

Predrag Radivojac, Ph.D.

Professor

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EDUCATION

2003	Ph.D.	Computer and Information Sciences, Temple University, USA
1997	M.Sc.	Electrical Engineering, University of Belgrade, Serbia
1994	B.Sc.	Electrical Engineering, University of Novi Sad, Serbia

RESEARCH INTERESTS

Bioinformatics and Computational Biology

Understanding protein function and method development for function prediction. Post-translational modifications. Algorithm development for mass spectrometry (MS) and MS/MS proteomics.

Biomedical Informatics and Precision Medicine

Development of computational models for understanding, predicting and experimentally testing molecular mechanisms of disease. Variant effect prediction and genome interpretation. Variant classification for rare Mendelian phenotypes and risk estimation for complex phenotypes.

Machine Learning

Semi-supervised, structured-output learning and performance evaluation. Kernel-based inference on (hyper)graphs. Learning from statistically biased data, bias correction. Distance metrics.

PROFESSIONAL EXPERIENCE

2025-	Visiting Scientist, Broad Institute of MIT and Harvard, Cambridge, MA
2022-2025	Associate Dean of Research, Khoury College of Computer Sciences, Northeastern University
2020-	Affiliate Faculty, Roux Institute, Northeastern University, Portland, ME
2020-	Barnett Institute Fellow, Northeastern University
2020-2022	Co-director, Data Science Master's Program, Northeastern University
2019-	Professor (by courtesy), Department of Chemistry and Chemical Biology, Northeastern University
2019-2020	Associate Dean of Research, Khoury College of Computer Sciences, Northeastern University
2018-	Professor, Khoury College of Computer Sciences, Northeastern University
2018-2019	Consultant, SeLux Diagnostics Inc.
2018	Associate Chair, Department of Computer Science, Indiana University Bloomington
2016-2018	Co-director, Data Sciences and Informatics, Precision Health Initiative, Indiana University
2015-2018	Professor, Department of Computer Science, Indiana University Bloomington
2009-2018	Adjunct Faculty, Department of Statistics, Indiana University Bloomington

2010-2015 Associate Professor, Department of Computer Science and Informatics, Indiana University Bloomington

2005-2010 Assistant Professor, School of Informatics, Indiana University Bloomington

2004-2005 Visiting Assistant Professor, School of Informatics, Indiana University Bloomington

2004-2005 Consultant, Molecular Kinetics Inc.

2004 Post-doctoral fellow, School of Medicine, Indiana University Indianapolis

2002 Summer Visiting Researcher, Molecular Kinetics Inc.

2001 Summer Software Design Engineer, Natural Language Group, Microsoft Corp.

2000-2003 Teaching and Research Assistant, Temple University

2000 Teaching and Research Assistant, Washington State University

1994-1999 Associate Instructor and Research Associate (full-time position; 12/1997-12/1998 – military service) School of Engineering, University of Novi Sad, Serbia

TEACHING

CS5220: Supervised Machine Learning and Learning Theory (Fall 2023)

CS6140: Machine Learning (Springs 2019-2021, Falls 2019-2020, 2022, 2024)

CS6220: Data Mining Techniques (Fall 2021)

CSCI-B565: Data Mining (Spring 2016, Spring 2018)

CSCI-B365: Introduction to Data Analysis and Mining (Falls 2016-2017)

CSCI-B503: Algorithms Design and Analysis (Fall 2015)

CSCI-B490: Seminar in Computer Science: Data Mining (Falls 2014-2015)

CSCI-Y799: Computer Science Colloquium (Falls 2013-2014, Spring 2014)

CSCI-B555: Machine Learning (Falls 2010-2011, Springs 2013-2015)

INFO-I211: Information Infrastructure II (Springs 2008-2010)

INFO-I500: Fundamental Computer Concepts of Informatics (Falls 2005-2009)

INFO-I619: Structural Bioinformatics (Spring 2006, Spring 2008)

INFO-I400: Topics in Informatics: Data Mining (Spring 2005)

INFO-I400: Topics in Informatics: Genes and Blue Genes (Fall 2004)

AWARDS AND HONORS

Fellow, International Society for Computational Biology (ISCB), 2025

Honorary Fellow, Institute for Advanced Study, Technical University of Munich, Germany, 2017

August-Wilhelm Scheer Visiting Professor at Technical University of Munich, Germany, 2016

Senior Member, International Society for Computational Biology, 2015

National Science Foundation CAREER Award, 2007

Graduate student award, Temple University, 2002

Outstanding young researcher, University of Novi Sad, 1998

Travel grant, International Symposium on Information Theory, Ulm, Germany, 1997

PROFESSIONAL SOCIETIES

Fellow, Senior Member, International Society for Computational Biology (ISCB)

Member, American Society for Mass Spectrometry (ASMS)

Member, Association for Computing Machinery (ACM)

Member, American Society of Human Genetics (ASHG)

PROFESSIONAL ACTIVITIES

President, International Society for Computational Biology (ISCB), 2024-
Board of Directors, International Society for Computational Biology (ISCB), 2012-2021

Editorial Board, Bioinformatics, 2010-
Editorial Board, Human Genetics, 2021-

Associate Editor, PLoS Computational Biology, 2014-2021
Guest Associate Editor, PLoS Computational Biology, 2013-2014
Guest Editor, Human Mutation, 2016-2017, 2019
Guest Editor, Human Genetics, 2021-2022, 2024

