2017 Palmer Commons
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www.BoyleLab.org

Alan P. Boyle

Education

2005–2009 **Doctor of Philosophy,** Computational Biology and Bioinformatics
Duke University, Durham, NC

2001–2005 **Bachelor of Science,** *summa cum laude,* Biochemistry and Molecular Biology
Bachelor of Science, *summa cum laude,* Computer Science
Mississippi State University, Starkville, MS

Academic Appointments

2020–present **Associate Professor with tenure,** Department of Computational Medicine & Bioinformatics
Associate Professor, Department of Human Genetics
2023–present **Core Member,** Rogel Cancer Center
2021–present **Affiliate,** Michigan Neuroscience Institute
2020–2023 **Affiliate Member,** Rogel Cancer Center
2017–present **Member,** Cellular and Molecular Biology Program
2016–present **Member,** Center for RNA Biomedicine
2015–present **Member,** Genome Science Training Program (GSTP)
Member, Michigan Predoctoral Training Program in Genetics (GTP)
2014–present **Member,** Program in Biomedical Sciences
Member, Bioinformatics Training Program
2015–2020 **Assistant Professor,** Department of Human Genetics
2014–2020 **Assistant Professor,** Department of Computational Medicine & Bioinformatics
University of Michigan, Ann Arbor, MI

2010–2014 **Postdoctoral Scholar,** Genetics
Stanford University, Stanford, CA; Advisor: Dr. Michael Snyder

Spring 2010 **Postdoctoral Associate,** Computational Biology
Duke University, Durham, NC; Advisor: Dr. Terrence S. Furey

Scholarships, Fellowships, and Honors

2023 University of Michigan 'Making a Difference' Award from Office for Health Equity & Inclusion
2022 Valuing our Own Award, Michigan Medicine
2019 Endowment for the Basic Sciences Teaching Award
2018 First Place in CAGI5 Regulation Saturation Challenge
2017 NSF CAREER Award
2016 Institutional nominee for W.M. Keck Foundation Medical Science Research Program
2016 Institutional nominee for Searle Scholar Award
2015–2017 Alfred P. Sloan Foundation Fellowship in Computational & Evolutionary Molecular Biology
2013–2014 NIH Pathway to Independence Award (K99/R00) [1K99HG007356-01]
2012 AAAS/Science Program for Excellence in Science
2005–2008 NSF Graduate Research Fellowship
2005–2009 James B. Duke Fellowship
Summer 2004 Mayo Clinic Summer Undergraduate Research Fellow
2003 Barry M. Goldwater Memorial Scholarship
Summer 2003 The Institute for Genomic Research (TIGR) Summer Fellow
2001 Robert C. Byrd Honors Scholarship
2001 Mississippi State University Presidential Scholarship
2001 National Merit Scholarship

Grant Support

Active

2017–2025 | U24 HG009293 (Multi-PI: Boyle, Cherry)
NIH/NHGRI
RegulomeDB: A Resource for the Human Regulome
This project seeks to expand and support a RegulomeDB, a database for prioritizing and predicting functional variants in the human genome.

2020–2023 | R21 HG011493 (Multi-PI: Boyle, Mills)
NIH/NHGRI
New technologies for accurate capture and sequencing of repeat-associated regions
This project seeks to map mobile elements in a trio of cell lines and develop technologies for improving this mapping.

2022–2025 | R21 CA2578964 (PI: Boyle)
NIH/NCI
High-throughput inverted reporter assay for characterization of silencers and enhancer blockers
This project seeks to develop tools for the study of negative regulatory elements in cancer development.

2021–2026 | U01 HG011952 (PI: Boyle)
NIH/NHGRI
Predicting the impact of genomic variation on cellular states
This project seeks to develop tools for interpretation of genomic variation on cellular state through modeling single cell data as part of the IGVF consortium.

2022–2026 | R01 GM144484 (PI: Boyle)
NIH/NIGMS
Mobile element derived chromatin looping variability in human populations
This project seeks to study the impact of polymorphic LTR13 integrations on 3D chromatin conformation.

