

# Predrag Radivojac, Ph.D.

Professor

Department of Computer Science  
Indiana University

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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. Candidate gene prioritization and biomarker discovery. Genome interpretation.

### *Machine Learning*

Structured-output learning and performance evaluation. Kernel-based inference on (hyper)graphs. Learning from biased data. Semi-supervised learning. Distance metrics.

## PROFESSIONAL EXPERIENCE

|             |                                                                                                      |
|-------------|------------------------------------------------------------------------------------------------------|
| 2015-       | Professor, Department of Computer Science, Indiana University, Bloomington                           |
| 2009-       | 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 and Computing, Indiana University, Bloomington            |
| 2004-2005   | Visiting Assistant Professor, School of Informatics, Indiana University, Bloomington                 |
| 2004-2005   | Consultant, Molecular Kinetics Inc., Indianapolis                                                    |
| 2004        | Post-doctoral fellow, School of Medicine, Indiana University, Indianapolis                           |
| 2002 Summer | Visiting Researcher, Molecular Kinetics Inc., Pullman, Washington                                    |
| 2001 Summer | Software Design Engineer, Natural Language Group, Microsoft Corp., Redmond, Washington               |
| 2000-2003   | Teaching and Research Assistant, Temple University, Philadelphia, Pennsylvania                       |

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 EXPERIENCE**

CSCI-B365: Introduction to Data Analysis and Mining (Falls 2016-2017)  
CSCI-B565: Data Mining (Spring 2016, Spring 2018)  
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**

August-Wilhelm Scheer Visiting Professor at Technical University of Munich, Germany, 2016-2017  
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**

Senior Member, International Society for Computational Biology (ISCB)  
Member, American Society for Mass Spectrometry (ASMS)  
Member, Association for Computing Machinery (ACM)

## **PROFESSIONAL ACTIVITIES**

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

Associate Editor, PLoS Computational Biology, 2014-  
Guest Associate Editor, PLoS Computational Biology, 2013-2014  
Guest Editor, Human Mutation, 2016-2017  
Editorial Board member, Bioinformatics, 2010-

Program Chair  
Great Lakes Bioinformatics Conference, GLBIO 2015

#### Area Chair

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

#### Proceedings Chair

Intelligent Systems for Molecular Biology, ISMB 2018

#### Session Organizer

Pacific Symposium on Biocomputing, PSB 2017  
Automated Function Prediction Special Interest Group Meeting, AFP-SIG 2011-2015  
Pacific Symposium on Biocomputing, PSB 2006-2009

#### Program Committees:

ACM Conference on Bioinformatics, Computational Biology, and Health Informatics, ACM BCB 2015-2017  
Intelligent Systems for Molecular Biology, ISMB 2016  
ISCB-Asia International Conference on Genome Informatics, GIW/ISCB 2014  
International Workshop on Data Mining in Bioinformatics, BioKDD 2003, 2013-2014  
ACM Conference on Bioinformatics, Computational Biology and Biomedical Informatics, ACM BCB 2012-2013  
Intelligent Systems for Molecular Biology and European Conference on Computational Biology, ISMB/ECCB 2013, 2017  
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

ACM Conference on Bioinformatics, Computational Biology and Health Informatics, ACM BCB 2015  
Intelligent Systems for Molecular Biology, ISMB, 2006-2007, 2013-2014, 2016  
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, 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  
Biostatistics  
BMC Bioinformatics  
Brief Bioinform  
Genome Biol  
Genomics  
Hum Genet  
IEEE-ACM Trans Comput Biol Bioinform  
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  
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  
 National Institutes of Health, 2013, 2015, 2016, 2018  
 Genome Canada, 2012  
 Ontario Genomics Institute, 2013  
 Biotechnology and Biological Sciences Research Council, 2016

**EDITED VOLUMES**

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**

Kymerleigh Pagel, 2017, Ian Lawson Van Toch Memorial Award for Outstanding Student Paper at ISMB/ECCB 2017  
 Kymerleigh 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  
 Kymerleigh 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  
 Kymerleigh 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  
 Kymerleigh 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  
 Kymerleigh 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

Kymerleigh 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

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

The Precision Health Initiative

PI: Anantha Shakhur, Indiana University School of Medicine

Indiana University Grand Challenges Initiative

09/01/16-08/31/20

Role: Leader for Data Sciences and Informatics (w/ Shaun Grannis, Kun Huang)

Total award: \$120,000,000 (\$13M to School of Informatics, Computing, and Engineering).