Conference Chair

Critical Assessment of Genome Interpretation, CAGI7, 2025
Critical Assessment of Genome Interpretation, CAGI**, 2023
Critical Assessment of Genome Interpretation, CAGI6, 2022

Program Chair

Great Lakes Bioinformatics Conference, GLBIO 2015

Proceedings Chair

Intelligent Systems for Molecular Biology and European Conference on Computational Biology,
ISMB/ECCB 2019
Intelligent Systems for Molecular Biology, ISMB 2018

Area Chair

SIGKDD Conference on Knowledge Discovery and Data Mining, KDD 2023
Intelligent Systems for Molecular Biology and European Conference on Computational Biology,
ISMB/ECCB 2007
Intelligent Systems for Molecular Biology, ISMB 2006

Vice Chair

ACM Conference on Bioinformatics, Computational Biology and Biomedicine, ACM BCB 2011

Session Organizer

Annual Meeting of the American Society for Human Genetics, ASHG 2022
US-Serbia & West Balkan Data Science Workshop, Belgrade, Serbia, 2018
Pacific Symposium on Biocomputing, PSB 2006-2009, 2017, 2019-2020, 2026 (workshop)
Automated Function Prediction Special Interest Group Meeting at ISMB, AFP-SIG 2011-2016
Function Community of Special Interest (COSI) at ISMB, Function-COSI 2017-2019

Program Committees:

Intelligent Systems for Molecular Biology, ISMB 2016, 2020, 2022, 2024-2026
SIGKDD Conference on Knowledge Discovery and Data Mining, KDD 2022 (meta-reviewer)
Intelligent Systems for Molecular Biology and European Conference on Computational Biology,
ISMB/ECCB 2013, 2017, 2021, 2025
AAAI Conference on Artificial Intelligence, AAAI 2019-2021, 2025 (senior meta-reviewer), 2026
(senior meta-reviewer)

ACM Conference on Bioinformatics, Computational Biology, and Health Informatics, ACM BCB 2015-2017, 2019-2021

SIAM International Conference on Data Mining, SDM 2020 (meta-reviewer)

ISCB-Asia International Conference on Genome Informatics, GIW/ISCB 2014

International Workshop on Data Mining in Bioinformatics, BioKDD 2003, 2013-2014, 2019

ACM Conference on Bioinformatics, Computational Biology and Biomedical Informatics, ACM BCB 2012-2013

Research in Computational Molecular Biology, RECOMB 2011

Computational Systems Bioinformatics, CSB 2010

European Conference on Machine Learning, ECML 2009-2010

AMIA Summit on Translational Bioinformatics, AMIA STB 2009-2010

SIAM International Conference on Data Mining, SDM 2009

European Conference on Computational Biology, ECCB 2008

Pattern Recognition in Bioinformatics, PRIB 2005-2007

IEEE Symposium on Computational Intelligence in Bioinformatics and Computational Biology, IEEE CIBCB 2007

Session Chairing

US-Serbia & West Balkan Data Science Workshop, Belgrade, Serbia, 2018

Intelligent Systems for Molecular Biology, ISMB, 2006-2007, 2013-2014, 2016

ACM Conference on Bioinformatics, Computational Biology and Health Informatics, ACM BCB 2015

ACM Conference on Bioinformatics, Computational Biology and Biomedical Informatics, ACM BCB 2013

Intelligent Systems for Molecular Biology, ISMB, Highlights, 2011-2012

Intelligent Systems for Molecular Biology, ISMB, Late Breaking Research, 2011-2012

AMIA Summit on Translational Bioinformatics, AMIA STB, Late Breaking Research, 2010

Scientific Panels

Panelist, ELIXIR All Hands Workshop, Virtual Event, 2022

Panelist, VarI COSI, International Conference on Intelligent Systems for Molecular Biology and European Conference on Computational Biology (ISMB/ECCB 2021), Virtual Event, 2021

Panelist, Function COSI, International Conference on Intelligent Systems for Molecular Biology and European Conference on Computational Biology (ISMB/ECCB 2021), Virtual Event, 2021

Panelist, Pacific Symposium on Biocomputing (PSB 2020), Virtual Event, 2020

Panelist, US-Serbia & West Balkan Data Science Workshop, Belgrade, Serbia, 2018

Panelist, Junior Principal Investigators Meeting, International Conference on Intelligent Systems for Molecular Biology (ISMB 2014), Boston, Massachusetts

Panelist, Pacific Symposium on Biocomputing (PSB 2009), Big Island, Hawaii, 2009

Panel chairperson, Pacific Symposium on Biocomputing (PSB 2008), Big Island, Hawaii, 2008

Panelist, Critical Assessment of Techniques for Protein Structure Prediction (CASP7), Pacific Grove, California, 2006

Panel chairperson, Pacific Symposium on Biocomputing (PSB 2006), Maui, Hawaii, 2006

Reviewer (journals)

Bioinformatics

Bioinform Adv

Biostatistics

BMC Bioinformatics

Brief Bioinform

Genome Biol
Genomics
Hum Genet
Hum Mutat
IEEE-ACM Trans Comput Biol Bioinform
J Am Stat Assoc
J Bioinform Comput Biol
J Biomed Inform
J Chem Inf Model
J Mach Learn Res
J Mass Spectrom
J Mol Biol
J Proteome Res
Mol Biol Evol
Nat Commun
Nat Methods
Nat Protoc
Nucleic Acids Res
PeerJ
PLoS Comput Biol
PLoS One
PLoS Pathog
Proc Natl Acad Sci U S A
Proteins
Proteomics

