Stephen C. J. Parker
Associate Professor of Computational Medicine and Bioinformatics
Associate Professor of Human Genetics
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Education and Training

Education

09/1994-04/1998	BS, Biology with a Concentration in Molecular Biology, East Carolina University, Greenville, North Carolina
01/1998-12/2000	MS, Molecular Biology and Biotechnology, East Carolina University, Greenville, NC
08/2004-04/2009	PhD, Bioinformatics and Systems Biology, Boston University, Boston, MA

PostDoctoral Training

08/2009-08/2011	Postdoctoral Fellow, Computational Biology, National Institutes of Health (NIH), National Human Genome Research Institute (NHGRI), Bethesda, MD
09/2011-08/2014	Research Fellow, Pharmacology Research Associate (PRAT) Fellow in Computational Biology, National Institutes of Health (NIH), National Institute of General Medical Sciences (NIGMS), Bethesda, MD

Academic, Administrative, Clinical, Research and Military Appointments

Academic Appointments

09/2014-05/2019	Assistant Professor in Department of Computational Medicine and Bioinformatics, University of Michigan - Ann Arbor, Ann Arbor, Michigan
09/2014-05/2019	Assistant Professor Department of Human Genetics, University of Michigan - Ann Arbor, Ann Arbor, MI
05/2019-present	Associate Professor Department of Computational Medicine & Bioinformatics, University of Michigan, Ann Arbor (Tenured)
05/2019-present	Associate Professor Department of Human Genetics, University of Michigan, Ann Arbor

Industry

05/1996-08/1997	Research Assistant, Glaxo Wellcome (Currently GSK), RTP, Durham, NC
05/1998-08/1998	Research Associate, Novartis Biotechnology, Inc, Durham, NC
01/2001-06/2002	Associate Scientist, Cogent Neuroscience Inc., Durham, NC
07/2002-08/2004	Genome Closure Data Analyst, The Broad Institute & MIT Center for Genome Research, Cambridge, MA
03/2009-08/2009	Bioinformatics Consultant, BD TriPath, RTP, Durham, NC

Research Interests

- We study the effects of genetic variation on chromatin architecture and transcriptional regulation at single-cell resolution. The major goal of the lab is to generate mechanistic knowledge about how disease susceptibility is encoded in the non-coding portion of the genome (from GWAS), with a focus on complex metabolic diseases including diabetes and related traits. We accomplish this through an interdisciplinary combination of molecular /cellular and computational approaches. We generate multiple high-throughput data sets on the genome, epigenome, and transcriptome across species and in diesease-relevant tissues/cells at single-cell multi-omic resolution and develop/use computational approaches to integrate and analyze this data.

Grants

Current Grants

R01DK072193: Targeted Genetic Analysis of T2D and Quantitative Traits SubK-NIH-DHHS-US through a consortium with University of North Carolina a- 20-PAF06840
Co-I with Effort (Principal Investigator: Boehnke, Michael Lee)
12/2020-11/2025. $475,998

1U01DK127777-01: Determining the Intrinsic and Environmental Signal Contributing to Early T1D Progression SubK-NIH-DHHS-US through a consortium with Cornell University- 20-PAF06321
Parker, Stephen CJ, PI
09/2020-11/2024. $1,206,654

1UM1DK126185-01: Bridging the gap between type 2 diabetes GWAS and therapeutic targets SubK-NIH-DHHS-US through a consortium with University of North Carolina a- 20-PAF03173
Parker, Stephen CJ, PI
07/2020-06/2025. $2,643,354

5F31HG01118602: Statistical Methods for the Analysis of Long-Read Sequencing Data NIH-DHHS-US- 20-PAF00584
Co-I without Effort (Principal Investigator: Michael Lee Boehnke)
05/2020-04/2022. $37,300

Task Order HHSN26800001: Trans-Omics for Precision Medicine (TOPMed) Informatics Research Center (IRC) NIH-DHHS-US- 20-PAF05757
Co-I with Effort (Principal Investigator: Abecasis, Goncalo)
04/2020-12/2022. $11,653,119

Genetic modulators of opioid exposure in human neurologic development. (Co-PI roles: Co-wrote proposal; leading iPSC cohort acquisition, study design, epigenome profiling data generation, computational integration of genome, epigenome, transcriptome, and subject phenotype data.) University of Michigan, Precision Health Investigator
Parker, Stephen CJ, Co-PI; Bielas, Stephanie, Co-PI
11/2018-10/2021. $300,000

1 R01 DK117960: Context-specific and combinatorial genetic regulatory grammars in diabetes NIH-DHHS-US- 18-PAF01128
Parker, Stephen CJ, PI
09/2018-08/2023. $2,518,393

5U01DK06237018: Identifying Genes for Type 2 Diabetes: FUSION NIH-DHHS-US- 18-PAF02198
Co-I with Effort (Principal Investigator: Boehnke, Michael Lee;Scott, Laura Jean)
08/2018-07/2023. $3,633,282

3 U24 DK112342 -03S1: Michigan MoTrPAC Chemical Analysis Site (MiCAS) NIH-DHHS-US- 16-PAF05168; 19-PAF06799
Co-I with Effort (Principal Investigator: Charles Burant)
12/2016-11/2022. $8,403,328

