



INTERNATIONAL GENETIC EPIDEMIOLOGY SOCIETY

Newsletter – December 2022

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Letter from the President David Balding



My year as IGES President is coming to an end, I look forward to handing over to John Witte at the end of the year, and the new president-elect will be confirmed soon (see election information in this newsletter, pg 7-17). I will continue to be busy next year, liaising with the Scientific Program Committee (Chair: Denise Daley) and Local Organising Committee led by Todd Edwards for IGES2023 in Nashville. I hope we can do as well as the very successful IGES2022 meeting in Paris.

It was wonderful that so many of us could gather in a beautiful hotel in a lively part of Paris for the Educational Workshop on Biobanks, the Symposium in honour of Françoise Clerget-Darpoux and then two days of talks, posters, meetings and discussions over good food and drinks. Congratulations again to the winners of the Neel and Williams awards and the poster prizes (see P 18-19). Congratulations to **Celia Greenwood** on the **IGES Leadership Award**, which recognises her many contributions including as IGES Past-President during a turbulent 2020 when she led the organisation of three conferences: those in Hong Kong and Seoul had to be abandoned, and a successful virtual meeting went ahead. She has also contributed to the Genetic Epidemiology Foundations online course (www.coursera.org/learn/genetic-epidemiology) and secured funding for an Education workshop which was finally held in Paris.

We had a total of 343 people attending some part of the meeting, with 266 in-person attendees for the main meeting (200 for the Symposium and 91 for the Workshop) and 52 online-only attendees of the Symposium (30 for the main meeting and 22 for the Workshop). Attendees came from Europe (48%) and North America (44%), reflecting the meeting location and our

membership (70% North America, 23% Europe). Financial details are not yet finalised but we are heading for a small deficit, mainly due to the additional costs of our first hybrid meeting.

Successful conferences result from a huge amount of effort, and the wonderful outcome is due to many people, too many to list them all here. Firstly, many thanks to those who worked hard on their talks and posters to help us achieve a high standard of cutting-edge science. Thomas Winkler led the Scientific Program Committee, Sarah Buxbaum and Wei Xu co-chaired the Education Committee, Emanuelle Génin and Anne-Louise Leutenegger co-ordinated the local organising team, the Young Investigators Committee (chair: Chloé Sarnowski) judged the poster prizes, the Publications Committee (chair: John Witte) selected the Best Paper award winner and Vanessa Olmo led a small professional team. A special thanks to Past-President Heike Bickeböller, who ably co-ordinated all of the above and inputs from the IGES Board. Heike is now finishing her 3-year journey of President-elect, President and Past-president, having led the Society with great commitment and skill.

At the end of the conference, the business meeting (our annual general meeting) was well attended and participants made many suggestions that the Board will consider for carrying forward. A majority felt that the online attendance fees (60% of in-person fee) was too high, some wanted automatic membership renewal and lifetime membership for retirees, student members on IGES committees and a YouTube channel for high-profile IGES presentations including Presidents' conference talks.

Please keep the suggestions coming to me or other Board members, including suggestions for innovations at IGES2023. Please also vote for Board members and President-Elect, renew your membership as soon as possible, and get in touch to express interest in joining IGES committees,

David Balding
IGES President 2022

Treasurer's Corner
Julia Bailey

Treasurer Report

The society is currently in good financial standing. Please remember to renew your membership to keep us that way. Our meeting in Paris was quite successful and I hope everyone goes to Nashville.

Julia Bailey PhD
Treasurer

Editor's Corner, Genetic Epidemiology
Sanjay Shete

Dear IGES members, as an official journal for our society, Genetic Epidemiology invites you to submit your work in the fields of statistical, epidemiological and population genetics. Genetic Epidemiology is interested in both the methodological and applied papers. Examples include applied genetic epidemiology papers (e.g. meta-analyses of GWAS, Secondary analyses of GWAS data), gene and environment interactions, risk prediction models, DNA methylation and RNA seq data analysis. Other novel work is welcome!

- The latest issue, December 2022 can be found here:

<https://onlinelibrary.wiley.com/toc/10982272/2022/46/8>

- Top-cited Genetic Epidemiology articles can be found here:

[https://onlinelibrary.wiley.com/doi/toc/10.1002/\(ISSN\)1098-2272.GEPI-top-cited](https://onlinelibrary.wiley.com/doi/toc/10.1002/(ISSN)1098-2272.GEPI-top-cited)

Benefits of Publishing in Genetic Epidemiology: There is no publishing cost for authors (e.g. page charges, black-white figures). In addition, every year, journal selects few papers for "open access" (unrestricted online access) publishing at no cost to the authors.

