

BULLETIN

July 2023

vumc.org/biostatistics

Introducing the

Vanderbilt Biostatistics Data Coordinating Center (VBDCC)



We are pleased to announce the creation of the **Vanderbilt Biostatistics Data Coordinating Center (VBDCC)**, a biostatistical and data coordination resource for biomedical research of all types. It will provide scientific and technological support to clients across the world through its Design & Analysis, Data Management, and Tool Development Units.

Since the founding of our department twenty years ago, its biostatisticians, analysts, and developers have cultivated extensive collaborative partnerships with existing resources and business units at Vanderbilt University and Vanderbilt University Medical Center, including the Vanderbilt Institute for Clinical and Translational Research (VICTR), Vanderbilt-Ingram Cancer Center (VICC), and Vanderbilt Memory and Alzheimer's Center (VMAC), resulting in hundreds of publications, presentations, and packages. VBDCC personnel also are accustomed to working with funding and regulatory agencies such as the National Institutes of Health (NIH), Patient-Centered Outcomes Research Institute (PCORI), and US Food and Drug Administration (FDA). The VBDCC is thus well placed to offer a comprehensive pipeline for biostatistical and operational support of cutting-edge research and development.

To learn more, browse [the VBDCC webpages](#). Contact vbdcc@vumc.org to initiate discussions of collaboration and obtain price quotes.

Follow us between bulletin issues via our department [blog](#), our grad program [News page](#), and on Twitter ([@vandy_biostat](#)), Instagram ([@vandy_biostat](#)), and Mastodon ([@VUMCbiostat@fosstodon.org](#)).

Center for Quantitative Sciences Summer Institute

Last call for registration!

Enrollment for “Big Data in Biomedical Research” and “Introduction to Causal Inference” closes July 10.

Sign up at
vumc.org/cqs/cqs-summer-institute



Short Course: From R Markdown to Quarto

[Mine Çetinkaya-Rundel](#), Duke University and [RStudio](#)

Hosted by the Middle Tennessee chapter of the ASA

Friday, October 20, 9:30 am–5:30 pm CDT

Quarto is an open-source scientific and technical publishing system that offers multilingual programming language support to create dynamic and static documents, books, presentations, blogs, and other online resources. Learn how to apply your reproducible authoring skills to the Quarto format and use new tools and workflows in RStudio.

A link will be posted on our homepage in mid-July when registration opens. There will be a discount for ASA members—visit amstat.org/membership to join the association, and the ASA [Chapters](#) page to join the local community, whose leaders include Simon Vandekar, Robert Johnson, Rameela Raman, and Amber Hackstadt.

Free webinars

[Bryan Shepherd](#)

“Multi-wave Validation Sampling to Improve Estimates Derived from Electronic Health Record Data”

Offered by the FDA's [Sentinel Innovation Center](#)

Tuesday, July 11

11 am–noon CDT

Register via [the webform](#)

[Bradley Malin](#)

“Modeling, Measuring, and Mitigating Privacy Risks in Large Biomedical Datasets”

Free webinar

Hosted by the American Statistical Association Privacy and Confidentiality Committee

Monday, July 24

11 am–noon CDT

Register via [the course flyer](#)

Our 20th anniversary celebration on September 29 will include a **poster session**. Details will be posted [on our website](#) soon.

Dates and other details subject to change. Check our website for updates and additions.

20th Anniversary Symposium

Free and
open to
the public!

ETHICAL HEALTHCARE THROUGH INNOVATIONS IN BIOSTATISTICS

Advancing Informative Analysis,
Data Coordination, and
Health Equity

For full
details:



LEFT: Faculty party,
2004.
ABOVE: Department
retreat, 2022. Photo:
Susan Urmy/VUMC.

In-person at Langford Auditorium and
livestreamed

SEPT 29, 2023 | 8:30AM-12:30PM

At press time, the slate of prominent biostatisticians scheduled to speak at this event includes department chair [Yu Shyr](#), CRAB chief of strategic alliances [John Crowley](#), University of Washington professor [Patrick Heagerty](#), and Harvard University professor [Xihong Lin](#).

Visit vumc.org/biostatistics/symposium09292023 for additional confirmations and updates.

