

Announcements

✧ Call for participation in the 37th NESS Symposium

The Department of Statistics at the University of Connecticut is proud to host the 37th New England Statistics Symposium on May 20–24, 2024. Please contact the Committee Chairs Dr. Kun Chen (kun.chen@uconn.edu) and Dr. Ming-Hui Chen (ming-hui.chen@uconn.edu) for inquiries, or check the official website at <https://symposium.nestat.org> for more details about the event.

✧ Call for nomination of the Chernoff Excellence in Statistics Award

✧ Call for nomination for the NESS Vice President for NextGen

At A Glance: NESS Activities in 2023

- ✧ The 36th New England Statistics Symposium
- ✧ The 2023 NextGen Data Science Day
- ✧ Diversity, Inclusion, & Outreach
- ✧ Updates from the Committee on Journal and Publication
- ✧ Updates from the Committee on Education
- ✧ The 6th Annual New England Rare Disease Statistics Workshop
- ✧ Other NESS Sponsored Events in 2023
- ✧ Leadership & the 2023 Election

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A Message from the President Dr. Eric Kolaczyk

It was another banner year for the New England Statistical Society. Our two major annual events, the NESS Symposium and the NextGen Data Science Day, were both highly successful. Offered in hybrid format, both featured a broad and diverse selection of speakers and near-record attendance. Both were also characterized by substantial student involvement. At the same time, the New England Rare Disease Statistics (NERDS) workshop was held this year in New Jersey for the first time, with nearly 100 participants



NESS 2023 Banquet Talk

converging to talk about the challenges in this ever increasingly busy and complex area. We were delighted to see an uptick in applicants for our NextGen Scholarships for Underrepresented Minorities and made awards to six fantastic individuals this year (one more than last year). Looking forward, we would like to see a doubling of the number of scholarships we can give. To help incentivize that increase, NESS is committed to providing matching funds for the first five scholarships. Please consider donating this year to help us reach our goal!

The NESS flagship journal, the New England Journal of Statistics and Data Science, continued its impressive initial trajectory this year with over two dozen papers now published or in press, the start of a corresponding webinar series to highlight some of these, and strong visibility at several international conferences through sponsored sessions. A truly impressive start...with no sign of slowing down!

Finally, NESS has been proud to partner with several other organizations and groups this past year, both local and national, to help support and publicize a variety of additional events for the broader statistics and data science communities.

Looking forward, for what will be the last six months of my two-year term as president, the executive committee and I will be working with the larger NESS Council on a strategic planning exercise. We will be looking especially at the question of how NESS can further expand its signature support of students and early professionals in statistics and data science, both local to the New England area and beyond. If you have thoughts or ideas, please reach out and let us know.

In closing, I'd like to express my profound gratitude to all the many volunteers who have contributed to the NESS mission this past year. NESS is — and will continue to be, in 2024 and beyond — a success because of your efforts!

The 36th New England Statistics Symposium

The Department of Biostatistics and the Department of Mathematics & Statistics at Boston University (BU) proudly hosted the 36th New England Statistics Symposium from June 3-6, 2023. As a flagship annual event of the New England Statistical Society (<https://nestat.org>), the symposium has been bringing together statisticians from all over New England and beyond to share research, discuss emerging issues in the field, and network with colleagues, ever since it was first started at UConn in 1987.


The 36th Symposium was run in a hybrid mode, with in-person sessions held at BU Charles River Campus in Boston and all sessions broadcast live via Whova. Short courses were offered on June 3 and 4, and the main conference program was on June 5 and 6. Here are a few highlights.

- There were **7 short courses** taught by an all-star lineup, that covered a spectrum of topics in statistics and data science including Bayesian clinical trial designs, spatial data science, analysis of neural electrophysiology data, causal mediation analysis, geometric methods for functional and shape data analysis, and conformal inference methods in deep learning.

SHORT COURSES

The 36th New England Statistics Symposium
Date: June 3-4, 2023

Venue: BU Computing and Data Science building



For more information visit symposium.nestat.org/short-courses.html

Introduction to the Analysis of Neural Electrophysiology Data

June 3, Half day - AM Session; Hybrid

Instructor:
Dr. Uri Eden, Professor of Mathematics and Statistics and director of the Statistics program at Boston University
Dr. Mark Kramer, Professor of Mathematics and Statistics and associate director of the Center for Systems Neuroscience at Boston University

This course covers fundamental concepts and techniques for analyzing electrophysiological data from the brain, including spike train and LFP data. Topics include spike sorting, receptive field modeling, latent process models, neural decoding, spectral estimation, and coherence analysis. The course also provides modeling foundations for a succeeding short course on Advanced Methods for the Analysis of Neural Electrophysiology Data.

Dr. Uri Eden
Dr. Mark Kramer

Geometric Methods for Functional and Shape Data Analysis

June 4, Full day; Hybrid

Instructor:
Dr. Karthik Bharath, Professor of Statistics at the University of Nottingham
Dr. Sebastian Kurtek, Professor of Statistics at The Ohio State University

With a focus on decoupling and modelling different sources of variation, this course will present an overview of the use of geometry-driven methods to carry out metric-based statistical analysis of functional data. To demonstrate the broad applicability of the geometric tools, we will ground the mathematical descriptions in concrete statistical tasks arising from various application settings (e.g., biomedical, environmental); these will include amplitude-phase separation and modelling of univariate functions under sparse and dense sampling settings; mean computation, PCA and visualisation of variations of shapes of 2D and 3D curves; classification and regression with functions and curves.