Submitted Grants

Epithelial BMI1 regulation of pancreatic neoplasia NIH-DHHS-US- 21-PAF02975
Co-I without Effort (Principal Investigator: Bednar, Filip)
12/2021-11/2026. $1,334,603

The Origins of Cancer Stem Cell Reprogramming and Fitness NIH-DHHS-US- 21-PAF03097
Co-I without Effort (Principal Investigator: Weiss, Stephen J)
09/2021-08/2026. $3,661,896

Application of adipose single nuclei RNA-seq to study insulin resistance and cellular senescence in obese subjects NIH
Other (Principal Investigator: Musi)
09/2021-08/2026

The Regulation of Hepatic Metabolic Zonation by the Diabetes Gene TCF7L2 SubK-NIH-DHHS-US through a consortium with The University of Texas Health- 21-PAF05764
Parker, Stephen CJ, PI
09/2021-08/2026. $282,580

Uncover the role of H3.3-G343R mutation in shaping the DNA damage response, anti-tumor immunity and mechanisms of resistance in glioma. NIH-DHHS-US- 21-PAF05156
Co-I without Effort (Principal Investigator: Castro, Maria)
09/2021-08/2026. $3,228,160

Michigan Integrative Musculoskeletal Health Core Center NIH-DHHS-US- 21-PAF00250
Co-I with Effort (Principal Investigator: Jepsen, Karl John)
08/2021-07/2026. $3,899,810

1 R01 DK129469-01: Multi-omic genetic regulatory signatures underlying tissue complexity of diabetes in the pancreas at single-cell spatial resolution NIH
Parker, Brissova, Liu, Co-PI
07/2021-06/2026. $3,995,586

1 R01 HD105674-01: Single-cell chromatin and transcriptome developmental regulatory mapping of caudal structural birth defects NIH
Keegan, Parker, Co-PI
07/2021-06/2026. $3,843,200

Metabolic Mechanisms of TET2-mediated control of CD8+ T cell memory American Society of Hematology- 21-PAF04051
Co-I without Effort (Principal Investigator: Correa, Luis Omar)
07/2021-06/2022. $80,000

EMT and the Paracrine Induction of Cancer Stem Cell Programming NIH-DHHS-US- 20-PAF08748
Co-I without Effort (Principal Investigator: Weiss, Stephen J)
04/2021-03/2026. $3,661,896

Past Grants

Single nuclei resolution skeletal muscle chromatin and gene expression signatures in diabetes FNIH- 19-PAF06778
Parker, Stephen CJ, Co-PI; Scott, Laura, Co-PI
08/2019-09/2020. $966,550 ($966,550)

AMP T2D OP Funding: Dense skeletal muscle chromatin maps in diabetes Broad Institute
Stephen CJ Parker, PI, PI
06/2019-04/2021. $379,750

Dense skeletal muscle chromatin maps in diabetes SubK-NIH-DHHS-US through a consortium with Broad Institute- 19-PAF06269
Parker, Stephen Cj, PI
03/2019-04/2020. $386,000 ($170,500)

RFX6 transcriptional regulation in type 2 diabetes (Intern Award) ADA- 19-PAF04069
Parker, Stephen Cj, PI
01/2019-12/2019. $3,000 ($3,000)

Genetic Epidemiology of Rare and Regulatory Variants for Metabolic Traits SubK-NIH-DHHS-US through a consortium with University of North Carolina a- 17-PAF03737
Co-I with Effort (Principal Investigator: Boehnke, Michael Lee)
08/2018-07/2019. $47,103

7-18-MUI-002: RFX6 transcriptional regulation in type 2 diabetes American Diabetes Association (Minority Undergraduate Internship Award)
Parker, Stephen CJ, PI
07/2018-06/2019. $3,000

Patient-Specific Phenotyping of Genetic and Environmental Contributors to Cardiomyopathy. (Co-PI roles: Co-wrote proposal; leading study design and computational analysis of chromatin profiling data.) University of Michigan, Research Stimulus Funding Opportunity Award
Parker, Stephen CJ, Co-PI; Liu, Allen, Co-PI; Helms, Adam, Co-PI
05/2018-04/2019. $35,000

NVIDIA GPU Grant NVIDIA Corporation
Stephen CJ Parker, PI
10/2017. $1,200

7-17-MUI-002: A potential novel genetic link between transcriptional regulation in rare neonatal diabetes and common adult-onset type 2 diabetes American Diabetes Association (Minority Undergraduate Internship Award)- 18-PAF00536
Parker, Stephen CJ, PI
07/2017-06/2018. $3,000

5U01HL13718203: Scalable and Translational Analysis Tools on the Cloud for Deep Integrative Omics Data NIH-DHHS-US- 17-PAF00023
Co-I with Effort (Principal Investigator: Kang, Hyun Min)
04/2017-03/2020. $1,628,682

5 R21 DA041202-02: Molecular basis of GABRA2 haplotypes associated with behavior and addiction NIH-DHHS-US- 16-PAF00083
Co-I with Effort (Principal Investigator: Burmeister, Margit)
07/2016-06/2018. $422,830

5 R00 DK099240-04: Synthesizing genome, epigenome, and transcriptome datasets in type 2 diabetes NIH-DHHS-US- 15-PAF00221
Parker, Stephen CJ, PI
05/2015-04/2019. $726,371