Please register on Wiley online library to **receive email alerts for new content** and saved searches. The website for registration is <http://onlinelibrary.wiley.com/user-registration>

AUTHOR SERVICES: Wiley has an updated list of services it offers our authors. For more information, please visit <http://authorservices.wiley.com>

We offer Kudos (<https://www.growkudos.com/>), a social media service that provides authors with a free set of tools to explain and share their published work for greater usage and impact. Authors also receive access to a publication dashboard where they can view downloads, citations, and altmetrics for their articles.

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

Coursera Genetic Epidemiology Foundations Course

The IGES Educational Committee has conceived and designed an online course called Genetic Epidemiology Foundations that is available at this URL:

coursera.org/learn/genetic-epidemiology

The course can be accessed for free by you and your trainees.

This course consists of 6 modules designed to provide the foundation necessary to conduct statistical analysis of genetic data and was made possible through the support of the University of Colorado and Vanderbilt University.

Stephanie Santorico, Ph.D., who along with Todd Edwards is our committee's past Co-chair, makes the introduction to the modules:

1. Nancy Cox, Ph.D.: What is Genetic Epidemiology? Historical Perspective and Introduction
2. Bruce Weir, Ph.D.: Introduction to Population Genetics: Models and Assumptions
3. Todd Edwards, Ph.D.: Population Structure and Genetic Association Studies
4. Goncalo Abecasis, D.Phil.: Basic Quality Control in Genetic Data: Data Structure
5. Celia Greenwood, Ph.D.: Population-Based Association Studies
6. Joan Bailey-Wilson, Ph.D.: Family-Based Designs

Contact us if you have any questions:

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IGES 2023 Membership Drive

Dear IGES members,

Don't forget to renew your membership for 2023! Registration/renewal is now open. The early-bird membership fee is available until January 31, 2023. Use the discount code **2023earlybird**.

Please observe the fact that membership registration and annual meeting registration have been separate since 2014. Therefore you are NOT automatically registered as an IGES member just with meeting attendance. A separate registration for IGES Society membership is necessary:

<https://www.geneticepi.org>

Rates for 2023 IGES membership:

- Regular member **US\$130**, if paid by January 31, 2023 (early-bird)
- Regular member **US\$155** if paid on or after February 1, 2023
- Student and Post-Doctoral* member with online access to Journal **US\$68, without** online access to Journal **US\$25**, rate continues all year but please aim to pay by January 31, 2023
- Low- or lower-middle- income country* or retired member with online access to Journal **US\$68**; without online access to Journal **US\$25**.

* For eligibility see IGES website

Benefits of IGES membership:

- Regular members get complimentary on-line access to **Genetic Epidemiology** (the official IGES journal)
- Post announcements and job adverts on the IGES website at **no cost**
- Attend annual IGES scientific meetings at **reduced cost**
- Interact with **scientific peers** worldwide
- Learn about the **latest methodological developments, software, and research findings** in genetic epidemiology
- Help the society **promote** the field of **genetic epidemiology** internationally
- Continuous regular membership of IGES for 5 years or more makes you eligible for the title of "**Fellow Member of IGES**". See <https://www.geneticepi.org/iges-fellow-members>

Your IGES dues help to support...

- **Travel expenses** to the annual IGES meeting for worthy students in financial need
- **Continuing education** and outreach to the scientific community about the discipline, analytical methods, and software used in genetic epidemiology through workshops and classes
- Subsidies for **student subscriptions** to the journal *Genetic Epidemiology*

2023 IGES Elections
Candidate for IGES President – Elizabeth Gillanders



Dr. Gillanders received her Ph.D. in Genetic Epidemiology, from the Johns Hopkins Bloomberg School of Public Health. Her thesis advisor was Joan Bailey- Wilson. She began her career within the intramural research program at the National Human Genome Research Institute (NHGRI), where she headed its Genetic Epidemiology Unit within the Cancer Genetics Branch. Her applied research at NHGRI focused primarily on the genetic epidemiology of cancer susceptibility, with an emphasis on melanoma, prostate cancer, and breast cancer. She also investigated novel methods which could improve upon the power of conventional methods of gene discovery for complex traits in general.