Dr. Karthik Bharath
Dr. Sebastian Kurtek

Bayesian Clinical Trial Designs and Their Implementation

June 3, Full day; Hybrid

Instructor:
Dr. Ying Yuan, Bettyanne Auché Murray Distinguished Professor and Deputy Chair in the Department of Biostatistics at University of Texas MD Anderson Cancer Center
Dr. Yong Zeng, Associate Professor in the Department of Biostatistics and Health Data Science at Indiana University

This course covers Bayesian clinical trial designs for early phase trials, including phase I dose-finding trial designs, with a focus on model-assisted designs and dose-finding design for dose optimization. It also covers phase II trial designs, including Bayesian optimal phase II design, biomarker-based designs, and basket and platform trial designs.

Dr. Ying Yuan
Dr. Yong Zeng

Advanced Topics in the Analysis of Neural Electrophysiology Data: Decomposing Rhythmic and Broadband Components

June 3, Half day - PM Session; Hybrid

Instructor:
Dr. Emily F. Stephen, Assistant Professor of Statistical Neuroscience at Boston University
Dr. Thomas Donoghue, Postdoctoral research scientist in the Department of Biomedical Engineering at Columbia University

This short course will introduce statistical tools to model and decompose neural electrophysiological signals into physiologically informed features of interest, including rhythmic and broadband components. The presenters will present brief lectures on (1) using frequency-domain spectral decomposition to estimate and separate rhythmic signals from broadband power spectral signatures, and (2) using state space models to capture time-domain rhythms and their interactions.

Dr. Emily F. Stephen
Dr. Thomas Donoghue

Conformal Inference Methods in Deep Learning

June 4, Full day; Hybrid

Instructor:
Dr. Matteo Sesia, Assistant Professor of Data Sciences and Operations at the University of Southern California USC Marshall School of Business, Assistant Professor (by courtesy) of Computer Science at the USC Viterbi School of Engineering

This short course provides a hands-on introduction to modern techniques for uncertainty estimation in deep learning with a focus on conformal inference. Participants will learn how to leverage conformal inference ideas to construct reliable and interpretable uncertainty estimates for the predictions of deep neural network models in both multi-class classification and regression problems. The course also covers techniques for computing conformal inference that can automatically adapt to possible heteroscedasticity and skewness in the data, addressing fairness issues, and mitigating over-confidence in neural networks.

Dr. Matteo Sesia

Spatial Data Science Using R

June 3, Full day; Hybrid

Instructor:
Dr. Paula Moraga, Assistant Professor of Statistics at King Abdullah University of Science and Technology (KAUST) and Principal Investigator of the GeoHealth group

This course covers statistical methods, modeling approaches, and visualization techniques to analyze spatial data using R. We will also learn how to create interactive dashboards and Shiny web applications. Topics covered include areal, geostatistical, and point pattern data, R packages for retrieval, manipulation and visualization of spatial data, and Bayesian spatial models using INLA and SPDE.

Dr. Paula Moraga

Causal Mediation Analysis: The Old and the New

June 4, Full day; Hybrid

Instructor:
Dr. Judith Lok, Associate Professor of Mathematics and Statistics at Boston University
Dr. Rya Shpitser, John C. Malone Associate Professor in Computer Science at Johns Hopkins University

This short course will introduce and compare different approaches to causal mediation analysis. We will argue that pure indirect effects and organic indirect effects relative to "no treatment" are very relevant for drug development. We illustrate the benefits of these approaches by estimating the indirect effect of HIV treatments and COVID-19 treatments that target despair/neurotrophin nets. We will also cover general identification of direct, indirect, and path-specific effects, and present estimation methods, including the influence function-based methods which achieve semiparametric efficiency.

Dr. Judith Lok
Dr. Rya Shpitser

NESS 2023 flyer for short courses

- There were **three keynote sessions**. Two keynote presentations were given by Dr. Jeffrey Rosenthal from University of Toronto and Dr. Francesca Dominici from Harvard University. We also organized a Keynote Panel Session on Statistical Methodologies for Mitigating Disparities in Medicine, with diverse panelists who are leaders from industry and academic institutions, including Marie-Laure Charpignon from Massachusetts Institute of Technology, Dr. Tristan Naumann from Microsoft Research, Dr. C. Brandon Ogbunu from Yale University, and Dr. Briana Stephenson from Harvard University. In addition, a banquet talk was given by Dr. Jennifer Hill from New York University.

THE 36TH NEW ENGLAND STATISTICS SYMPOSIUM

STATISTICS AND DATA SCIENCE - DRIVING DISCOVERIES IN MODERN ERA

JUNE 3-6, 2023
BOSTON UNIVERSITY



NEW ENGLAND STATISTICAL SOCIETY

NESS STATATHON 2023

Statistical data science invention marathon

THEME 1: FRAUD DETECTION
THEME 2: DID THE CUSTOMER TAKE ACTION AFTER THE ALERT?



