

2025 Annual NHGRI Centers of Excellence in Genomic Science (CEGS) Meeting Agenda

October 7 – October 8, 2025

University Club at The University of Pittsburgh

123 University Place, Pittsburgh, PA 15213

Tuesday, October 7th (Day 1)

8:30 am	Registration & Continental Breakfast
9:15 am	Welcome
9:30 am	Center for Dynamic RNA Epitranscriptomes – Center PI: Chuan He, University of Chicago <ul style="list-style-type: none">• Tao Pan – New sequencing technologies and applications for RNA modification and RNA targetome• Cheng-Wei Ju – Tracking microbiome-derived cell-free RNA modifications detects colorectal cancer• Liudan Jiang – Intrinsically disordered regions restrain genomic targeting of RNA demethylases• Peng Jin – Mutli-region m6A epitranscriptome profiling of the human brain• Mengjie Chen – Enhancing MeRIP-seq data to single-base resolution with deep learning (Virtual)
10:15 am	Genetic & Social Determinants of Health: Center for Admixture Science and Technology – Center PI: Lucila Ohno Machado, Yale University <ul style="list-style-type: none">• Lucila Ohno-Machado — Introduction to the Center for Admixture Science and Technology• Wilfredo González-Rivera — Admixture mapping identifies novel complex trait associations with local ancestry in the All of Us Research Program• Rui Zhu — Advancing Human Population Genomics with DNA Foundation Models• Haris Smajlovic — Secure Federated Association Studies and Risk Modeling• Hoon Cho — CAST Outreach and Education
11:00 am	Coffee Break
11:30 am	Center for Genomic Information Encoded by RNA Nucleotide Modifications – Center PI - Samie Jaffrey, Weill Medical College of Cornell University <ul style="list-style-type: none">• Samie Jaffrey – Introduction• Shuohui (Shawn) Liu – Discovery of unusual nucleotides in mRNA tails• Ningxi Wei – Isodecoder-Resolved Sequencing of Human tRNAs via Next-Generation Top-Down Mass Spectrometry• Kate Meyer – Outreach (Virtual)

12:15 pm	Lunch
1:15 pm	Flash Talk Session #1 <ul style="list-style-type: none"> • Center for Dynamic RNA Epitranscriptomes Ruitu Lyu – cfDNA 5mC in Cancer: Current and Emerging Detection Methods and Clinical Applications • Center for Genomic Information Encoded by RNA Nucleotide Modifications Griffin Welfer – Functional linkages between the EMT-associated ribosome biogenesis program and the mesenchymal phenotype Enakshi Sivasudhan – m6A-dependent control of gene expression during microglial activation • Center for the Multiplexed Assessment of Phenotype Arielle Hancko - Sensor Engineering by Sequencing: SENSE Kirby Fawcett - Mapping Missense Variation in PCSK9 • Center for Live Cell Genomics Christopher Nguyen - Streamlined Assessment of Relevant Functional Phenotypes in Human Stem Cell Derived Cortical Organoids Hunter Schweiger – Title TBD
1:45 pm	Center for the Multiplexed Assessment of Phenotype – Center PI: Douglas Fowler, University of Washington <ul style="list-style-type: none"> • Doug Fowler - Introduction • Jessica Simon - Biochemical variant profiling at a massive scale in human cells with LABEL-seq • Joe Min - Engineering Enzyme Variants using Deep Learning-based Protein Design • Nasa Sinnott-Armstrong - Genetic variants affect diurnal glucose levels throughout the day • Daniel Tabet - The functional landscape of coding variation in the familial hypercholesterolemia gene LDLR • Lea Starita - CEGS to bedside, implementing advanced technology in the clinic
2:30 pm	Coffee Break
2:45 pm	Brainstorming Session: Hot-Take Session Questions
4:00 pm	Poster Session #1
5:15 pm	Adjourn
	Dinner on Your Own Recommended Location: The Porch

Wednesday, October 8th (Day 2)