2023–2028 | UG3 NS132084 (Multi-PI: Mills, Boyle, McConnell)
NIH/OD
Molecular and Computational Tools for Identifying Somatic Mosaicism in Human Tissues
As part of the SMaHT consortium this project seeks to develop long-read methods to study somatic mosaicism in normal human tissues.

2022–2024 | Taubman Institute Innovation Projects (co-PI: Todd, Boyle, Mills)
University of Michigan
Short Tandem repeats in precision health and human disease
The goal of this project is to develop any assay to measure STRs in human genomes and develop bioinformatic tools to predict STR expansions from genotypes.

2018–2024 | R01 HD093570 (PI: Bielas; Co-I with Effort)
NIH/NICHD
Genetic Diagnosis of Neurodevelopmental Disorders in India
This study will establish whole-exome sequencing to study mendelian genetic disorders at the All India Institute of Medical Sciences.

2020–2023 | W81XWH2010336 (PI: Aguilar; Co-I with Effort)
DoD/Army
Understanding & Enhancing the Regenerative Capacity of Skeletal Muscle to Trauma by Targeting Muscle-Nerve Synergy
This project seeks to study the single cell chromatin and RNA landscape in skeletal muscle repair.

2021–2026 | F32 HL153799 (PI: Denstaedt; Consultant)
NIH/NHLBI
Predisposition for Lung Injury in Sepsis Survival
The goal of this project is to understand the biological mechanisms predisposing to these complications in order to prevent and treat them.

2021–2026 R01 HD104680 (PI: Hammoud; Co-I with Effort)
NIH/NICHD
Sperm Chromatin: Implications on organismal development and fertility
This project seeks to explore protamine chromatin structure in mouse sperm.

2021–2026 R01 NS122165 (PI: Castro; Co-I with Effort)
NIH/NINDS
Uncover the role of H3.3-G343R mutation in shaping the DNA damage response, anti-tumor immunity and mechanisms of resistance in glioma
This project seeks to study pediatric high-grade gliomas with H3.3-G343R, ATRX, and TP53 inactivating mutations to understand the impact of H3.3-G343R on the tumor immune microenvironment.

2022–2026 R01 CA260677 (PI: Malek; Co-I with Effort)
NIH/NCI
The Biology of Mutant STAT6 in Follicular Lymphoma
This project seeks to study STAT6 gene regulation in the context of B cell lymphoma.

2023–2028 R01 NS099280 (PI: Todd; Consultant)
NIH/NCI
Hexanucleotide repeat translation in ALS and Frontotemporal Dementia
This project seeks to study RAN translation in ALS and FTD at a hexonucleotide expansion in C9orf72.

2022–2024 Michigan Alzheimer's Disease Center Developmental Project (PI: Zhou; Consultant)
University of Michigan
Explore the functional impact of transposable elements in Alzheimer's disease and related dementias
This project seeks to explore the connection between the somatic transposable elements in the human genome and Alzheimer's disease and related dementias.

Completed

2013–2017 R00 HG007356 Pathway to Independence Award (K99/R00) (PI: Boyle)
NIH/NHGRI
Global Discovery and Validation of Functional Regulatory Elements
This project seeks to extend current assays demonstrating function of genomic regions into an equivalent genome-wide assay.

2015–2017 FG-2015-65465 (PI: Boyle)
Alfred P. Sloan Foundation
Fellowship in Computational & Evolutionary Molecular Biology

2016–2020 R01 HL130705 (PI: Willer; Co-I with Effort)
NIH/NHLBI
Large-scale human genetics to understand molecular mechanisms of atrial fibrillation and related traits
This project seeks to provide new insights into atrial fibrillation mechanisms through whole-genome screening.

2017–2018 Eleanor and Larry Jackier U-M/Technion and Weizmann Collaborative Research Grant
(co-PI: Boyle, Mandel-Gutfreund)
Michigan - Israel Partnership for Research & Education
Identifying novel disease related mutations in the genomic environments around Trascription Factor binding sites
The goal of this project is to identify variants in the proximity of TF binding sites that have an indirect effect on their binding.

2017–2024 R35 HL135824 (PI: Willer; Co-I with Effort)
NIH/NHLBI
Using Genetics to Inform Mechanism of Cardiovascular Disease

The goal of this project is to uncover novel genetic discoveries and biological mechanisms underlying association with devastating cardiovascular diseases.