1 U01 DK105561: Functional genetic variants for type 2 diabetes SubK-NIH-DHHS-US through a consortium with University of North Carolina a- 15-PAF00027
Parker, Stephen CJ, PI
04/2015-03/2020. $384,813

Accelerating Medicines Partnership: Enhancement of the Type 2 Diabetes Knowledge Portal Foundation for the National In- 15-PAF00682
Co-I with Effort (Principal Investigator: Michael Lee Boehnke)
01/2015-12/2016. $2,567,844

1-14-INI-07: Deconstructing type 2 diabetes using genome-wide high-density multi-tissue omics profiling American Diabetes Association- 15-PAF00322
Parker, Stephen CJ, PI
01/2015-12/2020. $1,542,664

Cell-type specific epigenome and transcriptome signatures of alpha and beta cells in rat islets. NIH/NHGRI/NISC Pilot Project Sequencing Award
Stephen CJ Parker, PI
01/2014-12/2014. $10,000

Allelic and cross-species signatures of functional chromatin architecture in diabetes relevant cells. NIH/NHGRI/NISC Pilot Project Sequencing Award
Stephen CJ Parker, PI
01/2014-12/2014. $10,000

Honors and Awards

National

2007	Genome Research Best Poster Award (Biology of Genomes Meeting)
2008-2009	National Academies, Ford Foundation Dissertation Fellowship
2008-2017	Associate Faculty Member, Faculty of 1000 Biology
2010	Genome Technology Young Investigators of the Year Award
2013	Selected Participant to Invitation-Only Cold Spring Harbor Banbury Conference on "Enhancer Biology in Health and Disease"
2014	Highlighted on American Diabetes Association TV (https://youtu.be/bqcHXd4pYJo)
2016-2017	American Association for University Women Doctoral Fellowship (Arushi Varshney, PhD Student)
2019	Intel International Science and Engineering Fair (ISEF), Phoenix, Arizona, 4th Place in Computational Biology category out of >100 entries (Collin Wang, High School Visiting Scholar)

Regional

2017	Michigan Science and Engineering Fair, 2nd Place in Life Sciences (Collin Wang, High School Visiting Scholar)
2017	Most likely transformative scientific impact at the Annual Michigan Institute for Data Science (MIDAS) Symposium. (Ricardo Albanus, PhD Student)
2017	Science & Engineering Fair of Metropolitan Detroit, 1st Place in Computational Biology and Bioinformatics (Collin Wang, High School Visiting Scholar)
2018	Science & Engineering Fair of Metropolitan Detroit, 1st Place in Computational Biology and Bioinformatics (Collin Wang, High School Visiting Scholar)
2019	Science & Engineering Fair of Metropolitan Detroit, 1st Place in Computational Biology and Bioinformatics (Collin Wang, High School Visiting Scholar)

Institutional

1999	East Carolina University James S. McDaniel Scholarship for Outstanding Graduate Student
2000	East Carolina University Mary C. Helms Scholarship for Outstanding Graduate Student
2000	East Carolina University Research Day Best Poster Presentation Award
2004-2005	Boston University Presidential Fellowship
2009	Boston University Bioinformatics Innovative Teaching Award
2011-2014	NIH/NIGMS Pharmacology Research Associate (PRAT) Fellowship ($285,000)
2013	Fellows Award for Research Excellence (FARE), National Institutes of Health
2013	Trainee of the Year Award, NIH/NHGRI
2014	Distinguished Postbac Mentor Award, NIH
2016	Department of Human Genetics retreat best poster award (Arushi Varshney, PhD Student)
2017-2018	Barbour International Doctoral Scholarship (Arushi Varshney, PhD Student)
2017	Department of Computational Medicine & Bioinformatics retreat best poster award 2nd place (Ricardo Albanus, PhD Student)
2018-2019	Rackham Predoctoral Fellowship (Arushi Varshney, PhD Student)
2019-2020	Rackham Predoctoral Fellowship (Peter Orchard, PhD Student)
2019	Rackham Graduate Student Research Grant (Vivek Rai, PhD Student)
2019	U-M Precision Health Symposium Poster Award. 2nd place for most interdisciplinary science.

Memberships in Professional Societies

2012-present	Member, American Diabetes Association

2014-present	Member, American Society of Human Genetics
2014-present	Member, International Society for Computational Biology

Editorial Positions, Boards, and Peer-Review Service

Study Sections

International

2015-2016	Diabetes UK Grant Review Panel (Ad Hoc)
2018	Agence Nationale de la Recherche (France). Scientific Research Grant Review Panel (Ad Hoc)
2018	Medical Research Council (MRC), Research Grants Board (UK) (Ad Hoc)
2020-2021	Wellcome Trust, United Kingdom (Ad Hoc)

