

Arvind Rasi Subramaniam

Associate Professor
Fred Hutchinson Cancer Center
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Education

Ph.D. in Physics, University of Chicago 2008
B.Tech. in Metallurgical and Materials Engineering, Indian Institute of Technology Madras, India 2004

Employment

Associate Professor 2021–
Assistant Professor 2015–21
Basic Sciences Division & Computational Biology Section of Public Health Sciences Division
Fred Hutchinson Cancer Center, Seattle, WA

Postdoctoral Fellow 2008–15
Center for Systems Biology & Department of Molecular and Cellular Biology
Harvard University, Cambridge, MA. Advisors: Erin O'Shea, Phillippe Cluzel

Graduate Fellow 2005–08
Theoretical Condensed Matter Physics Group
University of Chicago, Chicago, IL. Advisor: Ilya Gruzberg

Other Appointments

Affiliate Assistant Professor, Department of Genome Sciences, University of Washington, Seattle 2016–
Affiliate Assistant Professor, Department of Biochemistry, University of Washington, Seattle 2016–
Affiliate Assistant Professor, Department of Microbiology, University of Washington, Seattle 2018–
Participant in the Program on 'Random Shapes', Institute for Pure and Applied Mathematics, UCLA 2007
Visiting Affiliate in the Program on 'Stochastic Geometry and Field Theory', Kavli Institute for Theoretical Physics, UCSB 2006
Graduate Research Fellow, Experimental Condensed Matter Physics, University of Chicago, Advisor: Thomas Rosenbaum 2004–05
Summer Undergraduate Research Fellow, Material Science & Engineering, California Institute of Technology, Advisor: Sossina Haile 2003
Summer Research Fellow, Department of Physics, Indian Institute of Science, Bangalore, Advisor: Arup Kumar Raychaudhuri 2002

Honors

CAREER Award, National Science Foundation 2018
Sidney Kimmel Scholar 2017
K99/R00 Pathway to Independence Award, National Institutes of Health 2013
Wentzel Research Prize for Outstanding Research in Theoretical Physics, University of Chicago 2007
Chandrasekhar, McCormick, and Sachs Graduate Research Fellowships, University of Chicago 2004
Dhandapani Memorial Prize for highest GPA in Metallurgical and Materials Engineering, IIT Madras 2004

Invited Talks

Gordon Research Conference on Translational Machinery in Health and Disease, Galveston	2023
Emergent Simplicity in Biophysical Dynamics TSRC workshop, Telluride	2019
Department of Medical Genetics, University of Washington, Seattle	2018
Department of Biochemistry, University of Washington, Seattle	2017
Combi Seminar, Department of Genome Sciences, University of Washington, Seattle	2016
Department of Molecular Biology and Genetics, Johns Hopkins University School of Medicine, Baltimore	2014

Teaching

Instructor, Tools for Computational Biology , University of Washington, Seattle	2018–22
Teaching Assistant, Foundations of Systems Biology and Bioengineering, Harvard University	2012
Teaching Assistant, Introduction to Quantitative Tools for Cell Biology, Harvard University	2010
Teaching Assistant, Symplectic Methods of Classical Dynamics, University of Chicago	2008
Teaching Assistant, Advanced Mathematical Methods of Physics, University of Chicago	2008
Teaching Assistant, Solid State Physics, University of Chicago	2007

Ph.D. Trainees

Katharine Chen, Molecular and Cellular Biology, University of Washington	2019–
Patrick Nugent, Molecular and Cellular Biology, University of Washington	2018–
Ty Bottorff, Biophysics, Structure and Design Graduate Program, University of Washington	2019–23
Philip Burke, Microbiology, University of Washington (joint with Jesse Bloom)	2017–22
Heather Machkovech, Genome Sciences, University of Washington (joint with Jesse Bloom)	2016–18

Postdoctoral Trainees

Jamie Yelland	2023–
Matthew Chan (joint with Melody Campbell)	2022–
Maria Toro Moreno (joint with Harmit Malik)	2021–
Rachael Bakker	2021–
Heungwon Park	2016–19
Michelle Kriner	2016–18

Research Technician Trainees

Yuya Zhao	2018–20
Shea Ransford	2017–18
Michael 'Max' Ferrin	2015–17

Ph.D. Thesis Committee

Kristian Davidsen, Molecular and Cellular Biology, University of Washington	2020–
Alison Greenlaw, Molecular and Cellular Biology, University of Washington	2020–
Alexandre Germanos, Molecular and Cellular Biology, University of Washington	2019–23
Samantha Schuster, Molecular and Cellular Biology, University of Washington	2019–23
Bianca Ruiz, Genome Sciences, University of Washington	2018–21
Dylan Udy, Molecular and Cellular Biology, University of Washington	2017–22
Joey Pangallo, Molecular and Cellular Biology, University of Washington	2016–21
Ethan Keeler, Electrical Engineering, University of Washington	2016–18
Robin Green, Molecular and Cellular Biology, University of Washington	2015–17
Qing Feng, Molecular and Cellular Biology, University of Washington	2015–17

Other Service

Eddie Méndez Award Committee, Fred Hutchinson Cancer Research Center	2021
Faculty Search Committee, Basic Sciences Division, Fred Hutchinson Cancer Research Center	2020,23
Organizer, Computational Biology Seminar Series, Fred Hutchinson Cancer Research Center	2017–21
Weintraub Graduate Student Award Selection Committee, Fred Hutchinson Cancer Research Center	2017,20
Admissions Committee, Biophysics, Structure, & Design Graduate Program, University of Washington	2017–18
Admissions Committee, Molecular and Cellular Biology Graduate Program, University of Washington	2016,17,21
Organizer, Microbial Sciences Initiative Journal Club, Harvard University	2010
Organizer, Metallurgical and Materials Engineering Student Association, IIT Madras, India	2002–03

Reviewer and Referee

Member of NSF MCB panel (2020, 2022)

Ad-hoc journal referee for Nature, Molecular Cell, Reviewer Commons, PNAS, PLoS Biology, eLife, Cell Reports, Nature Communications, Nature Microbiology, Physical Biology, Physical Review Letters, Physical Review B

Ad-hoc grant reviewer for US National Science Foundation, US-Israel Binational Foundation, Research Foundation — Flanders Belgium, Swedish Foundation for Strategic Research, Israel Ministry of Science and Technology, Swiss National Science Foundation

Reviewer for Regeneron Science Talent Search Competition (2018)

Extramural Research Support

Current

NSF CAREER MCB-1846521 (PI) 2019–24
Experimentally Integrated Modeling of Quality Control During Eukaryotic mRNA Translation
\$100,000 direct costs per year

NIH R35 GM119835 (PI) 2016–26
Regulation of Protein Synthesis by Synonymous Codon Usage
\$243,000 direct costs per year

Completed

Sidney Kimmel Scholarship (PI) 2017–19
Quantitative Profiling of Synonymous Mutation Effects in Cancer Cells
\$100,000 total costs per year

NIH K99/R00 GM107113 (PI) 2013–17
Role of Synonymous Codon Usage as Gene Regulators in Bacteria and Cancer Cells
\$680,000 total costs over 4 years

Publications

<https://www.ncbi.nlm.nih.gov/myncbi/arvind.subramaniam.1/bibliography/public/>