Currently Dr Gillanders works in extramural funding at the National Institutes of Health. She is Chief of the Genomic Epidemiology Branch, within the Division of Cancer Control and Population Sciences, at the National Cancer Institute (NCI). The branch supports a sizeable portfolio of cancer genetic epidemiology grants and as branch chief, Dr. Gillanders has overseen various activities aimed at identifying and addressing challenges in the genetic epidemiology of cancer and in particular the development of innovative approaches for studying the genetic architecture of cancer and applying next-generation sequencing to cancer epidemiology studies. For example, Dr. Gillanders helped design and coordinate a project to encourage innovation in breast cancer epidemiology through the prize competition, [Up For A Challenge \(U4C\)](#). Most recently, Dr. Gillanders has been involved with the trans-NCI Implementation Team for the Cancer Moonshot, Blue Ribbon Panel Recommendation A, “[Establish a Network for Direct Patient Engagement](#).” As part of this work, she is supporting innovative approaches to fill research gaps in the genomic characterization of cancer through the [Participant Engagement and Cancer Genome Sequencing \(PE-CGS\) Network](#).

Dr. Gillanders is very interested in education and teaching in general. She teaches an undergraduate introduction to epidemiology course at McDaniel College. She is also a longtime member and past chair of the IGES Education Committee, where she worked to develop/grow the education sessions held at the IGES annual meeting as well as at outside meetings. She also helped envision and develop the IGES Coursera course of Genetic Epidemiology Foundations <https://www.coursera.org/learn/genetic-epidemiology>

Past member of the IGES Board of Directors.

Five selected publications:

[Up For A Challenge \(U4C\): Stimulating innovation in breast cancer genetic epidemiology.](#)

Mechanic LE, Lindström S, Daily KM, Sieberts SK, Amos CI, Chen HS, Cox NJ, Dathe M, Feuer EJ, Guertin MJ, Hoffman J, Liu Y, Moore JH, Myers CL, Ritchie MD, Schildkraut J, Schumacher F, Witte JS, Wang W, Williams SM; U4C Challenge Participants; U4C Challenge Data Contributors, **Gillanders EM**. PLoS Genet. 2017 Sep 28;13(9):e1006945. doi: 10.1371/journal.pgen.1006945.

[Genetic simulation tools for post-genome wide association studies of complex diseases.](#)

Chen HS, Hutter CM, Mechanic LE, Amos CI, Bafna V, Hauser ER, Hernandez RD, Li C, Liberles DA, McAllister K, Moore JH, Paltoo DN, Papanicolaou GJ, Peng B, Ritchie MD, Rosenfeld G, Witte JS, **Gillanders EM**, Feuer EJ. Genet Epidemiol. 2015 Jan;39(1):11-19. doi: 10.1002/gepi.21870. Epub 2014 Nov 4.

[Gene-environment interactions in cancer epidemiology: a National Cancer Institute Think Tank report.](#) Hutter CM, Mechanic LE, Chatterjee N, Kraft P, **Gillanders EM**; NCI Gene-Environment Think Tank. Genet Epidemiol. 2013 Nov;37(7):643-57. doi: 10.1002/gepi.21756. Epub 2013 Oct 5.

[Next Generation Analytic Tools for Large Scale Genetic Epidemiology Studies of Complex Diseases.](#)

Mechanic L, Chen H, Amos C, Chatterjee N, Cox N, Divi R, Fan R, Harris E, Jacobs K, Kraft P, Leal S, McAllister K, Moore J, Paltoo D, Province M, Ramos E, Ritchie M, Roeder K, Schaid D, Stephens M, Thomas D, Weinberg C, Witte J, Zhang S, Zöllner S, Feuer E, **Gillanders EM**. Genet Epidemiol. 2012 Jan;36(1):22-35

[The value of molecular haplotypes in a family-based linkage study.](#) Gillanders EM, Pearson JV, Sorant AJ, Trent JM, O'connell JR, Bailey-Wilson JE. Am J Hum Genet. 2006 Sep;79(3):458-68.

Keywords: Innovation, Collaborative, Rigor and Reproducibility, Twin

2023 IGES Elections
Candidate for Treasurer – Julia Bailey



Julia is currently Treasurer (July 2020- June 2023) and is standing for re-election for a second terms from July 2023 to June 2026

Julia got her first degree in her hometown at Concordia University, Montreal, Quebec. She got her Ph.D. at Yale University in Connecticut, USA and then did a few post-docs at the University of California, Los Angeles. She stayed where the climate suits her clothes and is now a Professor in the Department of Epidemiology, UCLA. Julia teaches Genetic Epidemiology and directs the Field Studies for MPH students. Julia also has a joint appointment at the VA where she directs the Statistical Genetics Core in the Epilepsy Genetics/Genomics Laboratories - West Los Angeles Medical Center.