Reviewer (conferences)

ISIT 2015
AMIA STB 2010, 2011
CSB 2004, 2007
PSB 2004-2005, 2010, 2016
RECOMB 2008
SDM 2003-2004

Grant panelist and reviewer

National Science Foundation, 2008, 2011, 2012, 2019
National Institutes of Health, 2013, 2015, 2016, 2018, 2019, 2020, 2021, 2022, 2023, 2025
Genome Canada, 2012
Ontario Genomics Institute, 2013
Biotechnology and Biological Sciences Research Council, 2016

EDITED VOLUMES

Computational Interpretation of Human Genetic Variation. *Human Genetics*, Volume 141, Issue 10, 2022.

Editors: Yana Bromberg and Predrag Radivojac.

Selected proceedings from the Automated Function Prediction Meeting 2011. *BMC Bioinformatics*, Volume 14, Supplement 3, 2013. Editors: Iddo Friedberg and Predrag Radivojac.

Statistical mass spectrometry-based proteomics. *BMC Bioinformatics*, Volume 13, Supplement 16, 2012.
Editors: Predrag Radivojac and Olga Vitek.

ADVISEE AWARDS AND HONORS

Jici Jiang, 2024, ISCB Travel Award for PSB 2026.
M. Clara de Paolis Kaluza, 2024, Travel Award for KDD 2025.
M. Clara de Paolis Kaluza, 2024, ISCB Travel Award for ISMB 2024.
Haneen Abderrazzaq, 2023, Graduate Research Fellowship, National Science Foundation.
M. Clara de Paolis Kaluza, 2022, Travel Award for PSB 2023.
Rachel Hoffing, Abstract & Poster Reviewer's Choice Award, ASHG 2022.
Hoyin Chu, 2020, Civic Digital Fellow, Office of Data Science and Emerging Technologies, the National Institute of Allergy and Infectious Diseases.
Justin Delano, 2019, Travel Fellowship for Critical Assessment for Genome Interpretation (CAGI), National Institutes of Health
Kymberleigh Pagel, 2018, Travel Fellowship for Critical Assessment for Genome Interpretation (CAGI) at ISMB 2018
Kymberleigh Pagel, 2017, Ian Lawson Van Toch Memorial Award for Outstanding Student Paper at ISMB/ECCB 2017
Kymberleigh Pagel, 2017, Travel Fellowship for ISMB/ECCB 2017, International Society for Computational Biology
Jose Lugo-Martinez, 2017, Lane Fellowship, Carnegie Mellon University
Shantanu Jain, Computer Science Graduate Research Award, Indiana University
Kymberleigh Pagel, 2017, Travel Fellowship for the Sackler Colloquium on Reproducibility of Research, Washington, DC, National Science Foundation
Vikas Pejaver, 2016, eScience Moore/Sloan Data Science Postdoctoral Fellowship, University of Washington
Shantanu Jain, 2016, Travel Fellowship for NIPS 2016, Barcelona, Spain
Jose Lugo-Martinez, 2015, Travel Fellowship for the Biomedical Data Research Workshop at SHILAC 2015, San Juan, Puerto Rico
Chao Ji, 2015, Travel Fellowship for the ACM BCB 2015 conference, Atlanta, GA, National Science Foundation
Ruiyu Yang, 2015, Full Fellowship for the Math Modeling in Industry XIX Workshop, Institute for Mathematics and its Applications, University of Minnesota, Minneapolis, MN
Kymberleigh Pagel, 2015, Travel Fellowship for the Sackler Colloquium on Drawing Causal Inference from Big Data, Washington, DC, National Science Foundation
Yuxiang Jiang, 2014, Travel Fellowship for ECCB 2014
Vikas Pejaver, 2014, Travel Fellowship for the ISCB Student Council Symposium at ISMB 2014
Kymberleigh Pagel, 2014, Travel Fellowship for ISMB 2014, National Science Foundation
Jacob Weimer, 2014, Best Poster Award, Research Experience for Undergraduates, School of Informatics and Computing, Indiana University
Wyatt Clark, 2014, Travel Award for PSB 2014, National Library of Medicine, National Institutes of Health
Wyatt Clark, 2013, Ian Lawson Van Toch Memorial Award for Outstanding Student Paper at ISMB/ECCB 2013
Jose Lugo-Martinez, 2013, Travel Fellowship for 2013 SACNAS National Conference, SACNAS
Jose Lugo-Martinez, 2013, Broadening Participation in Data Mining Travel Scholarship for ACM SIGKDD 2013
Wyatt Clark, 2013, Travel Award for ISMB 2013, International Society for Computational Biology
Wyatt Clark, 2013, Travel Award for the Phenoscape Workshop, National Science Foundation

