

### Newsletter – July 2025

Letter from the President Hae Kyung Im

Dear IGES Members,



I hope this message finds you well and that your spirits remain high despite the current uncertainties in scientific funding.

Now more than ever, it is essential that we come together—supporting each other and strategizing for a stronger future in genetic epidemiology. The 34th Annual IGES Meeting will take place from August 31 to September 2,

2025, in the vibrant city of Cologne, Germany. The meeting will begin with a pre-conference education workshop on August 31, followed by the main meeting.

The Program Committee has worked tirelessly to prepare an outstanding program featuring keynote speakers and sessions that highlight the cutting-edge research of our members. This year's distinguished keynote speakers include Claudia Langenberg, Michael Wu, Eleftheria Zeggini, and Xiang Zhou—learn more about their impressive contributions to the field <u>here</u>.

Complementing our scientific program, the education committee has organized a workshop titled "Navigating Biobank Data for Genetic Epidemiology Research." This session will provide insights into biobank design, novel analysis methods, and collaborative approaches across biobanks. The workshop features expert instructors and is available for \$75 USD – more details may be found <u>here</u>.

The conference will take place at the Pullman Hotel Cologne, centrally located within walking distance of major attractions such as the stunning Cologne Cathedral, the scenic River Rhine, and the historic Old Town. We encourage you to take advantage of our exclusive hotel rate:

- €169 + tax per night for single occupancy (includes breakfast)
- €197 + tax per night for double occupancy (includes breakfast)

By staying at the hotel, you'll help the society avoid costs from unsold rooms while enjoying the convenience of being close to the meeting. Find more information <u>here</u>.

Register now using this <u>link</u>, and don't miss the early registration discount, which expires on August 9, 2025.

Following a successful tradition initiated last year by Liz Blue, we are pleased to offer IGESthemed t-shirts for purchase. Get your classic IGES merchandise <u>here</u> or select from the IGES Cologne 2025 collection <u>here</u>.

This meeting has been made possible by the dedicated efforts of our organizing team. This year's event was led by:

- Organizing Committee: Elizabeth Gillanders (Past President), Michael Nothnagel (Local Representative)
- Program Committee: Xiaofeng Zhu and Debashree Ray (Co-Chairs)
- Education Committee: Pingzhao Hu and Tae-Hwi Schwantes-An (Leaders)
- Behind the scenes: Special thanks to Vanessa Olmo for her invaluable support.

Thanks also to our Fundraising Committee (Lisa Strug and David Conti), who have secured crucial sponsorships from key companies and institutions. As the society continues to grow, your help remains essential—please consider supporting us by identifying additional sponsors. Learn more <u>here</u>.

Remember, IGES is truly a member-driven society. We are grateful for the countless contributions of our members and volunteers, and we invite you to get involved. We are currently seeking candidates for the IGES Board of Directors and various committees—please consider nominating yourself or a deserving colleague. For more information, email iges@geneticepi.org.

I look forward to welcoming you all in Cologne—and to a vibrant, inspiring meeting full of collaboration and discovery.

Warm regards, Hae Kyung Im 2025 IGES President

#### IGES 2025 in Cologne, Germany

#### Early-bird registration for IGES 2025 ends August 9, 2025

Invited speakers & titles:



Claudia Langenberg: Multiomic insights into diverse human diseases

Eleftheria Zeggini: Translational Genomics of Complex Disease





**Zhou Xiang:** Advances in Statistical Fine-Mapping of Putative Causal Variants and Genes from GWAS

Michael Wu: Critical Challenges in Multi-Omic Data Analysis



#### IGES 2025 Program features:

- Platform presentations selected from submitted abstracts
- Poster sessions allowing intensive 1 on 1 discussions with presenters
- Finalist presentations for Williams Award (students) and Neel Award (postdocs)
- President's address on big issues in genetic epidemiology
- Social and mentoring events for young investigators:

The IGES Young Investigators' Social Event will take place at Peters Brauhaus, Mühlengasse 1, 50667 Köln (Cologne), on Tueday September 2nd, from 18:30 onwards. Join us for an enjoyable evening of networking, great food, and traditional Kölsch (pale ale) in a relaxed atmosphere. As space is limited, please add your name to the sign-in sheet when picking up your badge on the first day of the conference—we'd love to see you there!

- Best paper from Genetic Epidemiology 2024 award
- IGES Business Meeting awards presentations, planning the future of IGES

Detailed info about travel to Cologne as well a suggestions for things to do:

https://statgen.uni-koeln.de/iges2025/

#### **IGES Education Workshop**

This year's half-day interactive workshop :

#### Navigating Biobank Data: Advanced Strategies for Genetic Epidemiology Research

Sunday August 31, 2025 | 1:00 – 6:00 PM | Pullma Hotel, Cologne, Germany

#### Abbreviated Agenda

Session 1: Biobank Design and Data Access – From Data to Insight

Speakers: Dr. Natalia Rivera, Karolinska Institutet and Dr. Callie Zaborenko, Indiana University School of Medicine

#### Session 2: Methodological Advances for Biobank-based Genetic Epidemiology

Speakers: Dr. Reedik Mägi, University of Tartu and Dr. Krista Fischer, University of Tartu

#### Session 3: Scalable Computational Approaches for Cross-Biobank Analysis

**Speakers**: **Dr. Xihao Li**, University of North Carolina at Chapel Hill and **Dr. Jacob Williams**, National Cancer Institute

#### Session 4: Practical Tutorial – A Walkthrough of Cross-Biobank Analysis

**Speakers: Dr. Jacob Williams**, National Cancer Institute and **Dr. Xihao Li**, University of North Carolina at Chapel Hill

Panel Discussion + Q&A: Future Directions in Biobank-Based Research

### Support IGES and look great while doing it!

Place your order for the 2025 Cologne limited edition customized IGES shirt and wear it at this year's meeting!