Julia's research mainly focuses on genetics of epilepsy and Post Traumatic Stress Disorder. She uses family study designs to localize causal genes using state-of-the-art methods such as linkage lod score analyses.

Julia has been a member of IGES since the beginning; she attended the first conference as a graduate student in 1992. Julia was on the IGES Membership Committee from 2000-2009, Education Committee from 2009-2013 (Chair from 2010-2013), IGES Board of Directors from 2016-2018, and Treasurer of IGES from 2020 – present.

Five selected publications:

1. Bailey JN, Goenjian A. How the Spitak Earthquake contributed to our understanding of the Genetics of PTSD and Associated Disorders. Editors A Goenjian, A Steinberg and R Pynoos. Cambridge University Press, UK, 2022
2. Bailey JN, Bai D, de Nijs L, Suzuki T, Medina MT, Serratosa JM, Duron RM, Alonso ME, Patterson C, Tanaka M, Wight JE, Lin Y, Martinez-Juarez IR, Ochoa A, Jara-Prado A, Guilhoto L, Yacubian M, Murayama M, Inoue Y, Kaneko S, Hirose S, Osawa M, Oguni H, Fujimoto S, Grisar TM, Yamakawa K, Lakaye B, Delgado-Escueta AV. Heterozygous variants in Intestinal Cell Kinase Impair Mitosis, Cell Cycle Exit and Radial Neuroblast Migration and cause Juvenile Myoclonic Epilepsy. *N Engl J Med.* 2018 Mar 15;378(11):1018-1028.
3. Bailey JN, Patterson C, de Nijs L, Durón RM, Nguyen VH, Tanaka M, Medina MT, Jara-Prado A, Martínez-Juárez IE, Ochoa, Molina Y, Suzuki T, Alonso MA, Wight JE, Lin YC, Guilhoto L, Yacubian EMT, Machado-Salas J, Daga A, Yamakawa K, Grisar TM, Lakaye B, Delgado Escueta AV. (2017): EFHC1 variants in Juvenile Myoclonic Epilepsy: Reanalysis according to NHGRI and ACMG Guidelines for assigning disease causality. *Genetics in Medicine* 19(2):144-156. PMID: 27467453.

4. Wight JE, Lin Y, Nguyen V, Tanaka M, Bai D, Aftab S, Patterson C, Durón RM, Medina MT, Bailey JN, Delgado-Escueta AV. (2016): Identification of Juvenile Myoclonic Epilepsy Loci in Chromosomes 16p13.3, 13q31.1, and 4q35.2 in Honduran Families: Linkage to Epilepsy and Encephalography Trait. *Molecular Genetics & Genomics Medicine* 23;4(2):197-210. PMID: 27066514

5. Bailey JN, Almasy L (1995): A brute force dichotomization approach to quantitative trait linkage analyses. *Genetic Epidemiology* 12:719-722. PMID: 8787998

Keywords: family studies, lod scores, enthusiastic, energetic, empathetic.

2023 IGES Elections
Candidate for Board of Directors – Denise Daley



Dr. Daley completed a PhD in Epidemiology and Biostatistics at Case Western Reserve University, followed by post-doctoral training at the University of British Columbia from 2003-2008. In 2008 she was awarded a Tier II Canadian Research Chair (genetic epidemiology of common complex diseases), renewed in 2013. Dr. Daley's interests are in the study of complex diseases such as asthma, food allergy, allergic disease, cancer and heart disease, with a focus on gene-gene and gene-environment interactions. Dr. Daley has led Canadian efforts to identify the genetic susceptibility to asthma, food allergy and

allergic conditions. She is currently leading a team seeking to identify epigenetic signatures associated with asthma and allergic disease, funded by the Canadian Epigenetics, Environment and Health Research team grant from the Canadian Institutes for Health Research. Dr. Daley has received numerous awards including a Michael Smith Foundation of Health Research career award, Maud Menton award in addition to a Tier II Canadian Research Chair. Teaching activities include a course on statistical genetics for genetic counselors, sex and gene-environment interactions for Bioinformatics and case based learning for medical students.