Kymberleigh Pagel, 2013, Travel Fellowship for CAGI 2013, National Institutes of Health
 Jose Lugo-Martinez, 2012, Travel Award for Rocky 2012, Federation of American Societies for Experimental
 Biology (FASEB), Maximizing Access to Research Careers (MARC) Program
 Kymberleigh Pagel, 2012, Travel Award for Rocky 2012, Federation of American Societies for Experimental
 Biology (FASEB), Maximizing Access to Research Careers (MARC) Program
 Jose Lugo-Martinez, 2012, Best Graduate Student Oral Presentation in Computer Science, SACNAS National
 Conference, Seattle, Washington
 Wyatt Clark, 2012, Center for Bioinformatics Research Fellowship, Indiana University
 Fuxiao Xin, 2011, Travel Award for Grace Hopper Conference, Portland, Oregon, Women in Informatics and
 Computing, Indiana University
 Fuxiao Xin, 2011, Don Brown Bioinformatics Fellowship, School of Informatics and Computing, Indiana
 University
 Wyatt Clark, 2011, Travel Award for AFP/CAFA SIG at ISMB 2011, National Institutes of Health
 Jose Lugo-Martinez, 2011-2012, Computer Packages Inc. Hispanic College Fund Scholarship
 Chantel Mikiska, 2011, Hutton Honors College Professional Experience Internship Award
 Jose Lugo-Martinez, 2010-2013, Ford Foundation Predoctoral Diversity Fellowship
 Jose Lugo-Martinez, 2010-2011, Computer Science Corporation Hispanic College Fund Scholarship
 Shuyan Li, 2010, Travel Award for PSB 2010, National Library of Medicine, National Institutes of Health
 Jose Lugo-Martinez, 2009-2010, Graduate Scholars Fellowship at Indiana University
 Jose Lugo-Martinez, 2009-2010, Google Hispanic College Fund Scholarship
 Amrita Mohan, 2007-2009, Fellowship, Eli Lilly and Company Foundation
 Pedro Alves, 2007, Travel Award for PSB 2007, National Institutes of Health
 Amrita Mohan, 2007, Teaching Award, School of Informatics, Indiana University
 Amrita Mohan, 2007, Travel Award from NSF to attend Academic Workshop for Underrepresented Assistant
 Professors, Associate Professors, and Senior Doctoral Students, organized by the Coalition to Diversify
 Computing
 Wyatt Clark, 2006, Travel Award for SDM 2006, Lawrence Livermore National Laboratory
 Narmada Jayasankar, Best Poster Award, InWIC 2006
 Kenneth Daily, 2005, Travel Award for CIBCB 2005, IEEE Computational Intelligence Society
 Stuart Young, 2004, McNair Fellowship, Indiana University

TALKS AND LECTURES

2026, Pacific Symposium on Biocomputing, Workshop, invited talk
 2025, ISCB-China Conference, Shenzhen, China, keynote
 2025, Mohamed bin Zayed University of Artificial Intelligence, Abu Dhabi, UAE, invited talk
 2025, Curating the Clinical Genome (CCG 2025), Hinxton, UK, invited talk
 2025, Seoul National University, distinguished talk
 2025, AIxBio Global Forum, Seoul, South Korea, keynote
 2025, Hanyang University, invited talk
 2025, Pacific Symposium on Biocomputing, session keynote
 2025, Pacific Symposium on Biocomputing, Workshop, invited talk
 2024, NIH Introduction to AI for Leadership Workshop, Bethesda, MD, invited talk
 2024, University of Nebraska, Omaha, invited talk
 2024, DeepMind Workshop at ASHG 2024, Denver, Colorado, invited talk
 2024, AI-Bioscience Collaborative Summit by the US Department of State, Washington, DC, invited talk
 2023, Iowa State University, invited talk
 2023, Belgrade Bioinformatics Conference (BelBi 2023), keynote

2023, ACMG Annual Clinical Genetics Meeting, Salt Lake City, Utah, invited talk
 2022, Medical Data Science Series, University of Washington, invited talk
 2022, Critical Assessment of Genome Interpretation (CAGI 2022), talk
 2021, International Workshop on Data Mining in Bioinformatics (BioKDD 2021), invited talk
 2021, Belgrade Bioinformatics Conference (BelBi 2021), invited talk
 2021, Temple University-NSF Workshop on Understanding Epistasis, invited talk
 2021, Rutgers University-NASA ENIGMA Bioinformatics Boot Camp, invited lecture
 2020, Medical and Population Genetics, Broad Institute of MIT and Harvard, invited talk
 2020, Function COSI Meeting at ISMB 2020, Virtual Conference
 2019, Critical Assessment of Genome Interpretation (CAGI*), invited talk
 2019, Department of Computer Science, Worcester Polytechnic Institute, invited talk
 2019, Sixteenth Annual Conference of the Midsouth Computational Biology & Bioinformatics Society (MCBIOS 2019), keynote
 2019, Mathematics and CSAIL, Massachusetts Institute of Technology, invited talk
 2018, Icahn School of Medicine at Mount Sinai, invited talk
 2018, Belgrade Bioinformatics Conference (BelBi 2018), Belgrade, Serbia, keynote
 2018, College of Computer and Information Science, Northeastern University, invited talk
 2017, Department of Biochemistry and Microbiology, Rutgers University, invited talk
 2017, IEEE International Conference on Bioinformatics and Biomedicine (IEEE BIBM 2017), Kansas City, Missouri, U.S.A., keynote
 2017, Meeting on Methods & Tools for Assessing the Impact of Genetic Variants, Human Genome Variation Society, Orlando, Florida, U.S.A., keynote
 2016, Challenges in Machine Learning, Workshop at Advances in Neural Information Processing Systems (NIPS 2016), Barcelona, Spain
 2016, Fakultät für Informatik, Technische Universität München, Germany, invited talk
 2015, International Conference on Intelligent Biology and Medicine (ICIBM 2015), invited talk
 2015, School of Engineering, University of Novi Sad, invited talk
 2015, School of Medicine, University of Louisville, invited talk
 2015, Genomics, Bioinformatics & Systems Biology joint colloquium, University of California San Diego, invited talk
 2015, Training the next generation of quantitative biologists in the era of big data, workshop at Pacific Symposium on Biocomputing (PSB 2015), Kohala Coast, Hawaii, invited talk
 2014, Department of Computer Science and Informatics, University of Belgrade, Serbia, invited talk
 2014, International Biocuration Meeting, Toronto, Canada, invited talk
 2013, ACM Conference on Bioinformatics, Computational Biology and Biomedical Informatics (ACM BCB 2013), Bethesda, Maryland, tutorial
 2013, International Workshop on Data Mining in Bioinformatics (BioKDD 2013), Chicago, Illinois, invited talk
 2013, Intelligent Systems for Molecular Biology and European Conference on Computational Biology (ISMB/ECCB 2013), Berlin, Germany, highlights talk
 2013, Critical Assessment of Genome Interpretation (CAGI 2013), Berlin, Germany
 2013, Department of Computer Science and Informatics, University of Belgrade, Serbia, invited talk
 2013, Biostatistics Program, Stanford University, invited talk
 2012, Department of Statistics, Indiana University, invited talk
 2012, Data Mining in Bioinformatics (DMB 2012), Belgrade, Serbia, invited talk
 2011, Rocky Mountain Bioinformatics Conference (Rocky 2011), Snowmass Village, Colorado
 2011, Automated Function Prediction Special Interest Group (AFP-SIG) Meeting at ISMB/ECCB 2011, Vienna, Austria
 2011, Post-Genome Wide Association Initiative Meeting, Bethesda, Maryland, invited talk by the National Cancer Institute