JUNE 3-4: SHORT COURSES

Courses on:
Bayesian Clinical Trials
Spatial Data Science
Neuroscience
Causal Mediation Analysis
Functional and Shape Data Analysis
Conformal Inference in Deep Learning

JUNE 5-6: MAIN SESSION

Keynote sessions
Keynote panel
Invited sessions
Poster session
Chernoff Lecture by recipient of the Chernoff Excellence in Statistics Award

PLENARY TALKS

Dr. Francesca Dominici (Keynote)
Dr. Jeffrey Rosenthal (Keynote)
Dr. Jennifer Hill (Banquet)

Approach a real world data science problem in new and innovative ways! Statathon emphasizes the statistical aspects (insight, interpretation, significance, etc.) of data science problems that are often overlooked in many hackathons.

REGISTRATION DEADLINE:
MONDAY, MAY 8 2023 11:59 PM ET
SUBMISSION DEADLINE:
THURSDAY, MAY 22 2023 11:59 PM ET

[Register at statathon.nestat.org](https://statathon.nestat.org)

Also check out these awards/competitions:
NESS student research awards (symposium.nestat.org/awards.html)
NESS student poster awards (symposium.nestat.org/awards.html)

Website: symposium.nestat.org

NESS 2023 flyers for short courses and Statathon

- ✧ The society has created the [Chernoff Excellence in Statistics Award](#) to honor Herman Chernoff and his outstanding, long-term contributions to the field of statistics. We were very pleased to announce that the 2023 winner is [Dr. Nan Laird](#) from Harvard University. The Chernoff Lecture was delivered by Prof. Laird on June 6.



Dr. Nan Laird awarded the Chernoff Award by NESS President Dr. Eric Kolaczyk

- ✧ The [program committee](#) was joined by more than 28 members from various institutions and companies in the New England area and beyond, who worked together to create a high-quality scientific program with more than [60 invited sessions](#).
- ✧ Students were encouraged to participate in [student research/poster competitions](#) and a [Statathon data challenge](#). The symposium also offered job placement services to students and sponsors..

The symposium had a big turnout. There were about 450 conference registrations and 139 short course registrations, and the banquet was well attended by more than 80 guests. The symposium received support and sponsorship from many companies and institutions, including BU Department of Biostatistics, BU Department of Mathematics and Statistics, Rafik B. Hariri Institute for Computing and Computational Science & Engineering, Boehringer Ingelheim, Mass Mutual, Munich Re, PROMETRIKA, Sharecare, The Lotus Group, HSB, Travelers, Alexion Pharmaceuticals, Moderna, Servier Pharmaceuticals, Bristol Myers Squibb, and Vertex Pharmaceuticals. We sincerely appreciate their support and contribution!

We received more than 90 high-quality student paper and poster submissions. Eight students received NESS Student Research Awards sponsored by MassMutual (<https://nestat.org/researchawards/>), and five students received NESS Student Poster Awards sponsored by Munich Re (<https://nestat.org/posterawards/>). In addition, two teams won the NESS Stat-a-thon Challenge sponsored by Travelers and HSB and one team was given an honorable mention. Dr. Gina Peloso from Boston University and Dr. Yang Lin from HSB/Munich Re led the student poster award committee; Dr. Alex Baldenko and Dr. Bisakha Peskin from MassMutual and Dr. Ashis Gangopadhyay from Boston University led the student research award committee; and Dr. Masanao Yajima from Boston University led the Stat-a-thon committee. We sincerely thank the committee chairs and all the committee members for their excellent work!

Lastly, we would like to mention that the organization of the symposium was supported by more than 30 student volunteers from the Department of Biostatistics and Department of Mathematics and Statistics at BU. Several of these students took on leadership tasks in organizing and smoothly executing both the in person and online sessions of the conference. It is fair to say that the symposium was mainly run by the student volunteers and the symposium would not be successful without their dedication and contribution. On the other hand, the symposium provides an excellent opportunity for students to network, exchange ideas, and grow their professional skills. We hope more students are willing to participate and volunteering in the future. Thank you!

Next year, the symposium will be held at the University of Connecticut. We are anticipating a hybrid conference, and the tentative dates are set as May 22, 2024 — May 24, 2024. Please stay tuned and check our website at <https://symposium.nestat.org> for further information. Inquiries can be sent to Dr. Kun Chen at kun.chen@uconn.edu and Dr. Ming-Hui Chen at ming-hui.chen@uconn.edu. We look forward to your participation at the next symposium!

— Contributed by Shariq Mohammed (Assistant Professor of Biostatistics at BU) and Daniel Sussman (Assistant Professor of Mathematics and Statistics at BU). Edited by Yuwen Gu.

Updates from NextGen Committee

The 2023 NextGen Data Science Day Conference

On Saturday, October 21, the 2023 NextGen Data Science Day (DSD) was hosted in-person on the University of Connecticut Storrs campus, with a virtual option through the event platform Whova for attendees who cannot attend in person (<https://nestat.org/nextgen/dsd2023/>). The NextGen Committee, led by Dr. Wei Zhong, aims to support the next generation of data scientists and statisticians. Towards this goal, the DSD conference brought together a group of eminent data science practitioners, influencers, and leaders to interact with students and early career professionals. Topics of discussions included the current state and future directions of data science across broad and diverse markets.