There are various styles (unisex and women's cut), colors and sizes to choose from.

International Genetic Epidemiology Society | Bonfire







www.geneticepi.org

#### Save The Date: Monday, July 28, 2025

#### 11 am (EST), 8 am (PST) and 5 pm (CET)

Dear IGES members,

IGES hosts regular virtual journal clubs throughout the year to increase IGES members' familiarity with emerging and classic literature in genetic epidemiology and to foster discussion and networking among members. This month's journal club highlights a recent large-scale UK Biobank analysis that shows that whole-exome sequencing plus imputation matches whole-genome sequencing in discovery power but is more cost-effective and scalable. Make plans to attend our next meeting!

## Title: "Yield of genetic association signals from genomes, exomes and imputation in the UK Biobank" (*Nat Genet*. 2024; 56:2345–2351)

#### Article: <u>https://www.nature.com/articles/s41588-024-01930-4</u> PMID: **39322778** Abstract (adapted from the original abstract):

Whole-genome sequencing (WGS), whole-exome sequencing (WES), and array genotyping with imputation (IMP) are widely used to study genetic variation and its links to complex traits. However, their relative yield in large-scale studies has not been systematically compared. Using data from 149,195 UK Biobank participants across 100 complex traits, we compared the effectiveness of these strategies. We found that WES combined with imputation (WES + IMP) produced the highest association yield. While WGS assays five times more variants than WES + IMP, the number of detected signals differed by only about 1% in both single-variant and gene-based analyses. Given its efficiency and lower cost, we extended WES + IMP to 468,169 individuals and observed a fourfold increase in association signals with a threefold increase in sample size. These findings suggest that prioritizing WES + IMP with larger sample sizes is more effective for gene discovery than current short-read WGS approaches. **Registration link:** 

https://msm-edu.zoom.us/meeting/register/qy97VCFWSfunHZriY6 DQ

#### Bio:

Yu Shi holds a master's degree in Biostatistics from Yale University, where she conducted research in statistical genetics, focusing on transethnic genetic correlation analysis using GWAS summary statistics. In 2022, she began her PhD in Biostatistics at the University of Toronto. Her doctoral research focuses on developing and applying advanced machine learning and statistical methods to address challenges related to out-of-distribution data, particularly in genomic contexts such as cross-biobank analysis. Under the supervision of Dr. Pingzhao Hu and Dr. Wei Xu, she is currently developing genomic foundation models using individual-level genomic data for disease risk prediction.

Do you have any suggestions for interesting topics, papers, or presenters for further talks? Or would you like to support us in organizing the Journal Club? Please contact Dr. Silke Szymczak (silke.szymczak@uni-luebeck.de)

On behalf of the organizing team of the IGES Journal Club, Silke Szymczak Heejong Sung Cheryl Cropp

# Genetic Epidemiology

**Dear IGES members,** as the official journal of our society, Genetic Epidemiology invites you to submit your work in the fields of statistical, epidemiological, and population genetics.

Journal Metrics: Impact Factor 3.8; 147,001 full text views; Acceptance rate 13%; Submission to first decision 19 days

#### Special Issue: Advances in Statistical Genetic Methods in the post-GWAS era

We would be most appreciative if you would agree to submit invited manuscripts for this issue, which we anticipate will be published in early 2026. Any of the following topics are of interest:

- Robust statistical approaches for genetic/omics/EHR/Biobank data
- Challenges in utilizing EHR data
- Omics computational pipeline
- The strategies for meta-analyses/mega-analyses for GWAS studies
- Genetic Analyses of Secondary/Intermediate Phenotypes
- Statistical and computational approaches for biobank data
- Approaches to analyzing missing data in Biobanks/EHR
- Risk prediction models
- Approaches to combine summary data across multiple biobanks
- Gene-environment interactions

The deadline for submitting manuscripts for this issue is November 1, 2025.

All manuscripts will be peer-reviewed in accordance with the journal's policy. We will make the special issue freely available online for a limited time and promote it through our social media channels. Thanks for considering our invitation to publish your manuscript in Genetic Epidemiology as part of the special issue. I am happy to answer any questions you may have.

I am also looking for a guest editor who can lead a special issue <u>on Genetic Epidemiology of</u> <u>Cardiovascular Epidemiology</u>. Please contact me if you wish to guest-edit the special issue.

This is your journal: make it reflect your work by submitting your papers to Genetic Epidemiology!

Thanks, and I look forward to your active participation in the journal.

Sanjay Shete, Editor-in-Chief sshete@mdanderson.org



This July 2025: IGES Pre-Meeting Newsletter was edited, proofread, and formatted by Andrew Paterson