2010, Buck Institute for Research on Aging, invited talk
 2010, Department of Computer and Information Science, Temple University, invited talk
 2010, Department of Computer and Information Science, Delaware State University, invited talk
 2010, Department of Bioengineering and Therapeutic Sciences, University of California San Francisco, invited talk
 2009, Department of Biological Sciences, University of Maryland Baltimore County, invited talk
 2009, Department of Microbiology, Miami University, invited talk
 2009, Genentech Inc., invited talk
 2009, Department of Computer Science and Engineering, University of Notre Dame, invited talk
 2009, Pacific Symposium on Biocomputing (PSB 2009), Big Island, Hawaii, tutorial
 2008, Department of Statistics, Purdue University, invited talk
 2008, European Conference on Computational Biology (ECCB 2008), Cagliari, Italy
 2008, School of Engineering, University of Novi Sad, Serbia, invited talk
 2008, Automated Function Prediction Special Interest Group (AFP-SIG) Meeting at ISMB, Toronto, Canada
 2008, Automated Function Prediction Special Interest Group (AFP-SIG) Meeting at ISMB, Toronto, Canada, tutorial, with Prof. Yanay Ofran, Bar-Ilan University, Israel
 2007, Symposium on Interface: Computing Science and Statistics. Theme: Systems Biology. Philadelphia, Pennsylvania, invited talk
 2006, Methods for Protein Structure Analysis (MPSA), Lille, France
 2006, Annual Indiana Bioinformatics Conference, Indianapolis, Indiana, invited talk
 2006, Indiana Centers for Applied Protein Sciences (INCAPS), Indianapolis, Indiana, invited talk
 2005, School of Engineering, University of Novi Sad, Serbia, invited talk

ACTIVE FUNDING

Biological pathway and enzyme discovery in microbes for plastic degradation using machine learning

PI: Ayan Paul, Northeastern University

Breaking, Inc.

2025

Supporting IGVF by modeling genetics, function, and phenotype with machine learning

PI: Predrag Radivojac

National Institutes of Health U01HG012022

09/01/21-05/31/26

co-Is: Sean Mooney, University of Washington and Lilia Iakoucheva, UCSD

Total award: \$3,513,717 (requested)

Fine-grained annotation of the protein universe through a community of practice

PI: Iddo Friedberg, Iowa State University

National Institutes of Health R01GM145937

09/25/2024-08/31/2028

Role: co-I

Total award: \$2,038,549 (requested)

Center for Critical Assessment of Genome Interpretation

PI: Steven Brenner, University of California, Berkeley

National Institutes of Health U24HG007346

06/01/20-05/31/26

Role: co-I

Total award: \$3,890,307 (requested)