8:30 am **Continental Breakfast**

9:00 am **Center for Genome Editing and Recording – Center PI: Jonathan Weissman, Whitehead Institute**

- Jonathan Weissman – CGER Intro
- Jonathan Weissman – High-resolution spatial mapping of cell state and lineage dynamics *in vivo* with PEtracer
- Britt Adamson – Scaling genome editing to understand genome stability (Virtual)
- Alex Sousa - *In vivo* prime editing rescues alternating hemiplegia of childhood in mice (VIRTUAL)
- Maxine Wang – CGER Outreach

9:45 am **The Duke FUNCTION Center: Pioneering the Comprehensive Identification of Combinatorial Noncoding Causes of Disease – Center PI: Tim Reddy, Duke University**

- Tim Reddy, Raluca Gordan, Greg Crawford & Shannon Clark – Technologies and applications for combinatorial control of regulatory elements.
- Tim Reddy – Towards highly multigenic control of gene expression

10:30 am **Coffee Break**

11:00 am **Center for Live Cell Genomics – Center PI: David Haussler, University of California Santa Cruz**

- David Haussler – Introduction (Virtual)
- Ravipa Losakul – Engineering/analysis chip
- Yohei Rosen – Vascularized organoids
- Mojtaba Zeraatkar – Engineering/organoid chamber
- Jing Zhu – Universal embedding, using AI to interpret single cell data set (Virtual)
- Mohammed Mostajo-Radji – Outreach

11:45 am **Flash Talk Session #2**

- **Center for Integrated Cellular Analysis**
Zihan Xu – Uncovering Convergent Cell State Dynamics Across Divergent Genetic Perturbations Through Single-Cell High-Content CRISPR Screening
Sourav Sarkar – Pan-human Azimuth Neural Network for organism scale annotation
- **Center for Synthetic Regulatory Genomics**
Anna Berenson: Jurassic Squawk: from re-wilding domestic chickens to de-extincting lost birds
Jordan Welker: Saving Black-footed Ferrets from Extinction with Genome Writing
- **Center for Genome Editing and Recording**
Corri Sept – Nanoscale structure of transcription factor binding in regulatory elements

	George Lampe – Leveraging CRISPR-associated transposases for targeted gene insertion in mammalian cells
12:15 pm	Lunch
1:15 pm	Center for Integrated Cellular Analysis – Center PI: Rahul Satija, New York Genome Center <ul style="list-style-type: none">• Rahul Satija – Center for Integrated Cellular Analysis introduction• Longda Jiang – Sample-level embeddings reveal disease trajectories in single-cell analysis• Alex Bradu – Pairing genome-wide screening and deep molecular profiling with VIPerturb-seq• Dennis Yuan – Large scale single-cell phylogenetic mapping of clonal evolution in aging human tissues• Ivan Raimondi – Multiomic single-cell profiling of DNA-binding factors
2:00 pm	Coffee Break
2:15 pm	Hot Take Summaries
3:15 pm	Poster Session # 2
4:30 pm	Center for Synthetic Regulatory Genomics – Center PI: Jef Boeke, New York University Langone Health <ul style="list-style-type: none">• Jef Boeke: The Dark Matter Project and Build-A-Genome• Matthew Maurano: TBD• Jack Atwater: Building and testing large mammalian synthetic loci in high throughput• Noor Chalhoub: Targeted Delivery of Type 2 Diabetes GWAS Variants to Human iPSCs• Brianna Berrios: Synthetic regulatory landscape of pax6 reveals strict requirements for correct genetic output• Antonio Vela Gartner: Assemblatron OLIGARCHY: Towards High-Throughput Big DNA• Weimin Zhang: Alternative splicing of human genes in mice
5:15 pm	Meeting Adjourn
5:30 pm	<i>Shuttle from University Club to Phipps Conservatory</i>
6:00 pm	Group Dinner – Phipps Conservatory
8:00 pm	<i>Shuttle from Phipps Conservatory to Hilton Garden Inn</i>