National

2016	External Grant Reviewer for GrantSeeker Program at University of Texas Health Science Center at San Antonio (UTHSCSA) (Ad Hoc)
2017	National Institutes of Health (NIH), National Human Genome Research Institute (NHGRI), Human Heredity and Health in Africa (H3Africa) Research Projects (Ad Hoc)
2018-2020	American Diabetes Association Scientific Research Grant Review Committee
2018	National Aeronautics and Space Administration (NASA) Human Exploration Research Opportunities (HERO) Omics Study Section (Ad Hoc)
2019	National Institutes of Health (NIH), National Human Genome Research Institute (NHGRI), Genome Research Review Committee, GNOM-G, Centers of Excellence in Genomic Science (CEGS) (Ad Hoc)
2019	National Institutes of Health (NIH), National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK), Strategic Planning Meeting for Research Gaps and Opportunities in Youth-Onset T2D (Ad Hoc)
2020-2021	External Advisory Board for the Human Islet Phenotyping Program of the Integrated Islet Distribution Program (IIDP) (Ad Hoc)
2020	National Institutes of Health (NIH), Genomics, Computational Biology and Technology Study Section Genes, Genomes, and Genetics Integrated Review Group (GCAT) (Ad Hoc)
2020	National Institutes of Health (NIH), Study Section for RFA-RM-20-001: Transformative Technology Development for the Human Biomolecular Atlas Program (HuBMAP), 2020/08 ZRG1 IMST-M (50) R (Ad Hoc)
2021	Indiana Diabetes Research Center (IDRC), Pilot and Feasibility Program Grant Review (Ad Hoc)
2021	National Institutes of Health (NIH), Study Section for RFA-HG-20-047: Developing Predictive Models of the Impact of Genomic Variation on Function for the Impact of Genomic Variation on Function (IGVF) Consortium (chair for one grant when assigned chair was in conflict) (Ad Hoc)

Institutional

2016	University of Michigan Medical School and Peking University Health Sciences Center Joint Institute grant review (Ad Hoc)
2017	University of Michigan Center for RNA Biomedicine Pilot Grants (Ad Hoc)
2020	University of Michigan Genome Science Training Program (GSTP) review panel (Ad Hoc)
2021	University of Michigan Integrative Musculoskeletal Health Core (MiMHC) Center Pilot Grant Review (Ad Hoc)

Editorial Boards

2017-present	Board of Editors, eLife

Journal Reviewer

2012	Genome Research (Ad Hoc)

2013	Nucleic Acids Research (Ad Hoc)
2014	BMC Bioinformatics (Ad Hoc)
2014	BMC Genomics (Ad Hoc)
2014	Genome Biology (Ad Hoc)
2014	PLOS ONE (Ad Hoc)
2015	American Journal of Human Genetics (Ad Hoc)
2015	Bioinformatics (Ad Hoc)
2015	Diabetes (Ad Hoc)
2015	Gene (Ad Hoc)
2015	Nature Communications (Ad Hoc)
2015	Nature Genetics (Ad Hoc)
2016	PeerJ (Ad Hoc)
2016	Trends in Genetics (Ad Hoc)
2017	Nature (Ad Hoc)
2019	MirCore Genes In Diseases And Symptoms (GIDAS) abstract reviewer (Ad Hoc)
2019	Nature Reviews Endocrinology (Ad Hoc)
2020	Nature Partner Journals: Genomic Medicine (Ad Hoc)
2020	Nature Protocols (Ad Hoc)
2020	PLOS Computational Biology (Ad Hoc)

Teaching

Graduate Student

05/2015-05/2019	Arushi Varshney, PhD, University of Michigan
05/2015-02/2020	Ricardo Albanus, PhD, University of Michigan
01/2016-06/2020	Peter Orchard, PhD, University of Michigan
05/2016-07/2016	Adrienne Niederriter, MD/PhD (rotation), University of Michigan
01/2017-04/2017	Alexandra Weber, PhD (rotation), University of Michigan
05/2017-08/2017	Kevin Hu, PhD (rotation), University of Michigan
08/2017-09/2017	Renaid Kim, MD/PhD (rotation), University of Michigan
01/2018-03/2018	Callie Swanepoel, PhD (rotation), University of Michigan
01/2018-05/2018	Rachel Lopez, PhD (rotation), University of Michigan
01/2018-present	Vivek Rai, PhD, University of Michigan
02/2018-04/2018	Renee Conway, PhD (rotation), University of Michigan
01/2019-04/2019	Minjun Jin, PhD (rotation), University of Michigan
07/2019-09/2019	Ford Hannum, PhD (rotation), University of Michigan
09/2019-01/2020	Jeremy Kaplan, MS, University of Michigan
09/2019-05/2020	Keejeong Ryu, MS, University of Michigan
09/2019-05/2020	Nuha Mahmood, MS, University of Michigan
09/2019-09/2020	Cynthia Zajac, MS, University of Michigan
01/2020-03/2020	Anne Marie Wetzel, PhD (rotation), University of Michigan
01/2020-03/2020	Hank Wu, PhD (rotation), University of Michigan
01/2020-present	Christa Ventresca, PhD, University of Michigan
03/2020-05/2020	Camille Mumm, PhD (rotation), University of Michigan
09/2020-present	Cynthia Zajac, PhD, University of Michigan
10/2020-12/2020	Stuart Castenada, PhD (rotation), University of Michigan
10/2020-12/2020	Breanna McBean, PhD (rotation), University of Michigan

02/2021-05/2021	Ahmed Elhossiny, PhD (rotation), University of Michigan
02/2021-05/2021	Kinsey Van Deynze, PhD (rotation), University of Michigan