COMPLETED FUNDING

- Machine learning approaches towards risk assessment and prediction of adverse pregnancy outcomes; Total award: \$1,622,602 (requested); 08/01/20-07/31/24; National Institutes of Health R01HD101246; MPIs David Haas, Indiana University, Predrag Radivojac, Northeastern University, Sriraam Natarajan, University of Texas at Dallas.
- MathWorks Microgrant. Tools for positive-unlabeled learning: addressing noisy and biased data. Radivojac, P (PI) MathWorks; 05/01/20-04/30/21; Total award: \$25,000.
- The Precision Health Initiative. Indiana University Grand Challenges Initiative. PI: Anantha Shakhar, Indiana University School of Medicine. 09/01/16-08/31/21; Past Role: Co-Director for Data Sciences and Informatics (w/ Shaun Grannis, Kun Huang) from 2016-2018. Current Role: The Precision Health Initiative Faculty; Total award: \$120,000,000 (\$13M to School of Informatics, Computing, and Engineering).
- Bilateral BBSRC-NSF/BIO Collaborative Research: ABI Development: A Critical Assessment of Protein Function Annotation; 09/01/15-08/31/19; National Science Foundation, DBI-1458477; Total award: \$1,565,332 (USA) + £434,604 (UK). To PR: \$282,204. MPIs-USA: Iddo Friedberg (Iowa State), Casey Greene (U Pennsylvania), Sean Mooney (U Washington), Predrag Radivojac; MPIs-UK: Maria Martin (EBI), Claire O'Donovan (EBI)
- A computational framework for predicting the impact of mutations in autism; Total award: \$1,370,000; 09/25/14-09/24/18; National Institutes of Health, R01 MH105524; MPIs: Lilia Iakoucheva (UCSD) and Predrag Radivojac (Indiana University)
- Computational approaches to protein identification and quantification using MS/MS; Total award: \$1,890,595; 10/01/12-08/31/17; National Institutes of Health, R01 GM103725; PI: Predrag Radivojac.
- Informatic profiling of clinically relevant mutation; Total award: \$1,979,307; 09/30/11-08/31/16; National Institutes of Health, R01 LM009722; PI: Sean Mooney, Buck Institute for Research on Aging; Role: co-Investigator.
- Automated function prediction (AFP 2014); \$5,000; 06/01/14-05/31/15; National Institutes of Health, R13 HG007807; PI: Predrag Radivojac.
- CAREER: Bioinformatics of protein post-translational modifications; Total award: \$595,948; 07/01/07-06/30/13; National Science Foundation, DBI-0644017; PI: Predrag Radivojac; \$12,500 REU Supplement awarded as of 07/2009 for one additional undergraduate student.
- Computational approaches to protein identification and quantification using MS/MS; Total award: \$813,146; 09/15/08-08/31/12; National Institutes of Health, R01 RR024236-01A1; PI: Predrag Radivojac.
- Informatic profiling of clinically relevant mutation; Total award: \$1,314,515; 10/01/07-09/30/11; National Institute of Health, R01 LM009722-01; PI: Sean Mooney, Indiana University School of Medicine; Role: co-Investigator.
- Automated function prediction (AFP 2011); \$20,000; 01/01/11-12/31/11; National Institutes of Health, R13 HG006079-01A1; PI: Predrag Radivojac.
- APT: the analytical proteomics team; Total award: \$5,959,801; 10/01/06-08/31/11; National Cancer Institute, U24 CA126480-01; PI: Fred Regnier, Purdue University; Role: co-I.
- The center of excellence in systems microbiology; Total award: \$1,895,385; 01/01/08-12/31/10; MetaCyt, Indiana University Award; PI: Yves Brun, Indiana University, Department of Biology; Role: co-PI.
- A hypothesis testing approach to identification and assessment of statistical significance of peptides and proteins in shotgun proteomics; Total award: \$49,919; 01/02/07-12/31/07; CLSIR, Purdue University - Indiana University pilot grant application program; PI: Olga Vitek, Purdue University; Role: collaborator.

Development of a machine learning tool for peptide identification from tandem mass spectrometry data;
\$32,408; 06/01/05-05/31/06; Indiana University Faculty Research Support Program; PI: Randy J. Arnold;
Role: co-PI.

CURRENT GROUP MEMBERS

Post-doctoral appointments:

Shantanu Jain

Ph.D. students:

Haneen Abderrazzaq

Clara De Paolis Kaluza

Rachel Hoffing

Jici Jiang, with Benjamin Gyori

Karna Mendonca

Ross Stewart

Janmejay Vyas

THESES ADVISED

Rashika Ramola

Thesis title: Evaluation of protein function prediction algorithms

Program: Computer Science, Northeastern University

Defense: August 4, 2025

First Ph.D. position: Applied Scientist, TehriHills Consultancy, Boston, Massachusetts

Daniel Zeiberg

Thesis title: Learning calibrated classifiers from nonrepresentative data

Program: Computer Science, Northeastern University

Defense: November 12, 2024

First Ph.D. position: Post-doctoral fellow, Institute for Experiential AI, Northeastern University

Yisu Peng

Thesis title: Machine learning methods for FDR estimation in mass-spectrometry proteomics

Program: Computer Science, Northeastern University

Defense: July 26, 2024

First Ph.D. position: Software engineer, Google, Mountain View, California

Yuxiang Jiang

Thesis title: Protein function prediction and its application to prioritizing disease-associated mutations

Program: Computer Science, Indiana University

Defense: June 29, 2020

First Ph.D. position: Software engineer, Google, Mountain View, California

Kymerleigh Pagel

Thesis title: Computational assessment of the molecular mechanisms impacted by genetic variation

Program: Informatics, Indiana University

Defense: November 29, 2018

First Ph.D. position: Post-doctoral fellow, Johns Hopkins University, Baltimore, Maryland

Shantanu Jain

Thesis title: Algorithms and approaches for positive-unlabeled learning

Program: Computer Science, Indiana University

Defense: August 15, 2018

First Ph.D. position: Associate Research Scientist, Northeastern University, Boston, Massachusetts

Currently: Research Scientist, Northeastern University, Boston, Massachusetts

Ruiyu Yang

Thesis title: Different methods for phylogenetic reconstruction and their properties

