risk — and uncovered 16 new associations, including nine kinds of heart disease. The researchers even performed math~*mAgIc*~ to rule out any factors that could skew the results....The study authors attribute the risks to your mom's environment when she was pregnant, which could compromise your immune system, explains co-study author **Mary Regina Boland**, a Ph.D. student at Columbia University Medical Center. For instance, some **research** suggests that pregnant woman who contract the flu have babies who are more prone to cardiovascular disease."*



[How your birth month determines if you will get sick: Researchers reveal the ailments you are most at risk from.](#) Published on June 9, 2015. 6,500 shares

*"The month you were born does have an impact on how likely you are to become ill, researchers have claimed. They created software to scour birth and medical records to look for links.... 'Faster computers and electronic health records are accelerating the pace of discovery,' said the study's lead author, **Mary Regina Boland**, a graduate student at Columbia. 'We are working to help doctors solve important clinical problems using this new wealth of data.'"*



[Birth month may correlate to some diseases \(bad news, October\). Columbia University scientists find correlations between certain birth months and the risk of contracting 55 diseases. Because birthdays aren't depressing enough on their own.](#) Written by Danny Gallagher, published on June 8, 2015. CNet

*"I feel sorry for people born in or near December. The holidays and their birthdays are almost right on top of each other, so those folks have to wait almost a whole year for their next gift avalanche. Now I've found another reason to pity those birthed around the end of the year, especially those born in October. They might be more susceptible to certain diseases later in life, according to a new study. **Columbia University scientists** compiled the birthdays and medical records of patients from New York City databases and found that people with May birthdays may have the healthiest outcomes, while people born in October might be at the highest risk for certain diseases."*

Dissertation Work Mentioned in:



[Can Big Data Tell Us What Clinical Trials Don't](#) written by Veronique Greenwood, published on October 3, 2014 **New York Times article**

*"In the past, researchers noticed that being born in certain months or seasons appears to be linked to a higher risk of some diseases. In the Northern Hemisphere, people with multiple sclerosis tend to be born in the spring, while in the Southern Hemisphere they tend to be born in November; people with schizophrenia tend to have been born during the winter. There are numerous correlations like this, and the reasons for them are still foggy — a problem Tattonetti and a graduate assistant, **Mary Boland**, hope to solve by parsing the data on a vast array of outside factors"*

MR Boland, G Hripsak, DJ Albers, Y Wei, A Wilcox, J Wei, J Li, S Lin, M Breene, R Myers, J Zimmerman, PN Papapanou, C Weng. Discovering Medical Conditions Associated with Periodontitis Using Linked Electronic Health Records. **Journal of Clinical Periodontology**. 2013 May; 40(5):474-482.



[How Integrated EHRs can help guide clinical care](#) written by Kathy Kincade www.drbuspid.com on Feb. 8, 2013

*"this is one of the first studies to demonstrate how a combined medical and dental EHR system can be used to identify associations between oral disease and multiple medical conditions in a large patient population..... "This study demonstrates that vast amounts of clinical data made available by EHRs for both medical and dental care are useful and usable for discovering hidden disease knowledge, such as disease associations," lead author **Mary Regina Boland**"*



[Electronic Records Catching on in Dentistry](http://www.dentalsoftwareadvisor.com) by Mike Uretz for www.dentalsoftwareadvisor.com on Jan. 20, 2013

“Mary Regina Boland... ‘It highlights the importance of supporting interoperability among EHRs used across different disciplines so that we can better integrate such data to further research and clinical care, and it serves as a terrific case study showing the value of interdisciplinary collaboration in life science.’”