Postdoctoral Fellow

07/2015-08/2018	Yasuhiro Kyono, PhD, University of Michigan
08/2017-10/2019	Daniel Quang, PhD, University of Michigan
09/2018-11/2020	Venkat Ramamoorthi Elangovan, PhD, University of Michigan
02/2020-present	Ricardo Albanus, PhD, University of Michigan
04/2021-present	Adelaide Tovar, PhD, University of Michigan

Undergraduate Student

10/2016-05/2017	Maximilian Wehner, BS, University of Michigan
10/2016-09/2018	Sophia Manduca, BS, University of Michigan
09/2017-03/2020	Iyana Whalen, BS, University of Michigan
09/2017-03/2020	Jessica Ebeling, BS, University of Michigan
06/2018-08/2018	Stephanie Laureano, BS, University of Puerto Rico at Humacao , University of Michigan UM-SMART Program
09/2018-05/2019	Nicole Kim, BS, University of Michigan
09/2019-present	Samir Agarwala, BS, University of Michigan

Visiting Scholars

06/2015-09/2015	Hadley VanRenterghem, High School, Ann Arbor Huron High School
06/2017-12/2018	Collin Wang, High School, Detroit Country Day Upper School
06/2020-09/2020	Sebastien Goffart, MS, Polytech Nice Sophia Antipolis, France

Teaching Activity

Institutional

01/2015-present	PhD Candidate Preliminary Exams: Wei Zhou, Shriya Sethuraman, Yaya Zhai, Li Guan, Marcus Sherman, Jun Chen, Christopher Castro, Zena Lapp, Mitch Fernandez, Heming Yao, Danny Geiszler, Chen Sun, Yanchao Pan, April Kriebel
01/2015-present	PhD Thesis Committees: Chee Lee, Patricia Garay, Christina Vallianatos, Hongjiu Zhang, Wei Zhou, Alexandre Daly, Owen Funk, Tongyu Liu, Yeji Lee, Brooke Wolford, Jonathan Herrera, Andrew Liu, Ariel McShane, Ashwin Iyer, Sarah Hanks, Li Guan, Alec Monovich, Fan Feng, Sarah Hanks
02/2015-05/2016	Lecturer, BIOINF 525: Foundations in Bioinformatics and Systems Biology, University of Michigan
02/2015-05/2019	Lecturer, BIONF 545 / BIOSTAT 646: High-throughput Molecular Genomic and Epigenomic Data Analysis, University of Michigan
08/2015-present	Lecturer, BIONF 523: Bioinformatics Basic Biology Lab, University of Michigan
08/2015-present	Course Mentor, HG821/822: Student Seminar, University of Michigan
08/2016-present	Lecturer, Foundations in Molecular Medicine, University of Michigan
01/2019-present	Lecturer, HG 542: Molecular Basis of Human Genetic Disease, University of Michigan
12/2019-present	Lecturer, GTP 632 "From GWAS to therapeutic targets using statistical molecular genetics." University of Michigan
02/2020-present	Lead Instructor, BIONF 545 / BIOSTAT 646: High-throughput Molecular Genomic and Epigenomic Data Analysis, University of Michigan
03/2021	Lecturer: BME 599 Computational Tools for Genomic Technologies

Dissertation Committees

2015	Hongjiu Zhang, Cancer sequencing analysis suite for scalable mapping of sequences and accurate inference of expression profiles and heterogeneity., University of Michigan, Computational Medicing & Bioinformatics, Committee Member

2016	Chee Lee, Functional interpretation of high-throughput sequencing data., University of Michigan, Computational Medicing & Bioinformatics, Committee Member
2016	Wei Zhou, Computational and statistical approaches for large-scale genome-wide association studies for cardiovascular diseases., Umiversity of Michigan, Computational Medicing & Bioinformatics, Committee Member

Committee and Administrative Services

Committee Services

International

2015-2020	National Institutes of Health (NIH) National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK) Accelerating Medicines Partnership (AMP) Steering Committee (NASC), Member
2016-2021	American Diabetes Association (ADA) Scientific Sessions Content Planning Subcommittee: Genetics and Gene Regulation, Member
2017	Harnessing Big Data for Precision Medicine: Infrastructures and Applications, Pacific Symposium on Biocomputing, Workshop Organizer
2020-present	Diabetes Genetics Discussion Group (DG2), Member
2020-present	National Institutes of Health (NIH) National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK) Accelerating Medicines Partnership (AMP) Common Metabolic Diseases (CMD) Voting member, Member
2020	American Diabetes Association Session: From Genome-Wide Association Studies to Multi- omics-Defining Diabetes Risk and Clinical Relevance, Chair (declined)
2021	American Society of Human Genetics abstract review committee: Complex Traits and Polygenic Disorders: Other phenotypes, multiple disorders, and computational approaches, member

National

2011-2013	National Institutes of Health (NIH), National Human Genome Research Institute (NHGRI) Genome Trainee Advisory Committee, Member
2012	National Institutes of Health (NIH), National Human Genome Research Institute (NHGRI), Summer Intern Career Development Panel Discussion, Panel Member
2013	National Institutes of Health (NIH) Retreat Planning Committee, Panel Member
2016-present	American Diabetes Association (ADA) Abstract Review Committee, Member
2016	Great Lakes Bioinformatics and the Canadian Computational Biology Conference, Manuscript Review Committee, Manuscript Review Committee
2017	American Society for Human Genetics (ASHG) Abstract Review Committee, Bioinformatics and Computational Approaches Section, Abstract Review Committee
2019	Midwest Islet Club (MIC) Conference Planning Committee, Member