Program: Mathematics, Indiana University

Defense: December 12, 2017

First Ph.D. position: Data Scientist, JP Morgan, New York, New York

Jose Lugo-Martinez

Thesis title: Flexible kernel functions for learning on graphs and hypergraphs

Program: Computer Science, Indiana University

Defense: December 12, 2016

First Ph.D. position: Post-doctoral Fellow, Indiana University, Bloomington, Indiana

Currently: Assistant Professor, Carnegie Mellon University, Pittsburgh, Pennsylvania

Vikas Pejaver

Thesis title: Computational methods for understanding the impact of amino acid substitutions on protein function

Program: Informatics, Indiana University

Defense: November 17, 2016

First Ph.D. position: eScience Moore/Sloan Data Science Post-doctoral Fellow, University of Washington, Seattle, Washington

Currently: Assistant Professor, Mount Sinai School of Medicine, New York, New York

Chao Ji

Thesis title: Machine learning algorithms for peptide identification and protein quantification in proteomics

Program: Informatics, Indiana University

Defense: April 11, 2016

First Ph.D. position: Research Associate, Indiana University, Bloomington, Indiana

Wyatt Clark

Thesis title: Understanding protein function through statistical inference and evolutionary analysis

Program: Informatics

Defense: June 4, 2013

First Ph.D. position: Post-doctoral Fellow, Yale University, New Haven, Connecticut

Currently: Staff Scientist, Metagenomi, Emeryville, California

Fuxiao Xin

Thesis title: Methods for predicting functional residues in protein structures and understanding molecular mechanisms of disease

Program: Informatics, Indiana University

Defense: July 12, 2012

First Ph.D. position: Lead Scientist in Machine Learning, General Electric Global Research, San Ramon, California

Currently: Staff Software Engineer/Researcher, Google, San Diego, California

Yong Li

Thesis title: Statistical learning algorithms for protein inference and quantification in proteomics

Program: Informatics, Indiana University

Defense: August 11, 2011

First Ph.D. position: Senior Biologist, Dow AgroSciences LLC, Indianapolis, Indiana

Currently: Associate Director of Bioinformatics, Illumina, San Diego, California

Amrita Mohan

Thesis title: A systematic study of intrinsic disorder and its roles in functional proteomics

Program: Informatics, Indiana University

Defense: October 23, 2009

First Ph.D. position: Research Fellow in Cancer Systems Biology, OSI Pharmaceuticals, Melville, New York

SCHOOL SERVICE

Northeastern University: Khoury College of Computer Sciences:

Associate Dean of Research, 2019-2020, 2022-2025

Hiring committee, 2018-2019

Merit committee, 2019

Promotion committee, chair, 2019, 2025

Co-Director, Master's of Science in Data Science, 2020-2022

Indiana University: School of Informatics, Computing, and Engineering:

Director of the Computer Science Ph.D. Studies, 2010-2012

Proposed a new Ph.D. curriculum; Approved by Computer Science faculty and University Graduate School

Graduate Admissions Committee, 2004-2006, 2007-2008

Undergraduate Education Committee, 2006

Strategic Research Committee, 2007

Structure Committee, 2016

Colloquium Committee, 2007-2008, 2013-2014

Hiring Committee(s), 2008, 2010, 2011-2012 as chair, 2013-2014, 2016-2017 as chair, 2017-2018 as chair

Space Committee, 2010

Web Steering/Oversight Committee, 2010-2011, 2013-2014

Budgetary Affairs Committee, 2014-2017

Faculty Affairs Committee, 2014-2016

Promotion & Tenure Committee, 2017-2018

Numerous other responsibilities; e.g., promotion committees, curriculum subcommittees, hiring subcommittees, task forces, etc.

Indiana University:

Department of Statistics Hiring Committee, 2014-2015

Statistics Coordination Committee, 2013-2016

Advisory Board member, Institute for Advanced Studies, Indiana University, 2013-2015

AGEP* Professor, 2004-2018

*Alliances for Graduate and Professoriate Program (AGEP) is an alliance addressing national minority education challenge and promoting participation of minorities.

ONLINE PREPRINTS

1. Stewart R, et al. Predicting interaction-specific protein–protein interaction perturbations by missense variants with MutPred-PPI. (2025) bioRxiv 2025.12.20.695738
2. Zeiberg D, et al. Gene-based calibration of high-throughput functional assays for clinical variant classification. (2025) bioRxiv 2025.04.29.651326
3. Chao KR, et al. The landscape of regional missense mutational intolerance quantified from 125,748 exomes. (2024) bioRxiv 2024.04.11.588920
4. Jain S, White M, Trosset MW, Radivojac P. Nonparametric semi-supervised learning of class proportions. (2016) arXiv: 1601.01944.
5. Radivojac P. A (not so) quick introduction to protein function prediction. (2013).

