sininagpal.gt@gmail.com
sininagpal.wixsite.com/snagpal
LinkedIn
Google Scholar
ORCID

Sini Nagpal, Ph.D.

Academic Positions

Starting July, 2026 — **Assistant Professor**, *Indian Institute of Technology (IIT)*, Bombay, India
Koita Centre for Digital Health

2022–2026 — **Postdoctoral Fellow**, *Georgia Institute of Technology*, Atlanta, USA
Center for Integrative Genomics, School of Biological Sciences

Education

2019–2022 — **Ph.D. in Bioinformatics**, *Georgia Institute of Technology*, Atlanta, USA
Advisor: Dr. Greg Gibson
Thesis: Genetic and Environmental Factors Influencing the Genomic Prediction of Complex Traits
Minor: Statistics

2017–2018 — **M.S. in Bioinformatics**, *Georgia Institute of Technology*, Atlanta, USA

2011–2015 — **B.Tech. in Biotechnology**, *Thapar University*, Patiala, India
Thesis: Predictive Analysis of Biomedical and Genomic Data for Better Diagnosis

Honors and Awards

2026 Petit Scholar Mentor, Petit Scholar Undergraduate Research Program, Georgia Tech, Atlanta, USA.

2023 Fellowship, Postdoctoral Leadership, Innovation and Project Management, Georgia Tech, Atlanta, USA.

2022 Postdoctoral Semifinalist for the 2022 Charles J. Epstein Award for Excellence in Human Genetics Research, The American Society of Human Genetics, Los Angeles, USA.

2022 Reviewer's Choice Abstract (selected in top 10% of all poster abstracts), The American Society of Human Genetics, Los Angeles, USA.

2021–2022 Project ENGAGES Mentor, serving minority high schools, Georgia Tech, Atlanta, USA.

2019 Scholarship, Advanced Statistical Genetics Workshop, Summer Institute of Statistical Genetics at the University of Washington, Seattle, USA.

Publications

2025 Gettler K, **Nagpal S**, Washburn S, et al. Post-operative ileum transcriptomics implicates sex-biased mechanisms of Crohn's disease recurrence. *Gastroenterology*.

2025 **Nagpal S**, Hooshmand K, et al. A genome-wide association study implicates the glutamate signaling pathway in sarcoma susceptibility (Manuscript submitted).

2025 Graaf VD A, Warmerdam R, Auwerx C, Vosa U, Borges MC, Franke L, Kutalik Z, **eQTLGen Consortium**. MR-link-2: pleiotropy robust cis Mendelian randomization validated in three independent reference datasets of causality. *Nature Communications*.

2025 Freimann K, Brümmer A, Warmerdam R, Rupall TS, Hernández-Ledesma AL, Chiou J, Holzinger ER, Maranville JC, Nakic N, Ongen H, Stefanucci L, Turchin MC, **eQTLGen Consortium**, et al. Trans-eQTL mapping prioritises USP18 as a negative regulator of interferon response at a lupus risk locus. *Nature Communications*.

2024 **Nagpal S** and Gibson G. Dual exposure-by-polygenic score interactions highlight disparities across social groups in the proportion needed to benefit. MedrXiv (Manuscript submitted).

2024 Brown M, Dodd A, Shi F, Greenwood E, **Nagpal S**, et al. Concordant B and T Cell Heterogeneity Inferred from the Multiomic Landscape of Peripheral Blood Mononuclear Cells in a Crohn's Disease Cohort. *Journal of Crohn's and Colitis*.

2023 Astore C, Sharma S, **Nagpal S**, IBD Genetics Consortium, et al. The role of admixture in rare variant contributions to inflammatory bowel disease. *Genome Medicine*.

2022 Astore C, **Nagpal S**, Gibson G. Mendelian Randomization Indicates a Casual Role for Omega-3 Fatty Acids in Inflammatory Bowel Disease. *International Journal of Molecular Sciences*.

2022 **Nagpal S**, Tandon R, Gibson G. Canalization of the Polygenic risk of common diseases and traits in the UK Biobank. *Molecular Biology and Evolution*.

