

THE 2026 VIRTUAL INTERNATIONAL STATISTICAL GENETICS (ISG) WORKSHOP FOR HUMAN COMPLEX TRAITS

ADVANCE NOTICE

JUNE 1 – JUNE 11, 2026

We are pleased to announce the 2026 International Statistical Genetics (ISG) Workshop, to be held June 1–11, 2026. This year's course will be virtual and will integrate material from both the Latent Genetics and Molecular Genetics traditions, emphasizing their synergy in understanding human complex traits.

Overview

Since 1987, the ISG Workshop has trained more than 3,000 scientists worldwide and remains the premier gateway into behavioral and statistical genetics. The 2026 Virtual Workshop continues this legacy—bringing state-of-the-art methods in both latent and molecular genetics to participants around the world. By pairing world-class instruction with interactive hands-on training and open online resources, the ISG Workshop continues to advance the science of human complex traits for a new generation of researchers.

Why Virtual in 2026?

Following the tremendous success of our previous online workshops in 2021 and 2022, we have elected to hold the virtual course on a regular basis. This is our first one since 2022. Our virtual courses have received exceptionally high evaluations for organization, clarity, and hands-on engagement, and we are excited to continue this successful format. The virtual format has proven uniquely valuable for several reasons:

- **Accessibility and reach:** It allows participation from a much broader and more diverse international community without the constraints of travel or cost.
- **Educational effectiveness:** The flipped-classroom model—pre-recorded lectures followed by live discussion and small-group practicals—enhances learning and engagement.
- **Persistent educational online resource:** Recorded lectures and materials expand our public online library of ISG content, freely available for self-education worldwide.
- **Flexibility:** Freed from physical venue limitations, we can accommodate more students and tutors, provide additional sessions across time zones, and offer a more individualized experience.

Structure and Schedule

The 2026 workshop will follow a flipped-classroom structure:

- Students view ~2 hours of pre-recorded lectures per day, then attend ~3 hours of live, interactive sessions and practicals.
- Lectures will be available one week before the start of the course.
- The workshop will run Monday – Thursday (U.S. time) across two weeks: June 1–4 and June 8–11.
- Two time-zone tracks will be offered: Track A for Europe/Africa/Americas, and Track B for America/Asia/Australia/Oceania.

2026 Curriculum, Preliminary Schedule, and Faculty Leads

Day 1 (June 1): Background and Foundations

Lead: Loïc Yengo

Topics: biometrical modeling; population genetics; data sources; ethics and historical context; simulations and PCA.

Day 2 (June 2): Working with Data

Lead: Elizabeth Prom-Wormley

Topics: assumptions, QC, imputation, PLINK and R basics, phenotype distributions, and transformations.

Day 3 (June 3): Modeling Genetic and Environmental Components

Leads: Hermine Maes and Sarah Medland

Topics: heritability, variance components, matrix approaches, IBD vs IBS, family and twin modeling.

Day 4 (June 4): GWAS and Meta-Analysis

Lead: Abdel Abdellaoui

Topics: PLINK, SAIGE, METAL, within-family GWAS, rGE and assortative mating, RAPs, interpretation.

Day 5 (June 8): Prediction

Lead: Jian Zeng

Topics: prediction theory, ROC analysis, polygenic risk scores, SBayesRC, G×E applications.

Day 6 (June 9): Multivariate Concepts

Lead: Andrew Grotzinger

Topics: genetic correlations, LD-score regression, Genomic SEM.

Day 7 (June 10): Causation

Lead: David Evans

Topics: causal inference, Mendelian randomization (univariate and multivariate), longitudinal and family-based designs, genetic confounding.

Day 8 (June 11): Biological Interpretation

Lead: Benjamin Neale

Topics: rare variants, fine mapping, TWAS, omics integration, cross-ancestry and AI-based prediction.

Additional faculty and tutors include Michel Nivard, Christopher Beam, Scott Vrieze, Patrick Turley, Neil Davies, Brad Verhulst, Meike Bartels, and many others (TBA).

Software, Computing, and Online Resources

Students will gain hands-on experience using R, OpenMx, PLINK, SAIGE, METAL, LD Score Regression, GenomicSEM, and other current analytic tools. A custom cloud-based computing environment will be provided; participants need only a personal computer and reliable internet connection.

To help prepare for the workshop, students are encouraged to explore materials from previous virtual courses, including recorded lectures and practical tutorials available at <https://www.colorado.edu/ibg/isgw-online>. These persistently available resources provide an excellent opportunity to review key concepts and gain familiarity with the analytic approaches covered in this year's program.

Registration

Registration opens January 31, 2026. A second announcement in mid-January will provide details about registration links, schedule, and course materials. The registration fee will be \$300 USD, payable online by credit card at the time of registration. Cancellations after April 15, 2026 will be non-refundable. Financial assistance is available for participants who can demonstrate financial hardship in paying the registration fee. For details, please contact the workshop coordinator at ibgworkshop@colorado.edu.

Information will also be updated at <https://www.colorado.edu/ibg/workshop-2026> or available from the workshop coordinator ibgworkshop@colorado.edu.

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For our in-person workshops, we also gratefully acknowledge the generous support of Regeneron Pharmaceuticals, which funds the International Scholarship and Cultural Exchange Program (ISCEP)—an all-expense-paid scholarship that enables three international students from developing countries to attend in-person workshops.

Leadership and Organization

The 2026 ISG Workshop is organized by the Institute for Behavioral Genetics (IBG) at the University of Colorado Boulder.

Principal Investigator

- Matthew Keller (Director, Institute for Behavioral Genetics, University of Colorado Boulder)

Academic Directors of the Virtual Workshop

- Sarah Medland (QIMR Berghofer Medical Research Institute)
- Abdel Abdellaoui (Amsterdam UMC, Netherlands)

Academic Directors for in-person years

- Benjamin Neale (Broad Institute & Massachusetts General Hospital)
- David Evans (University of Queensland)
- Hermine Maes (Virginia Institute for Psychiatric and Behavioral Genetics)
- Michel Nivard (University of Bristol)

Academic Directors of Online Education

- Madhurbain Singh (King's College London)
- Dinka Smajlagic (University of Colorado Boulder)

IT Director

- Jeffrey Lessem (Institute for Behavioral Genetics, University of Colorado Boulder)

Workshop Coordinator

- Karen McVay (ibgworkshop@colorado.edu)