This hybrid event had over 200 registrations in total, which may be the highest number in the NextGen DSD history, with over 100 in-person attendees. The majority of the registrants are student from over 30 different schools across the nation. American Statistical Association (ASA), Harvard University and Quinnipiac University sponsored the conference.

To kick off the conference, Dr. Barrett Wells, Associate Dean of College of Liberal Arts and Sciences at the University of Connecticut, gave a warm welcome to all the in-person attendees and highlighted the importance of data science in the new century in the opening remarks.

Our conference featured two distinguished keynote speakers, Dr. Eve Pickering from Pfizer and Dr. Nathan Carter from Bentley University. With over 25 years' experience in pharmaceutical industry, Dr. Pickering is currently Vice President and Head of Non-Clinical Statistics at Pfizer, where she promotes Objective Decision Making for nonclinical and early clinical projects. In her morning presentation "*Opportunities for Innovative Data Approaches in the Non-Clinical Space*", Dr. Pickering introduced the non-clinical research in pharma and illustrated why statistical approaches are important in this area by multiple interesting examples. Dr. Carter is the Director of the Center for Analytics and Data Science (CADS) and a Wilder Teaching Professor at Bentley University. In the afternoon feature workshop "*Large Language Models: Construction, Use, and New Discoveries*", Dr. Carter introduced the fundamental concepts and the transformer architecture that underpins Large Language Models like ChatGPT, provided an interactive demonstration in which the audience collectively built a tiny language model, and wrapped up with a discussion around best practices for using LLMs.

In a one-hour student poster competition, around ten posters were on display, and were graded by ten judges, who, hailing from both academia and industry, generously contributed their time and crucial feedback to the participants. We would also acknowledge our poster subcommittee members Xiaohan Guo, Shaoyang Ning, Gaurav Sharma, and Iris Yan for their great efforts on the poster session planning. Awards in "Graduate", "Undergraduate" and "Virtual" categories were announced at the end of the day, along with formal honorable mentions.

A total of 8 speakers participated in our panel sessions throughout the day. In the morning session "What Do Data Scientists Do?", four panelists Joe Cappelleri, Chris Harden, Daniel Chen and Haining Zhang from different industries shared their day-to-day experiences and their views of challenges as data scientists. In the afternoon session "Careers in Data Science", four panelists Ling Wang, Zachary Anglin, Yang Liu and Haim Bar from various fields shared their perspectives on career development and addressed many questions from the attendees.

One highlight of this conference is that a well-planned networking session was set up by Harold Ye, Neil Spencer, Min Lin, and Elizabeth Upton to encourage more interactions between the speakers and student attendees. All the speakers along with NextGen committee members were distributed into four small breakout rooms to meet the student attendees and address more specific questions. Two breakout rooms were broadcasted for virtual attendees. Finally, our conference was closed by the announcement of poster competition winners and the kick-off of the next NextGen Scholarship application.

In the conference, speakers and attendees were engaged and many interactions were observed. We intend to retain and further that vision, moving forward, as the session prospers. The conference was organized by the NextGen Committee, along with support from many student volunteers and Joint Statistical Club from University of Connecticut. Special thanks to the local committee Neil Spencer, Sana Gupta, and Min Lin for their great efforts on the logistics planning. The list of current committee members can be found at <https://nestat.org/nextgen/about/>.

— Contributed by Wei Zhong (Senior Director of Biostatistics at BioNTech); Edited by Yuwen Gu.

Diversity, Inclusion, & Outreach (DIO)

The NextGen Diversity, Inclusion, & Outreach (DIO) subcommittee in conjunction with the Education Committee has successfully wrapped up the second year of NextGen Scholarships for Underrepresented Minorities. These scholarships help support efforts



of NESS to improve the diversity and inclusivity of its community, as well as in the fields of statistics and data science. Through a targeted student engagement initiative, we saw a 5% increase in the number of applications (62 total) of which we awarded 6 students each \$1,200 (up from 5 last year). Congratulations Kimberly Girola-Guzman, Arlene Cross, Sara Almosawi, Athalia Olusina, Kaj Hansteen Izora, & Elizabeth Soyemi! Additionally, we connected one of the previous year's winners, Ashley Dawn, with mentor Timothy Moore (Director of the UConn Statistical Consulting Services). Together, they successfully submitted a student poster with Ashley as first author at the Data Science Day 2023. Congratulations Ashley and Tim! Award winners from this year's scholarship have expressed interest in a similar mentor program, of which we aim to build from this successful pilot and create a more sustainable mentee pipeline for larger NextGen/NESS mentorship efforts.