COMPLETE PUBLICATION LIST

6. Jiang J, Radivojac P, Gyori BM. Literature-driven extraction and computational prediction of causal statements linking genetic variants to biological processes, pathways and phenotypes. *Pac. Symp. Biocomput.* (2026) 31: 738-751.
7. Andreoletti G, Mangul S, Radivojac P, Brenner SE. Trust, reproducibility, and progress: the roles of independent blind prediction and assessment and benchmarking in computational biology. *Pac. Symp. Biocomput.* (2026) 31: 865-868.
8. Li D, Liu S, Assis PR, Li M, Dong S, Whaling I, Jolanki O, Kagda M, Zhang W, Macias-Velasco JF, Liu T, Cody S, Antonacci-Fulton L, Huang Y, Liu J, Montgomery MT, Zeiberg D, Jain S, Pejaver V, Bergquist T, Chen Y, Radivojac P, Gersbach CA, Sherpa RN, Castro CP, Boyle AP, Starita LM, Fowler DM, Ahituv N, Dey KK, Majoros WH, Reddy TE, Craven M, Sinha R, Sverchikov Y, Cai X, Nzima MZ, Calderwood MA, Rozowsky J, Gerstein M, Ma J, Yue F, Cherry JM, Love MI, Engreitz JM, Hitz BC, Wang T. The IGVF catalog—from genetic variation to function. *Nucleic Acids Res.* (2025), accepted.
9. De Paolis Kaluza MC, Tholeti T, Chen Y, Baeza-Yates R, Radivojac P, Jain S. Are your fairness metrics accurate? A semi-supervised approach to improving fairness estimates under sample selection bias. *Proceedings of the 31st ACM SIGKDD Conference on Knowledge Discovery and Data Mining, KDD 2025*, pp. 439-450, Toronto, Canada.
10. Bergquist T, Stenton SL, Nadeau EAW, Byrne AB, Greenblatt MS, Harrison SM, Tavtigian SV, O'Donnell-Luria A, Biesecker LG, Radivojac P, Brenner SE, Pejaver V, ClinGen Sequence Variant Interpretation Working Group. Calibration of additional computational tools expands ClinGen recommendation options for variant classification with PP3/BP4 criteria. *Genet. Med.* (2025) 27(6): 101402.
11. Rastogi R, Chung R, Li S, Li C, Lee K, Woo J, Kim DW, Keum C, Babbi G, Martelli PL, Savojardo C, Casadio R, Chennen K, Weber T, Poch O, Ancien F, Cia G, Pucci F, Raimondi D, Vranken W, Rooman M, Marquet C, Olenyi T, Rost B, Andreoletti G, Kamandula A, Peng Y, Bakolitsa C, Mort M, Cooper DN, Bergquist T, Pejaver V, Liu X, Radivojac P, Brenner SE, Ioannidis NM. Critical assessment of missense variant effect predictors on disease-relevant variant data. *Hum. Genet.* (2025) 144(2-3): 281-293.
12. Jain S, Trinidad M, Nguyen TB, Jones K, Neto SD, Ge F, Glagovsky A, Jones C, Moran G, Wang B, Rahimi K, Calici SZ, Cedillo LR, Berardelli S, Ozden B, Chen K, Katsonis P, Williams A, Lichtarge O, Rana S, Pradhan S, Srinivasan R, Sajeed R, Joshi D, Faraggi E, Jernigan R, Kloczkowski A, Xu J, Song Z, Ozkan S, Padilla N, de la Cruz X, Acuna-Hidalgo R, Grafmuller A, Barron LTJ, Manfredi M, Savojardo C, Babbi G, Martelli PL, Casadio R, Sun Y, Zhu S, Shen Y, Pucci F, Rooman M, Cia G, Raimondi D,

- Hermans P, Kwee S, Chen E, Astore C, Kamandula A, Pejaver V, Ramola R, Velyunskiy M, Zeiberg D, Mishra R, Sterling T, Goldstein JL, Lugo-Martinez J, Kazi S, Li S, Long K, Brenner SE, Bakolitsa C, Radivojac P, Suhr D, Suhr T, Clark WT. Evaluation of enzyme activity predictions for variants of unknown significance in Arylsulfatase A. *Hum. Genet.* (2025) 144(2-3): 295-308.
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MISCELLANEOUS AND TRIVIA

- Erdos number: 3; e.g., via Stefano Lonardi and Svante Janson + 2 more
- Bacon number: ∞
- Kardashian index: 0.43 (November 2024)
- CASP7 – second best predictor of protein function; category of difficult-to-infer functions (team: IUBInfo)
- CASP5, CASP6, CASP7 – best predictor for intrinsically disordered proteins (team: ISTZoran)
- CAFA1, CAFA2, CAFA3, CAFA4, CAFA5 – organized the first, second, third, and fourth Critical Assessment of Functional Annotations in 2010-2011, 2013-2014, 2016-2017, 2019-2020, 2022-2023 (with Iddo Friedberg, Sean Mooney, Michal Linial, Casey Greene).

- CAGI – Mooney-Radivojac group performed well in multiple CAGI challenges in CAGI 1-5.
- Paper “Intrinsic disorder and functional proteomics” by Radivojac et al. in 2007 was the first article in the *Biophysical Journal* labeled as “Biophysical Reviews and Perspectives” (but not the first review ever)
- According to the Mathematics Genealogy Project (MGP), maintained at the North Dakota State University, some of my famous scientific (great)ⁿ grandfathers are Alonzo Church (6th generation), Joseph-Louis Lagrange, Leonhard Euler, and Jacob Bernoulli.
- My name in the Serbian Cyrillic alphabet: Предраг Радивојац

CASP stands for the “Critical Assessment of techniques for protein Structure Prediction”.

CAFA stands for the “Critical Assessment of Functional Annotation”.

CAGI stands for the “Critical Assessment of Genome Interpretation”.