I have been a long standing and devoted member of IGES, having attended every meeting since 2000, with exception of 2004. I am proud to be an IGES fellow and I have served on numerous committees that support the society and its work, including the Ethical, Legal and Social Issues (ELSI) (2 terms), Publications, and Programming committees. During my time on the ELSI committee we surveyed the membership, wrote letters on behalf of the society to NIH regarding ethical challenges surrounding the sharing of genetic data and published a paper in Genetic Epidemiology. I greatly enjoyed my time on the publication committee, which requires that you read a large number of the papers published in Genetic Epidemiology the previous year. It is a lot of work but very rewarding both personally and professionally. These have been great experiences and I would highly recommend and encourage you to get involved and serve on the committees. I would consider a great honor to be elected to serve on the IGES Board of Directors.

Five selected publications:

1. Genome-wide association study and meta-analysis in multiple populations identifies new loci for peanut allergy and establishes C11orf30/EMSY as a genetic risk factor for food allergy. Yuka Asai, Aida Eslami, C Dorien van Ginkel, Loubna Akhbir, Ming Wan, George Ellis, Moshe Ben-Shoshan, David Martino, Manuel A Ferreira, Katrina Allen, Bruce Mazer, Hans de Groot, Nicolette W de Jong, Roy N Gerth van Wijk, Anthony EJ Dubois, Rick Chin, Stephen Cheuk, Joshua Hoffman, Eric Jorgensen, John S Witte, Ronald B Melles, Xiumei Hong, Xiaobin Wang, Jennie Hui, Arthur W Bill Musk, Michael Hunter, Alan L James, Gerard H Koppelman, Andrew J Sandford, Ann E Clarke, **Denise Daley**. *Journal of Allergy and Clinical Immunology* 141 (3), 991-1001.
2. The evolution of the hygiene hypothesis: the role of early-life exposures to viruses and microbes and their relationship to asthma and allergic diseases. **Denise Daley** - *Current opinion in allergy and clinical immunology*, 2014.
3. Practical barriers and ethical challenges in genetic data sharing. Claire L Simpson, Aaron J Goldenberg, Rob Culverhouse, **Denise Daley**, Robert P Igo Jr, Gail P Jarvik, Diptasri M Mandal, Deborah Mascalzoni, Courtney Gray Montgomery, Brandon L Pierce, Rosemarie Plaetke, Sanjay Shete, Katrina AB Goddard, Catherine M Stein. *International Journal of Environmental Research and Public Health* 11 (8383-8398).
4. Analyses of associations with asthma in four asthma population samples from Canada and Australia. **Denise Daley**, Mathieu Lemire, Loubna Akhbir, Moira Chan-Yeung, Jian Qing He, Treena McDonald, Andrew Sandford, Dorota Stefanowicz, Ben Tripp, David Zamar, Yohan Bosse, Vincent Ferretti, Alexandre Montpetit, Marie-Catherine Tessier, Allan Becker, Anita L Kozyrskyj, John Beilby, Pamela A McCaskie, Bill Musk, Nicole Warrington, Alan James, Catherine Laprise, Lyle J Palmer, Peter D Paré, Thomas J Hudson *Human Genetics* volume 125, pages445–459 (2009).
5. SLIMS—a user-friendly sample operations and inventory management system for genotyping labs. T Van Rossum, B Tripp, **D Daley**. *Bioinformatics* 26 (14), 1808-1810.

Keywords: genetic epidemiology, epigenetics, asthma, food allergy and COPD.

2023 IGES Elections
Candidate for Board of Directors – Hae Kyung Im



As a faculty member in the Section of Genetic Medicine at the University of Chicago, Hae Kyung Im develops methods to make sense of the massive amounts of genomic and other high-dimensional data that are being generated in biomedical research. With a focus on integrating genome-wide association and functional genomics studies, Dr. Im is using her expertise in statistical methods to unlock the secrets of complex diseases and traits, and to translate her findings into real-world improvements in human health. A pioneer in the field of TWAS analysis, Dr. Im has developed a widely used framework for testing the mediating effects of gene expression traits on phenotypes. With a background in physics, manufacturing, information security, and finance, Dr. Im brings a unique perspective to her work at the intersection of statistics, genomics, medicine, and big data analytics. Dr. Im has been a member of the International Genetic Epidemiology Society (IGES) since 2012 and has served on the communications committee since 2015. She led the effort to set up the IGES intranet using the Google Suite for non-profits, which has helped the society save on operation costs. In addition to her work with IGES, Dr. Im is an associate editor of the *American Journal of Human Genetics*, and she has received numerous awards for her research, including the IGES Robert Elston award in 2014 and the University of Chicago's Distinguished Faculty award in 2020.