A computational framework for predicting the impact of mutations in autism

MPIs: Lilia Iakoucheva (UCSD) and Predrag Radivojac (Indiana)

National Institutes of Health, R01 MH105524

09/25/14-09/24/17

Total award: \$1,370,000

Bilateral BBSRC-NSF/BIO Collaborative Research: ABI Development: A Critical Assessment of Protein Function Annotation

MPIs-USA: Iddo Friedberg (Iowa State), Casey Greene (U Pennsylvania), Sean Mooney (U Washington), Predrag Radivojac (Indiana)

MPIs-UK: Maria Martin (EBI), Claire O'Donovan (EBI)

National Science Foundation, DBI-1458477

09/01/15-08/31/18

Total award: \$1,565,332 (USA) + £434,604 (UK)

## COMPLETED FUNDING

Computational approaches to protein identification and quantification using MS/MS; \$1,890,595 (total award; 1 post-doc, 3 students per year to IU); 10/01/12-08/31/17; National Institutes of Health, R01 GM103725; PI: Predrag Radivojac.

Informatic profiling of clinically relevant mutation; \$1,979,307 (total award; 2 graduate students per year to IU); 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; \$595,948 (total award; 2 students per year to IU); 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; \$813,146 (total award; 1 post-doc, 3 students per year to IU); 09/15/08-08/31/12; National Institutes of Health, R01 RR024236-01A1; PI: Predrag Radivojac.

Informatic profiling of clinically relevant mutation; \$1,314,515 (total award; 1 post-doc per year to IU); 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; \$5,959,801 (total award; 1 student per year to IU); 10/01/06-08/31/11; National Cancer Institute, U24 CA126480-01; PI: Fred Regnier, Purdue University; Role: co-PI.

The center of excellence in systems microbiology; \$1,895,385 (total award; 1 student per year); 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; \$49,919 (total award; 1 student to IU); 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 (2 students); 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:

Rafael Guerrero

Sujun Li

### Ph.D. students:

Shantanu Jain (Computer Science; co-advised with Michael Trosset)

Yuxiang Jiang (Computer Science)

Kymerleigh Pagel (Informatics)

Yisu Peng (Computer Science)

Rashika Ramola (Computer Science)

Mouses Stamboulian (Informatics)

### Master's students:

Scott Mathews (Computer Science)

### Undergraduate students:

Ben Lewis (Computer Science)

## THESES ADVISED

### Ruiyu Yang

Thesis title: Different methods for phylogenetic reconstruction and their properties

Program: Mathematics

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

Defense: December 12, 2016

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

### Vikas Pejaver

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

Program: Informatics

Defense: November 17, 2016

First Ph.D. position: Post-doctoral Fellow, University of Washington, Seattle, Washington

### **Chao Ji**

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

Program: Informatics

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: Scientist 1, Bioinformatics, Research & Development, BioMarin Pharmaceutical Inc., Novato, California

### **Fuxiao Xin**

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

Program: Informatics

Defense: July 12, 2012

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

### **Yong Li**

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

Program: Informatics

Defense: August 11, 2011

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

Currently: Post-doctoral Fellow, Stanford University, Stanford, California

### **Amrita Mohan**

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

Program: Informatics

Defense: October 23, 2009

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

Currently: Director of Bioinformatics Data Science, CHDI Management Inc., Princeton, New Jersey

## **SCHOOL SERVICE**

*Department and School of Informatics and Computing:*

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

#### *Indiana University:*

Department of Statistics Hiring Committee, 2014-2015  
 Statistics Coordination Committee, 2013-  
 Advisory Board member, Institute for Advanced Studies, Indiana University, 2013-2015  
 AGE<sup>\*</sup> Professor, 2004-

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

## **ONLINE PREPRINTS**

1. Pejaver et al. MutPred2: inferring the molecular and phenotypic impact of amino acid variants. bioRxiv: 134981
2. Lugo-Martinez and Radivojac. Classification in biological networks with hypergraphlet kernels. <http://arxiv.org/abs/1703.04823>
3. Yamada M et al. Ultra high-dimensional nonlinear feature selection for big biological data. <https://arxiv.org/abs/1608.04048>
4. Yang R et al. New metrics for learning and inference on sets, ontologies, and functions. <http://arxiv.org/abs/1603.06846>
5. Jain S et al. Nonparametric semi-supervised learning of class proportions. <http://arxiv.org/abs/1601.01944>