2019 NVIDIA GPU Grant (PI: Boyle)
NVIDIA Corporation

2017–2022 DBI-1651614 (PI: Boyle)
NSF/BIO/DBI
CAREER: Conservation of cohesin-containing cis regulatory modules in the human and mouse lineages
The goal of this project is the study of the turnover of cohesin binding sites in the human and mouse genomes.

2022–2022 R21 HG011493 S1 (Multi-PI: Boyle, Mills)
NIH/NIA
New technologies for accurate capture and sequencing of repeat-associated regions (Supplement)
This project seeks to map mobile elements in a set of Alzheimer's samples.

2019–2022 Precision Health Investigators Award (co-PI: Todd, Boyle, Mills)
University of Michigan
Short Tandem repeats in precision health and human disease
The goal of this project is to develop any assay to measure STRs in human genomes and develop bioinformatic tools to predict STR expansions from genotypes.

2022 NVIDIA GPU Grant (PI: Boyle)
NVIDIA Corporation

2021–2022 Cancer Center Discovery (PI: Boyle)
University of Michigan
Direct capture of complete HPV integration sites using long-read sequencing
This project seeks to develop methods to capture of complete HPV integration events in the human genome.

Professional Service

Service

2023–current R01 Bootcamp Medical School Cohort Coach
2021–current Impact of Genomic Variation on Function (IGVF) Consortium Steering Committee
2022–current University of Michigan Biomedical Research Council (BMRC) (Standing Member)
2020–2022 DHG M.S. Admissions Committee
2018–current DCM&B Diversity, Equity, & Inclusion Committee [Ally/Chair 2018–2020]
2018–current Lab Safety Liaison for DCM&B
2017–current DCM&B Preliminary Exam Abstract Review Committee (PARC) [Chair 2018–2022]
2019–2020 DHG Ph.D. Admissions Committee
2017–2020 DHG Faculty Recruitment and Promotions Committee
2016–2020 DCM&B Seminar Series Committee [Chair]
2018–2019 Cellular and Molecular Biology Admissions Committee
2017–2019 EBS Faculty IT Committee
2016–2019 DCM&B Faculty Recruitment Committee
2015–2018 DCM&B Admissions Committee
2015–2017 DHG Computational Support Committee
2015–2016 DCM&B Retreat Planing Committee Chair (including 1st annual)
2014 *Ad hoc* admissions reviewer, University of Michigan DCM&B
2008–2009 Duke Computational Biology & Bioinformatics student committee

Memberships

2018–current Member, American Society of Human Genetics (ASHG)
2013–current Member, International Society for Computational Biology (ISCB)
2012–current Member, American Association for the Advancement of Science (AAAS)

2005–current	Member, Gamma Sigma Delta Agricultural Honor Society

Manuscript Reviewing Activity

Since 2009	*Ad hoc* reviewer (>100 verified reviews) for the journals: *Science*, *Nature Biotechnology*, *Nature Genetics*, *Genome Research*, *Genome Biology*, *Nature Neuroscience*, *Nature Communications*, *Nature Protocols*, *Bioinformatics*, *Nucleic Acids Research*, *BMC Biology*, *BMC Bioinformatics*, *PLOS Computational Biology*, *Oncotarget*, *Scientific Reports*, *Atherosclerosis*, *BioEssays*, *Gene*
2023	Program Committee, Genome Sequence Analysis, ISMB/ECCB
2023	Program Committee, Biomedical Informatics, ISMB/ECCB
2018, 2020	Program Committee, Comparative and Functional Genomics, ISMB/ECCB
2018, 2019	Program Committee, Studies of Phenotypes and Clinical Applications, ISMB/ECCB
2019	Program Committee, General Computational Biology, ISMB/ECCB
2017	Program Committee, Regulatory Genomics Special Interest Group Meeting (RegGenSIG), ISMB/ECCB
2015–2018	Program Committee, Great Lakes Bioinformatics and Canadian Computational Biology Conference (GLBIO/CCBC)
2015–2016	Program Committee, Algorithms for Computational Biology (ALCOB)
2013–2016	Program Committee, Gene Regulation and Transcriptomics, ISMB/ECCB
2012–2015	DNA Day Essay Contest Detailed Review Judge for ASHG
2012	Distinguished contributor as a leading reviewer for the journal *Bioinformatics*