2021 Mo A*, **Nagpal S***, Gettler K, et al. Stratification of Risk of Progression to Colectomy in Ulcerative Colitis via Measured and Predicted Gene Expression. *American Journal of Human Genetics*. (*Equal contribution)

2021 Somenini H, **Nagpal S**, Venkatesqaran S, et al. Whole-Genome Sequencing of African Americans Implicates Differential Genetic Architecture in Inflammatory Bowel Disease. *American Journal of Human Genetics*.

2021 Stevens J, Kolachala V, Joshi G, **Nagpal S**, et al. Angiotensin-converting enzyme-2 (ACE2) expression in pediatric liver disease. *Journal of Pediatric Gastroenterology and Nutrition*.

2020 Pinese M, Lacaze P, Rath EM, Stone A, Brion MJ, Ameur A, **Nagpal S**, et al. The Medical Genome Reference Bank contains Whole Genome and Phenotype data of 2570 Healthy Elderly. *Nature Communications*.

2019 **Nagpal S***, Meng X*, Epstein MP, et al. TIGAR: An Improved Bayesian Tool for Transcriptomic Data Imputation Enhances Gene Mapping of Complex Traits. *American Journal of Human Genetics*. (*Equal contribution)

2018 **Nagpal S**, Gibson G, Marigorta UM. Pervasive Modulation of Obesity Risk by the Environment and Genomic Background. *Genes Basel*.

Scientific Conferences and Meetings

2025 **Nagpal S**, Gibson G, et al. Dual Polygenic Score-by-Exposure Interactions Highlight Disparities across Social Groups in the Proportion Needed to Benefit. *American Society of Human Genetics, Boston, USA.*

2025 Workshop, BIRS Novel Statistical Approaches for Studying Multi-omics Data. *Banff International Research Station, Banff, Canada.*

2024 Talk, **Nagpal S**, Gibson G. Dual exposure-by-polygenic score interactions highlight disparities across social groups in the proportion needed to benefit. *Southern California Symposium on Polygenic Risk Scores.*

2023 Poster, **Nagpal S**, Gibson G. Interpreting decanalization as the amplification of polygenic signals. *Program in Quantitative Genomics – Diversity in Genetics and Genomics, Harvard TH Chan School of Public Health, Harvard University, Boston, USA.*

2023 Poster, Courtney S, Sharma S, **Nagpal S**, et al. The role of admixture in rare variant contribution of inflammatory bowel disease. *American Society of Human Genetics, Washington DC, USA.*

2023 Participated in Integrative Genomics for Health Equity Workshop, *Georgia Tech, Atlanta, USA.*

2022 NIDDK Inflammatory Bowel Disease Genetics Consortium Meeting. *Bethesda, Washington DC, USA.*

2022 Poster, **Nagpal S**, Xu Z, Gibson G, et al. Predicted polygenic transcriptional risk score supports the inference of canalization of polygenic risk for common disease and traits in the UK Biobank. *The American Society of Human Genetics, Los Angeles, USA.*

2022–2023 Participated in Atlanta Workshop on single-cell omics (AWSOM), *Georgia Tech and Emory University, Atlanta, USA.*

2019 Poster, **Nagpal S**, Mo A, Hyams JS, et al. Tu1760 – Alterations in Expression Quantitative Trait Loci from Diagnosis to Recovery in Pediatric Ulcerative Colitis. *Gastroenterology - Digestive Diseases Week, San Diego, USA.*

2019 Poster, **Nagpal S**, Mo A, Hyams JS, et al. Alterations in Genetic Regulation of Rectal Gene Expression from Diagnosis to Recovery in Pediatric Ulcerative Colitis. *Annual Southeastern Pediatric Research Conference, Atlanta, USA.*

2018 Poster, Yang J, Meng X, Wingo A, Wingo T, Tsoi A, Patrick M, Epstein M, **Nagpal S**. Integrative functional genomics analysis of neuropathological features of Alzheimer's Disease reveals novel insights on GWAS loci. *American Society of Human Genetics, San Diego, USA.*

Invited Talks

2025 Polygenic and rare variant contributions to Sarcoma risk. *Center for Integrative Genomics, Georgia Tech, Atlanta, USA.*