## **COMPLETE PUBLICATION LIST**

6. Daneshjou R, Wang Y, Bromberg Y, Bovo S, Martelli PL, Babbi G, Lena PD, Casadio R, Edwards M, Gifford D, Jones DT, Sundaram L, Bhat RR, Li X, Pal LR, Kundu K, Yin Y, Moulton J, Jiang Y, Pejaver V, Pagel KA, Li B, Mooney SD, Radivojac P, Shah S, Carraro M, Gasparini A, Leonardi E, Giollo M, Ferrari C, Tosatto SCE, Bachar E, Azaria JR, Ofra Y, Unger R, Niroula A, Vihinen M, Chang B, Wang MH, Franke A, Petersen BS, Pirooznia M, Zandi P, McCombie R, Potash JB, Altman RB, Klein TE, Hoskins RA, Repo S, Brenner SE, Morgan AA. Working towards precision medicine: predicting phenotypes from exomes in the Critical Assessment of Genome Interpretation (CAGI) challenges. *Hum. Mutat.* (2017) 38(9): 1182-1192.
7. Pejaver V, Mooney SD, Radivojac P. Missense variant pathogenicity predictors generalize well across a range of function-specific prediction challenges. *Hum. Mutat.* (2017) 38(9): 1092-1108.
8. Pagel KA, Pejaver V, Lin GN, Nam H, Mort M, Cooper DN, Sebat J, Lakoucheva LM, Mooney SD, Radivojac P. When loss-of-function is loss of function: understanding mutational signatures and impact of loss-of-

function genetic variants. *Bioinformatics* (2017) 33(14): i389-i398. **Ian Lawson Van Toch Memorial Award at ISMB/ECCB 2017.**

9. Jain S, White M, Radivojac P. Recovering true classifier performance in positive-unlabeled learning. *Proceedings of the 31st AAAI Conference on Artificial Intelligence, AAAI 2017*, pp. 2066-2072, San Francisco, California, U.S.A., February 2017.
10. Reddy KD, Malipeddi J, DeForte S, Pejaver V, Radivojac P, Uversky VN, Deschenes RJ. Physicochemical sequence characteristics that influence S-palmitoylation propensity. *J. Biomol. Struct. Dyn.* (2017) 35(11): 2337-2350.
11. Friedberg I, Radivojac P. Community-wide evaluation of computational function prediction. Book Chapter in *Methods in Molecular Biology*, vol. 1446. The Gene Ontology Handbook. Edited by C. Dessimoz and N. Škunca, pp. 133-146. Springer, New York, NY. 2017.
12. Jain S, White M, Radivojac P. Estimating the class prior and posterior from noisy positives and unlabeled data. *Advances in Neural Information Processing Systems, NIPS 2016*, pp. 2693-2701, Barcelona, Spain, December 2016.
13. Ioannidis NM, Rothstein JH, Pejaver V, Middha S, McDonnell SK, Baheti S, Musolf A, Li Q, Holzinger E, Karyadi D, Cannon-Albright LA, Teerlink CC, Stanford JL, Isaacs WB, Xu J, Cooney KA, Lange EM, Schleutker J, Carpten JD, Powell IJ, Cussenot O, Cancel-Tassin G, Giles GG, MacInnis RJ, Maier C, Hsieh CL, Wiklund F, Catalona WJ, Foulkes WD, Mandal D, Eeles RA, Kote-Jarai Z, Bustamante CD, Schaid DJ, Hastie T, Ostrander EA, Bailey-Wilson JE, Radivojac P, Thibodeau SN, Whittemore AS, Sieh W. REVEL: an ensemble method for predicting the pathogenicity of rare missense variants. *Am. J. Hum. Genet.* (2016) 99(4): 877-885
14. Li S, Dabir A, Misal SA, Tang H, Radivojac P, Reilly JP. Impact of amidation on peptide fragmentation and identification in shotgun proteomics. *J. Proteome Res.* (2016) 15(10): 3656-3665.
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16. Rost B, Radivojac P, Bromberg Y. Protein function in precision medicine: deep understanding with machine learning. *FEBS Lett.* (2016) 590(15): 2327-2341.
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## MISCELLANEOUS AND TRIVIA

- H-index: 34 (ISI Web of Knowledge), 37 (Scopus), 42 (Google Scholar)
- Erdos number: 3, via Stefano Lonardi and Svante Janson
- Bacon number:  $\infty$
- 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 – organized the first Critical Assessment for Function Prediction in 2010-2011, 2013-2014 (with Iddo Friedberg, Sean Mooney, and Michal Linial).
- CAGI – Mooney-Radivojac group performed well in multiple CAGI challenges in CAGI 1-4.
- 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)<sup>n</sup> grandfathers are Alonzo Church (6<sup>th</sup> generation), Joseph-Louis Lagrange, Leonhard Euler, and Jacob Bernoulli.
- My name in the Serbian Cyrillic alphabet: Предраг Радивојац

CASP stands for "Critical Assessment of techniques for protein Structure Prediction" and is the major meeting for world-wide assessment of computational methods for predicting protein structure and function. CASP is held bi-yearly.

CAFA stands for "Critical Assessment of Functional Annotation". The first CAFA meeting was held at Automated Function Prediction (AFP) Special Interest Group (SIG) meeting at ISMB/ECCB 2011, Vienna, Austria. AFP SIG was first held at ISMB 2005 in Detroit.

CAGI stands for "Critical Assessment of Genome Interpretation". The first CAGI meeting was held at University of California, Berkeley in December of 2010.