Kimberly Girola-Guzman



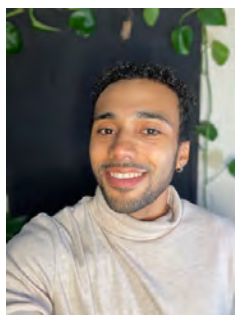
Arlene Cross



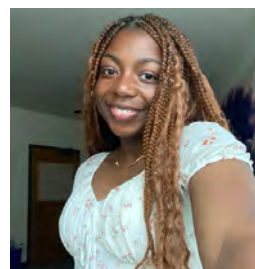
Sara Almosawi



Athalia Olusina



Kaj Hansteen Izora



Elizabeth Soyemi

2023 NESS NextGen Scholarships for Underrepresented Minorities Awardees

For the current round of scholarships, our team is focusing on improving our fundraising efforts through a partnership with Gregory Vaughan and the Committee on Strategies and Development. NESS has pledged to provide matching funds for the first 5 scholarships (up to \$6000), supporting a target goal of giving at least 10 scholarships this year. We also seek an additional member for the selection committee, ideally a high school STEM educator. We would like to thank all our scholarship volunteers, Austin Menger, Ashley Ruegg, Alex Young, Catherina Villafuerte, Katherine Zavez, Nathan Lally, Tanesia Beverly, Thomas Lee, Yulia Sidi & Jun Li for their hard work on the 2023 scholarship awards. For more information about the scholarship please visit our website, and if you are interested in volunteering or donating please reach out to Austin Menger. We look forward to reviewing our next batch of applications!

— Contributed by Wei Zhong (Senior Director of Biostatistics at BioNTech); Edited by Yuwen Gu.

Updates from the Committee on Journal and Publication

Major activities of the Journal and Publication Committee, chaired by Dr. Colin Wu, have been focusing on the promotion of manuscript submissions and improving the review processes for the NESS flagship journal, the New England Journal of Statistics in Data Science (NEJSDS). We are happy to report that the journal has officially published 34 articles in Volume 1, Issues 1-3, in 2023, and, in addition, there are 14 articles published as “articles to appear in subsequent issues” on the journal website <https://journal.nestat.org>. We have also launched a new online webinar series on selected papers published in the NEJSDS that is open to everyone. Dr. Xiao-Li Meng presented the paper “*Double Your Variance, Dirtify Your Bayes, Devour Your Pufferfish, and Draw Your Kidstogram*” in the first webinar on Tuesday, May 16, 2023, and Dr. James Berger presented the paper “*Four Types of Frequentism and Their Interplay with Bayesianism*” in the second webinar on Friday, November 3, 2023. More details about the two webinars are available on <https://nestat.org/news/2023/03/webinar/> and <https://nestat.org/news/2023/10/webinar/>. The first New England Journal of Statistics in Data Science workshop will be held on January 26, 2024, at the University of Connecticut's campus in Storrs, Connecticut. Further information will be posted on <https://journal.nestat.org>.

As an effective venue to attract high quality submissions, the editorial board has issued five Special Issue Calls since 2023. Counting the four past special issues in 2022, this leads a total of nine special issue calls for the journal since its inception. The

2023 Special Issues and their submission deadlines are “Pushing the Boundary of Data Science through Statistical Modelling and Inference” (deadline, March 15, 2024), “Dose Finding and Related Topics in Drug Development” (deadline, June 1, 2024), “Statistics and Computation in AI and Emerging Technology” (deadline, June 1, 2024), “Causal Inference: Past, Present, and Future” (deadline September 1, 2024), “Clinical Trial Designs Involving Multiple Stages and Re-Randomization Beyond Traditional Randomization” (deadline, September 30, 2024). If you are interested in submitting your work to a special issue, please check the website <https://journal.nestat.org/about> for details or consult with the special issue guest editors to confirm that the scopes and topics of your manuscript fit into the requirements of the particular special issue.

The NEJSDS Office of Editor-in-Chief regularly organized technical sessions in major statistical and data science meetings. The 2023 meetings included the “NEJSDS Invited Papers on the Analysis of Complex Data” at the 64th ISI World Statistics Congress (WSC) in Ottawa, Canada, and the “NEJSDS Invited Papers on Novel Machine Learning Methods for Complex Biomedical Studies” at the 2023 JSM in Toronto, Canada. Thanks to the leadership of Cancer Research Section Co-Editors, Dr. Ying Lu and Dr. Yuan Ji, we have an invited session proposal “Novel Statistical Methods and Designs for Clinical Trials” approved by the JSM 2024 invited program. If you plan to attend the 2024 JSM in Portland, Oregon (<https://ww2.amstat.org/meetings/jsm/2024/>), please make plans to attend our session and bring your friends, colleagues, and students with you.

2023 has been a very productive year for NEJSDS. These accomplishments would not have been possible without the tremendous time and efforts of all the contributing authors, reviewers, associate editors, section editors (Drs. Colin Wu, Yuan Ji, Ying Lu, Feng Guo, Ali Shojaie, Moinak Bhaduri, Haim Bar, Gavino Puggioni and Grace Yi), Editor-in-Chiefs (Dr. Ming-Hui Chen and Dr. Min-ge Xie) and other members of the Office of Editor-in-Chief (Dr. HaiYing Wang, Jing Wu, Daeyoung Lim, Liang Shi, Yelie Yuan and Heeju Lim). Through your support and relentless effort, we hope to showcase the exceptional statistical and data science research accomplishments of our NESS members and friends.

We also welcome any comments and suggestions from NESS members and friends to further highlight and promote NEJSDS and research of our society. We would be delighted to see your cutting-edge research published in NEJSDS. The NEJSDS is your journal! It is there to serve you, and it needs your help and participation!

— Contributed by Colin Wu (Mathematical Statistician at the National Institutes of Health and Adjunct Professor at Georgetown University); Edited by Yuwen Gu.