Grant Reviewing Activity

2023	NSF Review Panel - Molecular and Cellular Biosciences (MCB) - Genetic Mechanisms (Ad Hoc)
2023	NIH Study Section - Multi-Omics of Health and Disease – Data Analysis and Coordination Center
2023	NIH Study Section GVE - Genetic Variation and Evolution Study Section (Ad Hoc)
2022	NIH Study Section ZRG1 ISB-S (57) - Academic-Industrial Partnerships for Translation of Technologies for Diagnosis and Treatment
2022	NASA Study Section E.11 Space Biology: Animal Studies - Omics Systems [21SBAS-OmisSys] (Ad Hoc)
2020	NIH/NIMH Study Section ZMH1 ERB-C (08) - Fine-Mapping Genome-Wide Associated Loci to Identify Proximate Causal Mechanisms of Serious Mental Illness
2019	NIH/NIMH Study Section ZMH1 ERB-C (01) - PsychENCODE: Non-Coding Functional Elements in the Human Brain and Their Role in the Development of Psychiatric Disorders
2018–2019	University of Michigan internal review for Searle Scholars Program
2015	UK Medical Research Council (RCUK MRC) - Methodology Research Panel (Ad Hoc)
2015	UK Biotechnology and Biological Sciences Research Council (RCUK BBSRC) (Ad Hoc)
2015	Michigan Institute for Clinical & Health Research (MICHR) Postdoctoral Translational Scholars Program (Ad Hoc)

Teaching and Mentorship

Teaching (F = Fall Term, W = Winter Term, S = Summer Term)

W19, W20, W21, W22, W23	Bioinformatics Concepts and Algorithms (BIOINF 529) [Course Director]
F15, F16, F17, F18, F19, F20, F21	Gene Structure and Regulation (HUMGEN 541) [3 lectures + 2 discussions / yr.]
F19, F22	Research Responsibility and Ethics (PIBS 503) [1 discussion / yr.]
F21, W22	Genetics Student Seminar (HUMGEN 821/822) [Mentor]
F17, F18	Experimental Genetics Systems (HUMGEN 632) [Course Director]
F15, W16, F16, W17, F17, W18, F18	Bioinformatics Journal Club (BIOINF 602/603) [Course Director F18]
S17, S18	Introduction to Biocomputing Bootcamp (BIOSTAT/BIOINF/HUMGEN 606) [2 full days / yr.]
F15, F16, F17	Introduction to Bioinformatics & Computational Biology (BIOINF 527) [2 lectures + 3 labs / yr.]
S15, S16, S17	Basic Biology for Graduate Students with Quantitative Training (BIOINF 523) [2 lectures / yr.]
F03	Lab TA for Isotopes Tech I (MS. State, BCH 4414)

Guest Lectures / Panels

2018–2019 Lecturer, REU Site: Mathematical and Theoretical Biology Institute (MTBI), Arizona State University (NSF1757968) [2 days]
2017 Panel member, U. Michigan "New Faculty Orientation to Corporate & Foundation Relations" [70 attendees]
2016 Experimental Genetics Systems (HUMGEN 632) [1 discussion]
2014 Panel member, BIOINF 527 "Challenges in Biology, Biomedicine, Data & Analysis"
2010 Co-taught Cold Spring Harbor Systems Biology Pre-meeting Workshop
2009 Duke student panelist for "How to prepare for and get into graduate school"
2008 Taught Duke mini-course on Genome Browsers & Databases

Mentorship

Graduate Students (n=22)

2023–current Ruixuan Wang (M.S. Student, Biostatistics, University of Michigan)

2023–current Hawra Aljawad (Ph.D. Student, Chemical Engineering, University of Michigan)

2023–current Xinyi Liu (M.S. Student, Bioinformatics, University of Michigan)

2022–current Emily Pogson (Ph.D. Student, Genetics and Genomics, University of Michigan)

2022–current Katarina Pavlovic (Ph.D. Student, Bioinformatics, University of Michigan)

2022–current Rintsen Sherpa (Ph.D. Student, Bioinformatics, University of Michigan)

