Alan P. Boyle

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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
2021–present	**Affiliate,** Michigan Neuroscience Institute
2020–present	**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

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

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

2023–current	Zongrui Dai (M.S. Student, Bioinformatics, 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)*
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–current 2017–2018	Samuel Zhao (Ph.D. Student, Bioinformatics, University of Michigan) 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

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

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

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

Undergraduate and High School Students

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

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	Zijun Gao (Bioinformatics, 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 (Human Genetics, University of Michigan, Committee Member)
2020–current	Andrea Valenzuela (Chemical Biology, University of Michigan, co-Chair)
2020–current	Breanna McBean (Human Genetics, University of Michigan, co-Chair)
2020–current	Camille Mumm (Human Genetics, University of Michigan, Chair)
2018–current	Rucheng Diao (Bioinformatics, University of Michigan, Committee Member)
2018–current	Samuel Zhao (Bioinformatics, University of Michigan, Chair)
2018–current	Bradley Crone (Bioinformatics, University of Michigan, Chair)
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 (Human Genetics, 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 (Human Genetics, 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 (Human Genetics, 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 (Human Genetics, 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

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

<u>underscore</u> indicates lab members

[1] Zhao N, Wang S, Huang Q, Dong S, **Boyle AP**. "Explain-seq: an end-to-end pipeline from training to interpretation of sequence-based deep learning models." ***bioRxiv*** 2023.

[2] <u>Holmes MJ</u>, Mahjour B, <u>Castro CP</u>, <u>Farnum GA</u>, <u>Diehl AG</u>, **Boyle AP**. "LRphase: an efficient method for assigning haplotype identity to long reads." ***bioRxiv*** 2023.

[3] <u>Ouyang N</u>, **Boyle AP**. "Quantitative assessment of association between noncoding variants and transcription factor binding." ***bioRxiv*** 2022.

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