Five selected publications:

- Eric R Gamazon, Heather E Wheeler, Kanan P Shah, Sahar V Mozaffari, Keston Aquino-Michaels, Robert J Carroll, Anne E Eyler, Joshua C Denny, GTEx Consortium, Dan L Nicolae, Nancy J Cox, and **Hae Kyung Im***. A gene-based association method for mapping traits using reference transcriptome data. *Nature Genetics*, 47(9):1091–1098, September 2015.
- Alvaro N Barbeira, Scott P Dickinson, Rodrigo Bonazzola, Jiamao Zheng, Heather E Wheeler, Jason M Torres, Eric S Torstenson, Kanan P Shah, Tzintzuni Garcia, Todd L Edwards, Eli A Stahl, Laura M Huckins, GTEx Consortium, Dan L Nicolae, Nancy J Cox, and Hae Kyung Im*. **Exploring the phenotypic consequences of tissue-specific gene expression variation inferred from GWAS summary statistics.** *Nature Communications*, 9(1):1–20, May 2018.
- Milton Pividori, Padma S. Rajagopal, Alvaro Barbeira, Yanyu Liang, Owen Melia, Lisa Bastarache, YoSon Park, GTEx Consortium, Xiaoquan Wen, and Hae Kyung Im*. 2020. “PhenomeXcan: Mapping the Genome to the Phenome through the Transcriptome.” *Science Advances* 6 (37). 2020.
- The GTEx Consortium. **Atlas of genetic regulatory effects across human tissues.** *Science*. 10-Sep-2020 DOI:10.1126/science.aaz1776

- Yanyu Liang, François Aguet, Alvaro N. Barbeira, Kristin Ardlie, and Hae Kyung Im*. 2021. **“A Scalable Unified Framework of Total and Allele-Specific Counts for Cis-QTL, Fine-Mapping, and Prediction.”** *Nature Communications* 12 (1): 1424.

Keywords:

Statistical Genetics, PrediXcan/TWAS, Complex Trait Genetics, Integrative omics

2023 IGES Elections
Candidate for Board of Directors – Ching-Ti Liu



Ching-Ti Liu is a Professor of Biostatistics at the Boston University School of Public Health. He received his Ph.D. in Statistics from UCLA and completed his post-doctoral training at Yale University before joining BU.

His research activities focus on statistical genetics and its applications. Trans-ethnic association analysis, gene-by-environment interaction, and integrative analysis have been the three primary focuses of his scholarship and mentoring. Over the years, he has been involved in several international collaborative consortia studying genetics and environmental

exposures in relation to metabolic-related disorders and musculoskeletal disorders. Ching-Ti is an elected fellow of the American Statistical Association. He has received awards for Excellence in Teaching and Research Mentoring.

Ching-Ti's first IGES meeting was in 2008. The open discussion and tight connection have amazed him; he has been an IGES member since then. Ching-Ti has served on the IGES membership committee and Program Committee (Program Chair for the IGES annual meeting 2020).

Five selected publications:

1. **Liu CT**, Raghavan S, Maruthur N, ..., Meigs JB. Trans-ethnic Meta-Analysis and Functional Annotation Illuminates the Genetic Architecture of Fasting Glucose and Insulin. *Am J Hum Genet.* 2016 Vol 99, Issue 1, p56-75. PMID:27321945 (Featured article of the issue)
2. Wang L, Perez J, Heard-Costa N, ..., Levy D, Fox C, Cupples LA, and **Liu CT.** (2018). Integrating Genetic, Transcriptional and Biological Information Provides Insights into Obesity. *Int J Obes (Lond).* 2019 Mar;43(3):457-467. PMID:30232418
3. Lim E, Chen H, Dupuis J, **Liu C-T.** (2020). A unified method for rare variant analysis of gene-environment interactions. *Stat Med.* 2020 Mar 15;39(6):801-813. PMID: 31799744
4. Fisher V, Sebastiani P, Cupples LA, **Liu C-T.** (2021). ANNORe: Genetic fine mapping with functional annotation. *Hum Mol Genet.* 2021 Dec 17;31(1):32-40. PMID: 34302344
5. Wu P, Moon JY, ..., Meigs JB, Florez JC, Dupuis J, **Liu CT***, Merino J.* (2022). Obesity partially mediates the diabetogenic effect of lowering low-density lipoprotein cholesterol. *Diabetes Care.* 2022 Jan 1;45(1):232-240. PMID: 34789503 (*equally contributed)