2021–current Kinsey Van Deynze (Ph.D. Student, Bioinformatics, University of Michigan)
NIH Genome Science Training Program (T32)
Rackham Graduate Student Research Grant (pre-candidate)

2020–current Andrea Valenzuela (Ph.D. Student, Chemical Biology, University of Michigan)
NIH Cellular Biotechnology Training Program (T32)

2020–current Breanna McBean (Ph.D. Student, Genetics and Genomics, University of Michigan)
Joint M.S. in Bioinformatics, University of Michigan
NIH Genome Science Training Program (T32)
Rackham Graduate Student Research Grant (pre-candidate)
Rackham Graduate Student Research Grant (candidate)

2019–2020 Monica Holmes (M.S. Student, Bioinformatics, University of Michigan)

2020–current Camille Mumm (Ph.D. Student, Genetics and Genomics, University of Michigan)
Joint M.S. in Bioinformatics, University of Michigan
NIH Genome Science Training Program (T32)
Rackham Graduate Student Research Grant (pre-candidate)

2018–current Bradley Crone (Ph.D. Student, Bioinformatics, University of Michigan)
Rackham Graduate Student Research Grant (candidate)

2017–2023 Melissa Englund (Ph.D. Student, Genetics and Genomics, University of Michigan)
NIH Human Genetics Training Program (T32)
Rackham Graduate Student Research Grant (candidate)

2018–2023 Nanxiang (Samuel) Zhao (Ph.D. Student, Bioinformatics, University of Michigan)
2017–2018 Nanxiang (Samuel) Zhao (M.S. Student, Bioinformatics, University of Michigan)
Rackham Graduate Student Research Grant (pre-candidate)
Rackham Graduate Student Research Grant (candidate)

2016–2018 Haley Amemiya (Ph.D. Student, Cellular and Molecular Biology, University of Michigan)
Joint M.S. in Bioinformatics, University of Michigan
NIH Cellular & Molecular Biology Training Program (T32)
NIH Cellular Biotechnology Training Program (T32) (Declined)
PIBS Excellence in Service Award
Rackham Graduate Student Research Grant (pre-candidate)
Rackham Graduate Student Research Grant (candidate)

Maas Professional Development Award
Rackham Graduate School Scholar-Activist Award

2016–2020 Shriya Sethuraman (Ph.D. Student, Bioinformatics, University of Michigan)

2016–2023 Christopher Castro (Ph.D. Student, Bioinformatics, University of Michigan)
NIH Bioinformatics Training Program (T32)
Rackham Merit Fellow
Rackham Graduate Student Research Grant (pre-candidate)
Rackham Graduate Student Research Grant (candidate)
Global Research Engagement Opportunity Fellowship

2017–2022 Ningxin Ouyang (Ph.D. Student, Bioinformatics, University of Michigan)
2015–2017 Ningxin Ouyang (M.S. Student, Bioinformatics, University of Michigan)
Rackham Graduate Student Research Grant (candidate)

2016–2021 Shengcheng Dong (Ph.D. Student, Bioinformatics, University of Michigan)
Rackham Graduate Student Research Grant (candidate)

2015–2021 Torrin McDonald (Ph.D. Student, Genetics and Genomics, University of Michigan)
NIH Human Genetics Training Program (T32)
Rackham Graduate Student Research Grant (pre-candidate)
Rackham Graduate Student Research Grant (candidate)

2015–2017 Greg Farnum (Ph.D. Student, Cellular and Molecular Biology, University of Michigan)

2015–2020 Sierra Nishizaki (Ph.D. Student, Genetics and Genomics, University of Michigan)
Joint M.S. in Bioinformatics, University of Michigan
NIH Genome Science Training Program (T32)
Rackham Merit Fellow
Rackham Summer Award
Rackham Graduate Student Research Grant (candidate)

Additional Graduate Rotation Students (n=13)