Institutional

2015-2016	Admissions Committee, University of Michigan Department of Computational Medicine and Bioinformatics, Co-Chair
2016-present	Bioinformatics Core Scientific Advisory Committee, University of Michigan, Member
2016-present	Department of Computational Medicine & Bioinformatics, University of Michigan, Website Committee, Co-chair
2016-present	Executive Committee, Center for RNA Biomedicine, University of Michigan, Member
2017-present	Admissions Committee, University of Michigan Department of Computational Medicine and Bioinformatics, Chair
2017-present	Operations Committee for the Medical Scientist Training Program (MSTP), University of Michigan, Member
2017-present	Philanthropy and Outreach Committee, Department of Human Genetics, Member
2018-present	Epigenomics Core Scientific Advisory Committee, University of Michigan, Member
2018	DNA Sequencing Core Director Search Committee, University of Michigan, Member

2018 Genetics and Genomics Campus Connection, Summer Bridge Scholars Program, Department of Human Genetics, University of Michigan, Member

Visiting Professorships and Extramural Invited Presentations

Visiting Professorships

01/09/2020-present Vanderbilt Diabetes Center: Non-coding genetic regulatory convergence across diabetes GWAS loci, Vanderbilt, January 2020, Nashville, TN

03/09/2021-present Context-Specific Genetic Regulation of Chromatin Architecture in Diabetes, University of Texas, San Antonio: PRecision in the Science of Medicine (PRiSM) series, March 2021, virtual

Extramural Invited Presentations

1. Oral Presentation, The ENCODE Consortium Chromatin and Replication Subgroup Meeting, October 2005, Seattle, WA
2. 8th International Workshop on Bioinformatics and Systems Biology, Boston University, June 2008, Zeuthen, Germany
3. Presentation, Helicos BioSciences Corporation, May 2009, Cambridge, MA
4. Oral Presentation, The ENCODE Consortium Meeting, March 2010, Bethesda, MD
5. Friday Floor Forums, National Human Genome Research Institute, National Institutes of Health, November 2010, Cambridge, MD
6. Annual Retreat, The National Human Genome Research Institute, National Institutes of Health, November 2010, Cambridge, MD
7. The 17th Conversation: Journal of Biomolecular Structure and Dynamics; Invited under young investigator program, University at Albany SUNY, June 2011, Albany, NY
8. Chromatin DECODE Meeting, The National Institutes of Health, November 2012, Bethesda, MD
9. The Biology of Genomes Meeting, Cold Spring Harbor Laboratory, May 2013, Cold Spring Harbor, NY
10. Banbury Meeting on Enhancer Biology in Health and Disease, Cold Spring Harbor Laboratory, October 2013, Cold Spring Harbor, NY
11. Earl Stadtman tenure track investigator search: Symposium on Computational Biology, The National Institutes of Health, December 2013, Bethesda, MD
12. Department of Biostatistics and Bioinformatics, Duke University, January 2014, Durham, NC
13. The Jackson Laboratory for Genomic Medicine, The Jackson Laboratory, January 2014, Farmington, CT
14. Program in Bioinformatics & Integrative Biology, University of Massachusetts Medical School, February 2014, Worcester, MA
15. Department of Genetics and Genome Sciences, Case Western Reserve University, February 2014, Cleveland, OH
16. Earl Stadtman Investigator talk, The National Institutes of Health, National Institute on Aging, February 2014, Baltimore, MD
17. Department of Medicine, Vanderbilt University School of Medicine, March 2014, Nashville, TN
18. The Jackson Laboratory, The Jackson Laboratory, March 2014, Bar Harbor, ME
19. The Biology of Genomes Meeting, Cold Spring Harbor Laboratory, May 2014, Cold Spring Harbor, NY
20. The American Diabetes Association 74th Scientific Sessions, American Diabetes Association, June 2014, San Francisco, CA
21. Graduate Student Society, University of Rochester, January 2015, Rochester, NY
22. American Diabetes Association 76th Scientific Sessions, American Diabetes Association, June 2016, New Orleans, LA
23. Genomics, Wayne State University, October 2016, Detroit, MI
24. Science at the Edge seminar series, Michigan State University, December 2016, Lansing, MI
25. Diabetes and Obesity Research Institute (DORI) annual symposium, University of Southern California, February 2017, Los Angeles, CA
26. American Diabetes Association 77th Scientific Sessions, American Diabetes Association, June 2017, San Diego, CA