Keywords: metabolic disorder, statistical genetics, genetic epidemiology, approachable, interdisciplinary

2023 IGES Elections
Candidate for Board of Directors – Mohamad Saad



Dr. Mohamad Saad is a Senior Research Scientist and group leader at the Qatar Center of Artificial Intelligence and Qatar Computing Research Institute, part of Hamad Bin Khalifa University. Dr. Saad has a background in applied mathematics and statistics. His research interests are in statistical genetics and bioinformatics. He obtained his bachelor's degree in applied mathematics (majoring in statistics) at the Lebanese University in 2006, his master's and PhD degrees in Statistical Genetics in France at the University of Montpellier II (2007) and the University of Paul Sabatier III (2012), respectively. Between 2012 and 2016, he did his postdoctoral senior fellowship at the Department of Biostatistics at the University of Washington, Seattle. In 2017, he joined Qatar Computing Research Institute as a research scientist.

Dr. Mohamad Saad is an IGES fellow and has been a member of the society for the past 10 years. He won the Neel Award for the best presentation by a young investigator at IGES Vienna, 2014. His research has been focusing on developing and applying new statistical methods to unravel new genetic variants associated with complex diseases, especially for underrepresented Middle Eastern populations. His research interests are on family- and population-based GWAS, genotype imputation, and polygenic risk scores. Dr. Saad is also interested in machine learning approaches to integrate multi-omic data for chronic diseases including coronary heart disease and type 2 diabetes.

On the personal side, Mohamad Saad loves traveling, meeting new people from diverse backgrounds, traditions, and cultures, and loves to transmit his experience to his 6-yr old son, Amir, who claims he is 7 already, and thinks his father's work is about drawing bad airplanes, referring to violin plots of skewed distributions.

Five selected publications:

1. **Saad M**, Mokrab Y, Halabi N, Shan J, Razali R, Kunji K, Syed N, Temanni R, Subramanian M, Ceccarelli M, et al. Genetic predisposition to cancer across people of different ancestries in Qatar: a population-based, cohort study. *Lancet Oncology*. 2022;23:341-352. doi: 10.1016/S1470-2045(21)00752-X
2. **Saad M**, El-Menyar A, Kunji K, Ullah E, Al Suwaidi J, Kullo IJ, Validation of Polygenic Risk Scores for Coronary Heart Disease in a Middle Eastern Cohort Using Whole Genome Sequencing. *Circulation, Genomic and Precision Medicine*, 2022;0:e003712, <https://doi.org/10.1161/CIRCGEN.122.003712>
3. Caliebe A, Tekola-Ayele F, Darst BF, Wang X, Song YE, Gui J, Sebro RA, Balding DJ, **Saad M**, Dube MP. Including diverse and admixed populations in genetic epidemiology research. *Genet Epidemiol*. 2022;46:347-371. doi: 10.1002/gepi.22492
4. Sayaman RW*, **Saad M***, Thorsson V, Hu D, Hendrickx W, Roelands J, Porta-Pardo E, Mokrab Y, Farshidfar F, Kirchhoff T, et al. Germline genetic contribution to the immune landscape of cancer. *Immunity*. 2021;54:367-386 e368. doi: 10.1016/j.immuni.2021.01.011
5. Ullah E, Mall R, Abbas MM, Kunji K, Nato AQ, Jr., Bensmail H, Wijsman EM, **Saad M**. Comparison and assessment of family- and population-based genotype imputation methods in large pedigrees. *Genome Res*. 2019;29:125-134. doi: 10.1101/gr.236315.118

Keywords: Inclusion, Open Science, Statistical Genetics, Artificial Intelligence, Precision Medicine

IGES 2022 Paris meeting highlights
Thanks for attending!

IGES 2022 took place in hybrid format both online in person and from 5-7 Sept in Paris.

Congratulations to the winners of the Robert C. Elston Best Paper in *Genetic Epidemiology*:

Kevin Gleason, Yang Fan, Lin Chen: A robust two-sample transcriptome-wide Mendelian randomization method integrating GWAS with multi-tissue eQTL summary statistics. *Genetic Epidemiology*, Volume 45, Issue 4 (June 2021), Pages 353-371.
<https://onlinelibrary.wiley.com/doi/10.1002/gepi.22380>



Congratulations to our prize winners:



James V Neel Award (post-doc): **Arjun Bhattacharya** for the presentation on: Isoform-level transcriptome-wide association studies uncover novel mechanisms underlying genetic associations with complex traits

Roger Williams Award (student enrolled in a bachelor, master or PhD program): **Nazia Pathan** for the presentation on: Contribution of Rare Coding Variants to Complex Trait Heritability



Poster Award Winners:

1st Place: **Hung-Hsin Chen**: Genomic shared segments enable identification of at-risk patients in biobanks

2nd Place: **Julien St-Pierre**: Polygenic risk scores based on penalized generalized linear mixed models.