2023 Connor Ward (Rotation Student, Medical Science Training Progran, University of Michigan)
2022 Brandt Bessell (Rotation Student, Bioinformatics, University of Michigan)
2022 Xiaomeng Du (Rotation Student, Bioinformatics, University of Michigan)
2022 Mahnoor Gondal (Rotation Student, Bioinformatics, University of Michigan)
2022 Xin Li (Rotation Student, Biological Chemistry, University of Michigan)
2022 Bohan Chen (Rotation Student, Cell and Developmental Biology, University of Michigan)
2021 Amelia Lauth (Rotation Student, Cellular and Molecular Biology, University of Michigan)
2019 Margarita Brovkina (Rotation Student, Cellular and Molecular Biology, University of Michigan)
2018 Steve Ho (Rotation Student, Human Genetics, University of Michigan)
2018 Matthew Pun (Rotation Student, Medical Science Training Progran, University of Michigan)
2017 Amanda Moccia (Rotation Student, Human Genetics, University of Michigan)
2017 Stephen Carney (Rotation Student, Human Genetics, University of Michigan)
2016 Tingyang Li (Rotation Student, Bioinformatics, University of Michigan)

Postdoctoral Fellows (n=3)

2023–current Melissa Englund (University of Michigan)
2022–current Torrin McDonald (University of Michigan)
2021–2022 Shengcheng Dong (University of Michigan)

Non-student Lab Volunteers (n=2)

2019–2021 Greg Farnum (University of Michigan)
2018–2019 Monica Holmes (Postbac, University of Michigan)

Undergraduate and High School Students (n=21)

2023–current Kateri Darr (Undergraduate, Computer Science, University of Michigan)
2023–current Mason Miller (Undergraduate, Computer Science, University of Michigan)
2022–current Summer Ann (Undergraduate, Neuroscience, University of Michigan)
2022–current Kobe Howcroft (Undergraduate, Computer Science, University of Michigan)
2021–current Preston Parana (Undergraduate, UROP Molecular, Cellular, and Developmental Biology, University of Michigan)
UROP Blue Ribbon Award
2021–2022 Julia Tweadey (Undergraduate, LSA Honors Program, Life Science Informatics, University of Michigan)
2021 Aryn Booker (Undergraduate, UROP Molecular, Cellular, and Developmental Biology, University of Michigan)
UROP Blue Ribbon Award
2020 Marcela Alcaide Aligio (Undergraduate, SROP, Hunter College CUNY)
2019–2020 David Wang (Undergraduate, UROP Computer Science, University of Michigan)
2019–2020 Jack Lu (Undergraduate, UROP Computer Science, University of Michigan)
2019–2020 Diana Davis (Undergraduate, Neuroscience and German, University of Michigan)
2019 Sheila Rasouli (Undergraduate, Neuroscience, University of Toronto)
2019 Vibhasri Davuluri (High School, Girls Who Code Summer Intern)
2016–2019 Cody Morterud (Undergraduate, UROP Computer Science / Honors Capstone, University of Michigan)
2016–2017 Colten Williams (Undergraduate, UROP Computer Science, University of Michigan)
2016–2017 Courtney Asman (Undergraduate, Neuroscience, University of Michigan)
2014–2017 Maxwell Spadafore (Undergraduate, LS&A Honors Informatics, University of Michigan)
2013–2014 Natalie Ng (High School, Stanford Institutes of Medicine Summer Research)
2013–2014 Dana Wyman (Undergraduate, Biology, Stanford University)
2013 Justin Young (High School, Stanford Institutes of Medicine Summer Research)
2012 Melanie Connick (Undergraduate, Biology, University of New Mexico)
2012 Edward Dai (Undergraduate, Computer Science, Stanford University)

Doctoral Thesis Committees (n=39)