Updates from the Committee on Education



New England Statistical Society NextGen Scholarship

Committed to increasing diversity and representation in Statistics and Data Science.

APPLY TODAY!

The New England Statistical Society Scholarships for Underrepresented Minorities will advance the representation of underrepresented groups in statistics and data science by supporting graduating high school seniors and first/second-year undergraduate students interested in pursuing a career in statistics or data science (or both). The scholarships reflect the efforts of NESS to improve the diversity and inclusivity of its community, as well as in the fields of statistics and data science.

Are You Eligible to Apply?

- Graduating high school senior or first/second-year undergraduate student
- Black, Indigenous or Person of Color (BIPOC)
- Will be enrolled in a U.S. college or university for the upcoming 2023-2024 academic year
- Shows a genuine interest in statistics and data science through coursework, extracurricular activities, and/or future goals

Applications due April 1, 2024. Awards will be no less than \$1000, with winners announced at the NESS Symposium (either May 2024). Visit our [website](#) to apply today!

New England Statistical Society
NextGen and Education Subcommittee

The New England Statistical Society is proud to continue our Scholarships for Underrepresented Minorities which will advance the representation of underrepresented groups in statistics and data science by supporting graduating high school seniors and first/second-year undergraduate students interested in pursuing a career in statistics or data science (or both). The scholarships will support the efforts of NESS to improve the diversity and inclusivity of its community, as well as in the fields of statistics and data science. Please visit our website at <https://www.nextgenscholarship.nestat.org/> for additional information and eligibility criteria.

— Contributed by Alex Young (Undergraduate Advisor and Lecturer at Harvard Statistics); Edited by Yuwen Gu.

The 6th Annual New England Rare Disease Statistics (NERDS) Workshop

The New England Statistical Society (NESS) and the 2023 New England Rare Disease Statistics (NERDS) Organizing Committee held the successful 6th annual workshop on Oct 12-13 at Hilton Meadowlands, East Rutherford, New Jersey, in the New York Metropolitan Area (<https://nerds.nestat.org/index.html>). The landscape of drug development in rare diseases has undergone continual expansion and evolution in recent decades. Recognizing the unique technical challenges in this domain, NESS established a distinctive conference, providing statisticians working across the rare disease drug development spectrum a shared platform

to exchange ideas. This year's workshop theme is *"Accelerating Rare Disease Drug Development through Novel Endpoint, RWE, and Innovation"*. Here are some key highlights from the workshop:

- ✧ The workshop featured 19 talks and presentations by 3 invited keynote speakers/panelists and 17 statistical experts from academia, research institutions, and pharma/biotech companies specializing in rare disease drug development. The topics covered novel endpoints, real-world evidence (RWE), and innovation spanning trial design, analysis, and emerging technologies such as AI and machine learning.
- ✧ Dr. Rebecca Betensky, President-Elect of NESS and Professor and Chair of Biostatistics at NYU School of Global Public Health initiated the opening remarks. She underscored the statistical challenges in studying rare diseases, including small sample sizes, low event rates, heterogeneity, and the absence of placebos for ethical reasons. Dr. Steve Lake, Vice President of Quantitative Sciences at Alexion, the rare disease unit of AstraZeneca, followed with industry insights, highlighting the broadening statistical toolkits over the past two decades.
- ✧ Keynote presentations commenced with Dr. Janet Maynard, Director of the Office of Rare Diseases, Pediatrics, Urologic and Reproductive Medicine within the FDA's Center for Drug Evaluation and Research (CDER). She emphasized the FDA's initiatives, such as the Accelerating Rare Diseases Cures (ARC) program and the Rare Disease Endpoint Advancement (RDEA) Pilot Program, with transformative potential for treating rare diseases. The second keynote by Dr. Shein-Chung Chow, Professor at the Department of Biostatistics and Bioinformatics, Duke University School of Medicine, introduced an innovative two-stage approach to simultaneously test for effectiveness and safety in rare disease drug development. The keynotes were followed by a panel discussion led by L.J. Wei, a Biostatistics professor at Harvard University, emphasizing the goal of obtaining robust, clinically interpretable treatment effect estimates.
- ✧ The subsequent sessions on Day 1 included Endpoint-Development, Selection, and Validation (Session 2), Trial Design - Challenges and Novel Approaches (Session 3), and RWE-Methods and Case Studies (Session 4). Day 2 comprised Statistical Inference (Session 5) and Innovation (Session 6). Active engagement between presenters and audiences sometimes led to heated and constructive debates. All invited speakers were acknowledged and thanked for their contributions, with abstracts and presentation slides available (<https://nerds.nestat.org/full-program.html>).

The workshop drew a robust turnout with 97 in-person conference registrations. Participants represented pharma/biotech companies, institutions like FDA, UC Irvine, Harvard University, Boston University, University of Connecticut, UT Austin, NYU, Banaras Hindu University, consultants, and vendors. The event received support and sponsorship from various entities, including Platinum sponsors AstraZeneca / Alexion, Boehringer Ingelheim, and Pfizer; Gold Sponsor Novartis; and Silver sponsors Beigene, Prometrika, Sanofi, and Servier. Additional support came from ASA local chapters in Connecticut and New York, and Dahshu. Gratitude was extended to sponsors and contributors for their invaluable support. Special appreciation was directed to the committee chairs and members, including Ming-Hui Chen, Kun Chen, Richard Zhang, Andy Chi, Ran Duan, Roe Gutman, Jeffrey P. Palmer, Susie Sinks, Yang Song, Sammi Tang, Lin Wang, and Susan Wang. The supporting team, including Gina Andreo, Yuwei Gu, Tracy Burke, Simiao Gao, Min Lin, Shike Xu, Courtney Trzasko, and Yelie Yuan, received acknowledgment. The combination of hard work and commitment by the 2023 organizing committee members and supporting team was crucial to the meeting's success.