2023 Polygenic risk score-by-exposure interactions are pervasive for cardiovascular diseases. *Emory Clinical Cardiovascular Research Conference, Emory University, Atlanta, USA.*

2023 Interpreting decanalization as the amplification of polygenic signals. *Center for Integrative Genomics, Georgia Tech, Atlanta, USA.*

2023 Integrative genomics for environmentally-informed precision medicine. *Department of Human Genetics, Emory University, Atlanta, USA.*

Research Experience

2018 **Research Intern**, *Emory University*, Atlanta, USA
Nonparametric Bayesian method for transcriptome-wide association studies (TWAS).
Advisor: Dr. Jingjing Yang

2017–2018 **Graduate Research Assistant**, *Georgia Institute of Technology*, Atlanta, USA
Effect of polygenic risk score-by-environment interactions on the risk of obesity.
Advisor: Dr. Greg Gibson; Postdoctoral Mentor: Dr. Urko M. Marigorta

2014 **Research Intern**, *CSIR-Institute of Genomics and Integrative Biology*, Delhi, India
Predictive analysis of biomedical and genomic data for better diagnosis.
Advisor: Dr. Tavpritesh Sethi

2013 **Research Intern**, *CSIR-Institute of Genomics and Integrative Biology*, Delhi, India
Protein expression and dynamic mitochondrial morphology during oxidative stress in Asthma.
Advisor: Dr. Anurag Agrawal

Teaching and Mentorship

Instructor

2024, 2025 Bruce Weir Summer Institute in Statistical Genetics (SISG), Atlanta, USA. Quantitative Genetics Module: Introduction to R and Python.

Mentor, Gibson Lab, Georgia Tech, Atlanta, USA

2026 Erin Yoon (BS Neuroscience): The impact of indirect genetic effects of parents and siblings on the polygenic risk of diseases.

2025–2026 Neha Suresh (MS Bioinformatics): Single cell transcriptional risk score for predicting Crohn's disease.

2024–2025 Mia Denning (MS Bioinformatics): Polygenic score by environmental interactions in All of US.

2023–2024 Suraksha Vinod (MS Bioinformatics): Influence of admixture on polygenic risk assessment.

2022–2023 Jared Collins (BS-MS Biology): Coherence vs Incoherence of disease risk using integrative genomics approach of integrating single cell with GWAS. Jared successfully defended his MS thesis on this project.

2022–2023 Kate Xie (MS Bioinformatics): Development of predicted polygenic transcriptional risk score at single cell level to predict disease progression for autoimmune diseases.

2022–2023 Emily Hang (BS-MS Bioinformatics): Studying the effect of genetics on the expression of facial emotions and homophily.

2022 Zheying Xu (MS Bioinformatics): Canalization of polygenic risk of common diseases and traits in the UK Biobank using predicted polygenic transcriptional risk scores.

2020 Kristine Lacek (MS Bioinformatics): Polygenic risk score-by-environment interactions for Inflammatory Bowel disease in the UK Biobank cohort.

2020 Vidisha Goyal (MS Biomedical Engineering): Spatial Transcriptomics.

Project ENGAGES Mentor, Georgia Tech, Atlanta, USA

2021–2022 Jeremiah Longino (High School Student, South Atlanta High School): Predictive health genomics on Inflammatory bowel disease. Jeremiah won an award in district level science fair for this project.

Professional Service

Invited Peer Review

Invited Journal Reviewer – Nature Communications, Scientific Reports, Human Genetics and Genomics Advances, Journal of Crohn's and Colitis, Human Genomics, European Journal of Medical Research, BMC Medical Genomics, BMC Genomic Data, BMJ Open.

Reviewed applications for the 2022 President's Undergraduate Research Awards (PURA) at Georgia Tech.

Professional Memberships

Lead Analyst, NIDDK Inflammatory Bowel Disease Genetics Consortium.

Analyst, eQTLGen Consortium.

Member, American Society of Human Genetics.

Industry Experience

2015–2016 **Data Analyst**, *Elucidata*, Delhi, India

Metabolomics data analysis: Built python packages for mass isotopomer distribution analyses and correcting metabolomic data for naturally occurring isotopes. Delivered the tools to healthcare and pharmaceutical companies.