27. Non-coding regulatory genomics in human health and disease., Progenity Inc., August 2017, Ann Arbor, MI
28. Accelerating Medicines Partnership for Type 2 Diabetes (AMP T2D) Meeting, NIDDK, March 2018, Betheda, MD
29. Genome Sciences Seminar Series, University of Virginia, Center for Public Health Genomics, March 2018, Charlottsville, VA
30. Towards a functional understanding of the diabetic genome., NIDDK, April 2018, Bethesda, MD
31. Integrative computational genomics to understand T2D GWAS targets, Pfizer, December 2018, Boston, MA
32. Corporate Advisory Council (CAC) Meeting, American Diabetes Association, February 2019, New York, NY
33. Institute for Quantitative Health Science and Engineering (IQ) Seminar Series, Michigan State University, April 2019, East Lansing, MI
34. Midwest Islet Club (MIC) Conference platform presentation (Vivek Rai, PhD student), Midwest Islet Club (MIC), May 2019, Ann Arbor, MI
35. American Diabetes Association 79th Scientific Sessions, American Diabetes Association, June 2019, San Fransisco, CA
36. Accelerating Medicines Partnership-Type 2 Diabetes (AMP T2D)
Annual Parliament Meeting, NIH, October 2019, Boston, MA
37. Accelerating Medicines Partnership for Type 2 Diabetes (AMP-T2D) skeletal muscle single nuclei multi-omics profiling, AMP-T2D, January 2020, Zoom
38. Foundation for the National Institutes of Health (FNIH) skeletal muscle single nuclei multi-omics profiling, FNIH, February 2020, Bethesda, MD
39. 10x Genomics single nuclei multi-omics profiling highlights, 10X Genomics, May 2020, Zoom
40. American Diabetes Association 80th Scientific Sessions: Pathway to Stop Diabetes, American Diabetes Association, June 2020, Chicago, IL (online)
41. American Diabetes Association 80th Scientific Sessions: Genetics of Type 2 Diabetes and Idenifying Targets, American Diabetes Association, June 2020, Chicago, IL (online)
42. Molecular Transducers of Physical Activity Consortium (MoTrPAC) skeletal muscle single nuclei cross-species multi-omic profiling, MoTrPAC, August 2020, Zoom
43. Single nuclei resolution chromatin and gene expression profiling in skeletal muscle across 287 genotyped individuals reveals cell-specific genetic regulatory architectures, American Society for Human Genetics (ASHG) annual meeting, October 2020, Zoom
44. Context-specific genetic regulation of diabetes-predisposing molecular activity, University of Virginia Biotechnology PhD Training Program Biennial Symposium keynote speaker, November 2020, Zoom
45. Context-specific genetic regulation of chromatin architecture in diabetes, NIH Enhancers, Gene Regulation and Genome Organization Conference, November 2020, Zoom
46. Context-specific genetic regulation of skeletal muscle biology, Pfizer, December 2020, Zoom
47. Determining the Intrinsic and Environmental Signal Contributing to Early T1D Progression, Human Islet Research Network (HIRN) Consortium on Beta Cell Death & Survival (CBDS), December 2020, Zoom
48. Context-specific genetic regulation of chromatin architecture in skeletal muscle, Pfizer, March 2021, virtual
49. Single nucleus skeletal muscle chromatin and gene expression profiling across 287 individuals reveals cell type-specific genetic regulatory architectures at T2D GWAS loci, Biology of Genomes meeting, Cold Spring Harbor Laboratory, May 2021, virtual
50. Single Nuclei Skeletal Muscle Chromatin and Gene Expression Profiling Across 287 Individuals Reveals Cell Type-Specific Genetic Regulatory Architectures at T2D GWAS Loci, American Diabetes Association 81st Scientific Seccions, June 2021, virtual
51. Context-Specific Genetic Regulation of Chromatin Architecture in Diabetes, American Diabetes Association 81st Scientific Sessions, June 2021, virtual

Seminars

1. Master of Science Thesis Seminar, East Carolina University, February 2001, Greenville, NC
2. Chemistry and Biology Seminar Series, Boston University, April 2008, Boston, MA

3. Doctoral Dissertation Defense, Boston University, April 2009, Boston, MA
4. FUSION Study Meeting, University of Michigan, November 2012, Ann Arbor, MI
5. Department of Computational Medicine & Bioinformatics, University of Michigan, January 2014, Ann Arbor, MI
6. Department of Human Genetics, University of Michigan, September 2014, Ann Arbor, MI
7. Bioinformatics Workshop, The University of Michigan, October 2014, Ann Arbor, MI
8. National Center for Integrative Biomedical Informatics (NCIBI) Tools & Technology talk, University of Michigan, April 2015, Ann Arbor, MI
9. National Center for RNA Biomedicine Research Symposium, University of Michigan, March 2016, Ann Arbor, MI
10. High Throughput Sequencing Special Interest Group, University of Michigan, June 2016, Ann Arbor, MI
11. Center for RNA Biomedicine seminar series, University of Michigan, December 2016, Ann Arbor, MI
12. Trans-Omics for Precision Medicine (TOPMed) Informatics Research Center (IRC) Analysis Workshop., University of Michigan, April 2017, Ann Arbor, MI
13. T32 Lecture Series: Multidisciplinary training program in basic diabetes research, University of Michigan, May 2017, Ann Arbor, MI
14. FUSION Study Meeting., University of Michigan, November 2017, Ann Arbor, MI
15. Single-cell ATAC-Seq: applications and technology options, University of Michigan Single-Cell Biology Winter Retreat, December 2018, Ann Arbor, MI
16. Girls Who Code club invited presentation, Girls Who Code club, April 2019, Ann Arbor, MI
17. Taubman Institute Tech Talk, University of Michigan, Taubman Institute, May 2019, Ann Arbor, MI
18. Skeletal muscle special interest group single nuclei molti-omic profiloing, University of Michigan, May 2020, zoom