In conclusion, gratitude was expressed to all meeting participants, with anticipation for their continued involvement in future workshops.

— Contributed by Richard Zhang (Statistics Group Lead for Rare Disease, Pfizer), Kun Chen (Professor of Statistics at UConn), and Ming-Hui Chen (Distinguished Professor and Department Head of Statistics at UConn); Edited by Yuwen Gu.

Announcements

Call for Nominations of the Chernoff Excellence in Statistics Award

The Society has created the Chernoff Excellence in Statistics Award to commemorate Herman Chernoff's outstanding, long-term contributions to the field of statistics. These contributions include work on large sample theory, experimental design, sequential analysis, methods of presenting statistical data in visual form, and statistical decision making.

The Chernoff Excellence in Statistics Awards is the most prestigious award bestowed by the NESS, given to an individual who, in the tradition of Herman Chernoff's work, has made exceptional contributions to the theory, methodology, or novel applications to statistics and/or data science. The award will be rewarded to one recipient every year at the New England

Statistics Symposium, with travel expenses covered plus a minimum \$500 honorarium. The 2023 award recipient was Professor Nan Laird, Harvard University.

Nominees who previously did not win will be carried forward for future consideration and, if they like, are allowed to update their submission.

NESS is committed to a community of excellence, equity, and diversity and welcomes nominations of women, underrepresented minorities, persons with disabilities, sexual minority groups, and other candidates who have contributed to the diversification and enrichment of ideas and perspectives.

Nominations for the award are to be submitted by **January 15, 2024**. The procedure for nominating an individual for the Chernoff Excellence in Statistics Award is as follows:

- ✦ Download the one-page [nomination form](#) and complete it;
- ✦ Supply the candidate's CV;
- ✦ Email these documents to nestat.hcaward@gmail.com.

For more details on this award and for making nominations and donations, please visit <https://nestat.org/hcaward/>.

Call for Nominations for NESS Vice President of NextGen

The New England Statistical Society (NESS) is a non-profit organization dedicated to promoting the growth and expansion of statistical science in the New England area and beyond and, more generally, to supporting and sustaining statistics as a central pillar of data science. NESS aims to foster collaborations among statisticians from educational, research, industrial, and governmental agencies, and to promote statistical education at all levels.

The NextGen within NESS aims to support the next generation of statisticians and data scientists. Its mission is to ensure those new to statistics and data science, including but not limited to undergraduate students, graduate students, post-docs, faculty, and industry or government employees, have resources available through NESS that can help them thrive in their respective areas of interest, and provide a platform for them to contribute to the betterment of NESS. Prominent initiatives of the NextGen committee include organizing the annual [Data Science Day](#) conference primarily targeting undergraduate and master's students and collaborating with the Education committee to offer the [NextGen Scholarship for underrepresented minorities](#). Currently, NESS is seeking nominations for its next Vice President of NextGen to lead this committee in charting out bold and impactful new directions that continue to build on its success to date. For more details about the NextGen committee, please see <https://nestat.org/nextgen/>.

Please submit your nomination by **January 16th, 2024**. The procedure for nominating an individual or oneself is as follows:

- ✦ Download and complete the one-page [nomination form](#).
- ✦ Supply the candidate's CV.
- ✦ Email these documents to ness@nestat.org with the Subject "Nomination for VP of NextGen".

Other Sponsored Events

The 6th Annual Wesleyan QAC DataFest

The 6th annual Wesleyan QAC DataFest concluded on Sunday with 55 participants, 20 revolving all-star statistical consultants, and an esteemed panel of 4 judges. [DataFest](#) is a data analysis competition held at Wesleyan University where students are presented with a large, complex, surprise data set and work over the weekend to explore, analyze, and present their findings. Teams of 3-5 students work together and compete against other teams. This year, teams from Wesleyan University, Yale University, Connecticut College, Trinity College, UConn, and Bentley University were invited. The event is part of a set of initiatives to strengthen quantitative reasoning and facilitate computational and data analysis work across the curriculum. It is designed to bring together current students, alumni and data analysis professionals as they work together in addressing real world problems that involve computational data work. The event also provides an opportunity for recruiters to connect with students interested and skilled in data analysis that may be candidates for internships and job openings. NESS is a proud sponsor of this year's DataFest event.

Dose Finding and Other Topics in Drug Development Conference

The Dose Finding and Other Topics in Drug Development conference was held June 8-9, 2023 at the Storrs campus of The University of Connecticut in honor of Dr. Naitee Ting's 70th birthday. The conference brought together stakeholders from various scientific disciplines who sought to share research in a collegial environment for the advancement of dose-finding science in clinical trials, and provided a collaborative environment for young researchers who sought to learn more about the field, develop networks, and connect with top researchers.

