

# 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 7<sup>th</sup> (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**

- 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**

- 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**

- 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**

- **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**

- 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 8<sup>th</sup> (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, Ruluca 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**

- 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**

- 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**

*Shuttle from University Club to Phipps Conservatory*

**6:00 pm**

**Group Dinner – Phipps Conservatory**

**8:00 pm**

*Shuttle from Phipps Conservatory to Hilton Garden Inn*