3rd Place: **Anthony Herzig**: Constructing a SURrogate-Family Based Association Test (SURFBAT) with genotype imputation algorithms



IGES leadership award: **Celia Greenwood**

IGES 2023 in Nashville
Save the dates and plan to attend!

Make plans to join us in Nashville, TN, November 5-7, 2023 at the Loews Vanderbilt Hotel. Welcome reception is on the evening of Nov 5th, following ASHG in Washington DC.





IGES was saddened at the unexpected passing of Professor Saurabh Ghosh on October 3rd, 2022. We remember his enthusiasm for scientific research, and also his broad sharing of knowledge and inclusion of others. We send heartfelt condolences to his family, friends & the genetics community.

Dr. Ghosh was Professor & Head of the Human Genetics Unit at the Indian Statistical Institute, Kolkata. He received his undergraduate, masters and Ph.D. degrees in Statistics from the Indian Statistical Institute.

Dr. Ghosh was a beloved and active member of IGES for over 20 years. And he encouraged participation and representation in IGES and in the fields of statistical genetics and genetic epidemiology. He will be greatly missed.

2022 IGES Officials

The names of all the IGES officials are available on our **website**:

<https://www.geneticepi.org/organization>

Current **officers** are: President: David Balding (Melbourne, Australia); Past-President: Heike Bickeböllner (Goettingen, Germany); President-Elect: John Witte (Stanford, US); Treasurer: Julia Bailey (UCLA, US); Secretary: Andrew Paterson (Toronto, Canada); Editor-in-Chief, Genetic Epidemiology: Sanjay Shete (Houston, US).

Board members comprise the officers and the following 6 people: Frank Dudbridge (Leicester, UK) & Jinko Graham (Burnaby, Canada; until end 2022), Maggie Wang (Chinese University of Hong Kong) & Eleanor Wheeler (AstraZeneca UK; until end 2023); Stephanie Santorico (Denver, US) and Elizabeth Blue (Seattle, US; until end 2024).

The **Education Committee** is co-chaired by Sarah Buxbaum and Chunyu Liu.

The **ELSI Committee** is chaired by Marie-Pierre Dubé:

The ELSI committee has kept very busy in the last year working on a manuscript on diversity and inclusion in genetic epidemiology research, which is now published. The article discusses some of the available methods and analysis tools for the conduct of more inclusive genetic epidemiology research, with a focus on admixed and ancestrally diverse populations. We encourage all IGES members to read the article and to consider trying out some of the tools and methods that are presented. Have a look here: Caliebe et al. Genet Epidemiol. 2022 Oct;46(7):347-371; <https://onlinelibrary.wiley.com/doi/10.1002/gepi.22492>

The **Publications Committee** is chaired by President-Elect (John Witte in 2022).

The **Scientific Program Committee** for 2023 is chaired by Denise Daley.

The **Young Investigators' Committee** is chaired by Chloé Sarnowski:

We would like to thank everyone who attended the YIC activities at IGES 2022 in Paris (photo below). Please feel free to contact the YIC if you have any suggestions of new activities or if you have interest in joining us (contact email: Chloe.Sarnowski@uth.tmc.edu).



The **Communications Committee** is chaired by the Secretary (Andrew Paterson (for 2022-2025)).

Please refer to the above website for the current respective committee members.

The **IGES webmaster** is Sarah Gagliano. The **IGES Facebook contact** is Marc-André Legault, the **Twitter contact** is Priya Duggal and the **LinkedIn contact** is Han Chen.

Membership and conference administration is organized by Vanessa Olmo.

IGES Website: <https://www.geneticepi.org>

IGES Facebook page: <https://www.facebook.com/geneticepi?ref=hl>

IGES Twitter page: <https://twitter.com/genepisociety>

IGES LinkedIn page: <https://www.linkedin.com/groups/12061041/>

IGES Facebook page exclusively for Young Investigators:

<https://www.facebook.com/pages/International-Genetic-Epidemiology-Society-Iges-Next-Generation/174416209303988?ref=hl>

This December 2022 Pre-Election Newsletter was edited, proofread, and formatted by Andrew Paterson