ASA-BI-NESS Webinar Series

NESS continues to sponsor the ASA-BI-NESS Webinar series in 2023. This webinar series focuses on innovative statistical methodologies and other related topics. The webinar series is open to the broad statistics community and general external audiences.

- ✧ Webinar #34 (February 2): “*Toward Better Practice of Covariate Adjustment in Analyzing Randomized Clinical Trials*”, Dr. Ting Ye, Genentech Endowed Assistant Professor in Biostatistics at the University of Washington.
- ✧ Webinar #35 (March 7): “*Making Clinical Trial Design and Analysis Robust*”, Dr. Jeetu Ganju, Clinical Trials Consultant, Ganju Clinical Trials, LLC.

If you would like to attend the webinar, please send an email to MEDecc.US@boehringer-ingelheim.com.

Interdisciplinary Seminars on Statistical Methodology for Social and Behavioral Research

The Interdisciplinary Seminars on Statistical Methodology for Social and Behavioral Research continued to be supported by the Department of Statistics and the Department of Education Psychology at the University of Connecticut (UConn), the Statistical and Applied Mathematical Sciences Institute (SAMSI) and the New England Statistical Society (NESS). In 2023, the seminar is held in hybrid mode with people joining both in person and online from around the world and is scheduled monthly on a Friday. The aims of the seminar are to promote the connection between the statistical, social and behavioral science communities and to encourage more graduate students to participate in interdisciplinary research.

The seminars in 2023 are listed below:

Date	Speaker	Affiliation	Title
02/24/2023	Ben Domingue	Stanford University	Bookmaking for Binary Outcomes: Prediction, Profits, and the IMV
03/24/2023	Joseph Schafer	United States Census Bureau	Modeling Coarsened Categorical Variables: Techniques and Software
04/07/2023	Luke Miratrix	Harvard University	A Bayesian Nonparametric Approach to Geographic and 2-Dimensional Regression Discontinuity Designs
04/21/2023	Matthias von Davier	Boston College	Applications of Artificial Intelligence and Natural Language Processing in Educational Measurement
10/13/2023	Wes Bonifay	Stanford University	Uncovering the Hidden Complexity of Statistical Models
11/03/2023	Xinyuan Song	Chinese University of Hong Kong	Hidden Markov Models With An Unknown Number Of Hidden States
12/01/2023	Irini Moustaki	London School of Economics and Political Science	Some New Developments On Pairwise Likelihood Estimation & Testing In Latent Variable Models

For announcements and WebEx live streaming links, please contact Tracy Burke (tracy.burke@uconn.edu).

— Contributed by Xiaojing Wang (Associate Professor of Statistics at UConn); Edited by Yuwen Gu.

Leadership & The 2023 Election

Changes to the executive appointments since January 1, 2023 are listed as follows.

- ✧ Alex Young from Harvard University has been appointed as the Vice President for Education.
- ✧ Dooti Roy from Boehringer Ingelheim and Gregory Vaughan from Bentley University have been appointed as the co-Vice Presidents (co-VPs) for Strategies & Development.

We would also like to take this opportunity to thank executives who have concluded their terms for their great service to NESS and to the statistical and scientific communities:

- ✧ Naitee Ting from Boehringer Ingelheim
- ✧ Nathan Lally from Hartford Steam Boilers

NESS Membership

NESS is offering 50% discount to K-12 educators. The current membership fee structure is as follows:

- ✧ Student membership: free
- ✧ Regular membership: \$30 per year
- ✧ Life membership: \$600
- ✧ K-12 educator: 50% discount on regular membership (\$15 per year) and life membership (\$300)

✧ Joint membership with the Institute of Mathematical Statistics (IMS): \$109 per year

To become a NESS member, please register through our website at <https://nestat.org/php/member/#signup> or mail in the attached registration form.

To make a donation, please visit <https://nestat.org/donation/>. Your donation will help to promote the growth and expansion of statistical science in the New England area and beyond.

We sincerely invite you to join NESS. Without the support from devoted members, the establishment and the rapid growth of our young society would not have been possible.

Call for Contribution to the Newsletter

Members are invited to submit contributions to the NESS Newsletter which will be published subject to the approval of the editor. Contributions can be of any form relevant to the interests of the society. Please contact Yuwen Gu at yuwen.gu@uconn.edu.



NESS

NEW ENGLAND STATISTICS SYMPOSIUM SINCE 1987 & NEW ENGLAND STATISTICAL SOCIETY SINCE 2017

New England Statistical Society

Membership Registration Form

Last Name:

First Name:

Middle Name:

Membership Type: Student ☐ Regular ☐ Life ☐ NESS/IMS ☐ K-12 Educator ☐

If Student Members, Expected Graduation Year:

Email Address:

Phone Number:

Employer:

Address Line 1:

Address Line 2:

County/City:

State/Province:

Zip Code:

Country:

Signature & Date

- *Student Membership*: free
- *Regular membership*: \$30 per year
- *Life membership*: \$600
- *K-12 educator*: 50% discount on regular membership (\$15 per year) and life membership (\$300)
- *Joint membership with the Institute of Mathematical Statistics (IMS)*: \$109 per year

Please send the form and a check to:

New England Statistical Society (Attn: Xiaojing Wang)

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