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Peer-Reviewed Journals and Publications

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13. Goldfeder RL*, **Parker SCJ***, Ajay SS, Ozel Abaan H, Margulies EH: A bioinformatics approach for determining sample identity from different lanes of high-throughput sequencing data PLoS ONE 6(8): e23683, 2011. PM21858207

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15. **Parker SCJ**, Harlap A, Tullius TD: A computational method to search for DNA structural motifs in functional genomic elements Methods Mol. Biol. 759: 367-379, 2011. PM21863498

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Submitted

1. P. Orchard, N. Manickam, A. Varshney, V. Rai, J. Kaplan, C. Lalancette, K. Gallagher, C.F. Burant, **S.C.J. Parker**: Human and rat skeletal muscle single-nuclei multi-omic integrative analyses nominate causal cell types, regulatory elements, and SNPs for complex traits bioRxiv. (Submitted)
2. JS El-Sayed Moustafa*, AU Jackson*, SM Brotman*, L Guan*, S Villicaña, AL Roberts, A Zito, L Bonnycastle, MR Erdos, N Narisu, HM Stringham, R Welch, T Yan, T Lakka, **S Parker**, J Tuomilehto, FS Collins, P Pajukanta, M Boehnke, HA Koistinen, M Laakso, M Falchi, JT Bell, LJ Scott**, KL Mohlke**, KS Small**: ACE2 expression in adipose tissue is associated with COVID-19 cardio-metabolic risk factors and cell type composition medRxiv. (Submitted)

3. J Wessel+*, TD Majarian+, *(70 authors)*, **SCJ Parker**, *(36 authors)*, AK Manning*: Rare Non-coding Variation Identified by Large Scale Whole Genome Sequencing Reveals Unexplained Heritability of Type 2 Diabetes medRxiv. (Submitted)
4. S Shrestha, DC Saunders, JT Walker, J Camunas-Soler, X-Q Dai, R Haliyur, R Aramandla, G Poffenberger, N Prasad, R Bottino, R Stein, J-P Cartailler, **SCJ Parker**, PE MacDonald, SE Levy, AC Powers, M Brissova: Combinatorial transcription factor profiles predict mature and functional human islet α and β cells bioRxiv. (Submitted)
5. AP Tenney, SJ Garnai, M Kosicki, CD Robson, BJ Barry, Z Zhang, WM Chan, TE Collins, A Gelber, BM Pratt, A Varshney, M Lek, C Van Ryzin, FM Facio, TJ Lehky, C Zalewski, KA King, CC Brewer, A Thurm, J Snow, N Narisu, LL Bonnycastle, A Swift, PS Chines, JL Bell, S Mohan, MC Whitman, SE Staffieri, JE Elder, JL Demer, A Torres, E Rachid, C Al-Haddad, RM Boustany, DA Mackey, **SCJ Parker**, TA Hadlock, EW Jabs, FS Collins, BD Webb, LA Pennacchio, I Manoli, EC Engle: Non-coding variants altering a conserved cis-regulatory element cause dominant hereditary congenital facial palsy (Submitted)

Book Chapters

1. T. D. Tullius, S. C. J. Parker, and E. H. Margulies: Evolutionary constraint on DNA shape in the human genome. Evolutionary Biology – Concepts, Biodiversity, Macroevolution and Genome Evolution, P. Pontarotti, ed Springer Berlin Heidelberg, 2011. 243-256

Abstracts

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2. Varshney A, Haldeman J, Erdos MR, Hensley J, Hohmeier H, Stitzel ML, Newgard CB, Collins FS, Parker SCJ: Human, mouse and rat multi-tissue integrative chromatin state maps reveal conserved enhancer landscapes at diabetes and related trait GWAS loci, University of Michigan Human Genetics Retreat, Kalamazoo, MI, USA, 06/22/2015.
3. D'Oliveira Albanus R, Hensley J, Varshney A, Kiseleva A, Thomas P, Chines PS, Narisu N, Erdos MR, Kitzman J, Stitzel ML, Collins FS, Parker SCJ: Optimized ATAC-seq footprinting and haplotype-aware motif scanning in human islets samples reveals putative T2D GWAS functional SNPs, University of Michigan Human Genetics Retreat, Roscommon, MI, USA, 09/18/2015.
4. Varshney A, Scott LJ, Welch R, Erdos ME, Chines P, Narisu N, Albanus RDO, Orchard P, Wolford BN, Kursawe R, Vadlamudi S, Cannon ME, Didion J, Hensley J, Kirilusha A, NISC Comparative Sequencing Program, Bonnycastle LL, Taylor DL, Watanabe RM, Mohlke KL, Boehnke M, Collins FS, Parker SCJ: Integrative analysis of the genome, epigenome and transcriptome profiles in human pancreatic islets reveals novel type 2 diabetes regulatory signatures, Midwest Chromatin and Epigenetics Meeting, Van Andel Research Institute, Grand Rapids, MI, USA, 06/05/2016.
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8. D'Oliveira Albanus R, Hensley J, Parker SCJ: Predicting genome-wide transcription factor binding and residence time from ATAC-seq data, University of Michigan Human Genetics Retreat, Roscommon, MI, USA, 09/30/2016.
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