2022–current Hawra Aljawad (Chemical Engineering, University of Michigan, Chair)
2022–current Emily Pogson (Genetics and Genomics, University of Michigan, Chair)
2022–current Katarina Pavlovic (Bioinformatics, University of Michigan, Chair)
2022–current Rintsen Sherpa (Bioinformatics, University of Michigan, Chair)
2022–current Kaiwen Deng (Bioinformatics, University of Michigan, Committee Memeber)
2022–current Emily Peirent (Neuroscience, University of Michigan, Committee Memeber)
2022–current Franco Tavella (Biophysics, University of Michigan, Committee Member)
2021–current Wenjin Gu (Bioinformatics, University of Michigan, Committee Member)
2021–current Kinsey Van Deynze (Bioinformatics, University of Michigan, Chair)
2021–current Mashiat Rabbani (Genetics and Genomics, University of Michigan, Committee Member)
2020–current Andrea Valenzuela (Chemical Biology, University of Michigan, co-Chair)
2020–current Breanna McBean (Genetics and Genomics, University of Michigan, co-Chair)
2020–current Camille Mumm (Genetics and Genomics, University of Michigan, Chair)
2018–current Rucheng Diao (Bioinformatics, University of Michigan, Committee Member)
2018–current Bradley Crone (Bioinformatics, University of Michigan, Chair)
2021–2023 Zijun Gao (Bioinformatics, University of Michigan, Committee Member)
Advance Machine Learning and Image Analysis Methods for Clinical Decision Support in Cardiovascular and Pulmonary Diseases
2018–2023 Nanxiang (Samuel) Zhao (Bioinformatics, University of Michigan, Chair)
Decoding Regulatory Variants with Computational Methods in Non-coding Regions of the Human Genome
2020–2023 Ashley Melnick (Cellular and Molecular Biology, University of Michigan, Committee Member)
Cdc73 Protects Notch-Induced Leukemia Cells From DNA Damage and Mitochondrial Stress
2016–2023 Christopher Castro (Bioinformatics, University of Michigan, Chair)
Investigating the Role of Noncoding De Novo Single-Nucleotide Variants in Autism Spectrum Disorder
2017–2023 Melissa Englund (Genetics and Genomics, University of Michigan, Chair)

Identification and Characterization of Cis-Regulatory Elements in the Human Genome

2018–2023 Stephen Carney (Cancer Biology, University of Michigan, Committee Member)
Epigenetic reprogramming in mutant IDH1 glioma influences radioresistance and neural lineage differentiation

2019–2023 Benjamin Yang (Biomedical Engineering, University of Michigan, Committee Member)
Towards Defining Principles of Cell Fate Plasticity

2018–2022 Marcus Sherman (Bioinformatics, University of Michigan, Committee Member)
Cultivation of enhanced bioinformatic-specific pedagogical manipulatives, interventions, and professional development

2021–2022 Kuan-Han Hank Wu (Bioinformatics, University of Michigan, Committee Member)
Integrating Electronic Health Records with Genetic Information to Advance Precision Medicine Approaches in Cardiovascular Disease

2017–2022 Amanda Moccia (Genetics and Genomics, University of Michigan, Committee Member)
Investigation of Developmental Disorders: Genetic Discovery and Functional Validation

2017–2022 Ningxin Ouyang (Bioinformatics, University of Michigan, Chair)
Deciphering Transcriptional Regulatory Circuits: Transcription Factor Binding and Regulatory Variants Identification

2015–2021 Torrin McDonald (Genetics and Genomics, University of Michigan, Chair)
Leveraging New Technologies to Explore Regulatory and Structural Elements of the Human Genome

2018–2021 Heming Yao (Bioinformatics, University of Michigan, Committee Member)
Machine Learning and Image Processing for Clinical Outcome Prediction: Applications in Medical Data from Patients with Traumatic Brain Injury, Ulcerative Colitis, and Heart Failure

2016–2021 Mohd Hafiz Bin Mohd Rothi (Molecular, Cellular, and Developmental Biology, University of Michigan, Committee Member)
Control of Chromatin by RNA-mediated Transcriptional Silencing

2016–2021 Shengcheng Dong (Bioinformatics, University of Michigan, Chair)
Computational Methods to Identify Regulatory Variants in the Non-coding Regions of the Human Genome

2017–2021 Steven Romanelli (Molecular & Integrative Physiology, University of Michigan, Committee Member)
Viral CRISPR/Cas9 Gene Transfer for Somatic Knockout in Brown Adipose Tissue

2018–2021 Negar Farzaneh (Bioinformatics, University of Michigan, Committee Member)
Automated Decision Support System for Traumatic Injuries

2016–2020 Shriya Sethuraman (Bioinformatics, University of Michigan, co-Chair)
Genome-wide Identification of Non-coding Transcription by RNA Polymerase V and Its Involvement in Transcriptional Gene Silencing

2015–2020 Sierra Nishizaki (Genetics and Genomics, University of Michigan, Chair)
Decoding the Non-coding Genome: Novel Technologies for the Characterization of Non-coding Elements and Variation

2017–2020 Christopher Lee (Biostatistics, University of Michigan, Committee Member)
Improvements and Developments in Gene Regulation and Single-Cell Gene Expression Data Analysis

2018–2019 Christine Ziegler (Biological Chemistry, University of Michigan, Committee Member)

2015–2018 Ari Allyn-Feuer (Bioinformatics, University of Michigan, Committee Member)
The Pharmacoepigenomics Informatics Pipeline and H-GREEN Hi-C Compiler: Discovering Pharmacogenomic Variants and Pathways with the Epigenome and Spatial Genome

2015–2017 Raymond Cavalcante (Bioinformatics, University of Michigan, Committee Member)
Beyond the Transcriptome: Facilitating Interpretation of Epigenomics and Metabolomics Data

2015–2017 Zhengting Zou (Bioinformatics, University of Michigan, Committee Member)
Model-based genomic studies of protein sequence evolution: convergence, epistasis, and amino acid acceptance rates

Preliminary Exam Committees (n=33)

2023 Ilakkiya Venkatachalam (Genetics and Genomics, University of Michigan)

2023 Jianhui Gong (Bioinformatics, University of Michigan)

2023 Mahnoor Gondal (Bioinformatics, University of Michigan)

2023 Elysia Chou (Bioinformatics, University of Michigan)
2022 Sean Moran (Bioinformatics, University of Michigan)
2022 Lu Lu (Bioinformatics, University of Michigan)
2022 Linghua Jiang (Bioinformatics, University of Michigan)
2022 Kaiwen Deng (Bioinformatics, University of Michigan)
2022 Yufeng Zhang (Bioinformatics, University of Michigan)
2021 Anthony Nguyen (Human Genetics, University of Michigan)
2021 Hanbyul Cho (Bioinformatics, University of Michigan)
2021 Charles Ryan (Cellular and Molecular Biology, University of Michigan)
2021 Kuan-Han Wu (Bioinformatics, University of Michigan)
2021 Wenjin Gu (Bioinformatics, University of Michigan)
2020 Jie Cao (Bioinformatics, University of Michigan)
2020 Zijun Gao (Bioinformatics, University of Michigan)
2020 Ashley Melnick (Cellular and Molecular Biology, University of Michigan)
2019 Benjamin Yang (Biomedical Engineering, University of Michigan)
2019 Maria Virgilio (Cellular and Molecular Biology, University of Michigan)
2018 Zhi Carrie Li (Bioinformatics, University of Michigan)
2018 Kevin Hu (Bioinformatics, University of Michigan)
2018 Siyu Liu (Bioinformatics, University of Michigan)
2018 Alexandra Weber (Bioinformatics, University of Michigan)
2018 Mitch Fernandez (Bioinformatics, University of Michigan)
2017 Tingyang Li (Bioinformatics, University of Michigan)
2017 Marcus Sherman (Bioinformatics, University of Michigan)
2017 Adrienne Shami (Human Genetics, University of Michigan)
2017 Trenton Frisbie (Human Genetics, University of Michigan)
2017 Melissa Englund (Human Genetics, University of Michigan)
2017 Peter Orchard (Bioinformatics, University of Michigan)
2017 Li Guan (Bioinformatics, University of Michigan)
2016 Shriya Sethuraman (Bioinformatics, University of Michigan)
2016 Jed Carlson (Bioinformatics, University of Michigan)

Industry Experience

2013–2014 Consultant, Color Genomics
Personalized medicine / genomics startup

Publications

* Indicates co-first authorship † Indicates co-senior authorship
underscore indicates lab members

[1] Lee S, McAfee JC, Sharp RR, Clarke D, Gerstein MB, **Boyle AP**, Sullivan PF, Love MI, Won H. "Massively parallel reporter assay investigates shared genetic variants of eight psychiatric disorders." ***submitted*** 2023.

[2] Zhao N, Dong S, **Boyle AP**. "Organ-specific prioritization and annotation of non-coding regulatory variants in the human genome." ***bioRxiv*** 2023.

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