Appointments and Promotions

Visit [Our People](#) for more about these individuals. Appointments and promotions taking effect after July 1 will be reported in future issues.



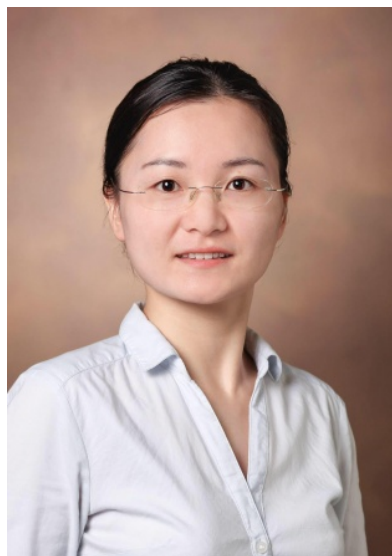
Robert Greevy
Professor



Cassandra "Cassie" Hennessy
Senior Biostatistician



Hsi-Nien "Jubilee" Tan
Senior Application Developer



Jing Yang
Research Assistant Professor



Ryan Moore
Senior Biostatistician

Photo: Donn Jones/VUMC

*Interested in employment at Vanderbilt University Medical Center?
See our [Careers](#) page for current postings.*

Equity, Diversity and Inclusion

Mario Davidson appointed associate vice chair

Associate professor Mario Davidson has been appointed associate vice chair of equity, diversity, and inclusion (EDI) for the Department of Biostatistics. Winner of the 2022 Geoffrey Chazen Award for Innovation in Medical Education and member of the Academy for Excellence in Education board, Davidson will assist vice chair of EDI Leena Choi with promoting awareness and fulfillment of EDI initiatives and standards across the department.

The Vanderbilt Biostatistics Summer Internship Program for Underrepresented Undergraduates hosted its second cohort from May 8 through June 16, with participants Tracy Brown (Howard University), Youssef Botros (Middle Tennessee State University), Terrence Smith (Talladega College), and Karly Miller and LaShawnda Stevens (Tennessee State University). The paid internships culminated in scientific posters and professional presentations to a full room on the final day of the program. Each set of slides was followed by a lively Q&A session, with department faculty, staff, and students all contributing new insights and queries to the discussions.



Karly Miller summarizing her research project

Read more about the 2023 summer interns at [their cohort page](#).

Dissertations Defended



Valerie Welty

March 8

Advisor: Jeffrey Blume

Dissertation: On False Discovery Rates for Second-Generation p-Values



Chiara Di Gravio

June 9

Advisors: Jonathan Schildcrout and Ran Tao

Dissertation: Design and Analysis Methods for Modern Biomedical Studies with Longitudinal Outcomes

Student Awards and Honors

Kaidi Kang - Student Research Award winner at the 36th New England Statistics Symposium, for “Double Anchoring Events Based Sigmoidal Mixed Model for Alzheimer’s Disease Progression Modeling” (co-authored by Dandan Liu and Panpan Zhang)

Jamie Joseph - Vanderbilt University Graduate Leadership Anchor Award

2023–2024 Biostatistics Graduate Student Association Officers

President: Marisa Blackman & Vice President: Ruby Xiong & Treasurer: Elisa Yazdani
Secretary: Shengxin Tu & First-year liaisons/outreach chairs: Yeji Ko, Lisa Levoir, Lan Shi

Rameela Raman “gave amazing and constructive feedback while making sure to acknowledge everything I had done right, and she emphasized communication and collaboration skills I have found valuable in all other projects I have worked on since first year.... Rameela is my role model in this department, the field of biostatistics, and in life.” - Jamie Joseph in the May AmStatNews compilation of thank-you notes to mentors

Funding Highlights - National Institutes of Health

“Outcome dependent sampling of longitudinal data: Design and analysis” - R01 renewed. Principal Investigator: Jonathan Schildcrout. Co-investigators: Bryan Shepherd and Ran Tao. Numerical analyst: Shawn Garbett

“Statistical methods and designs for correlated outcome and covariate errors in studies of HIV/AIDS” - R01 renewed. Principal Investigator: Bryan Shepherd. Co-investigators: Gustavo Amorim and Ran Tao

“Mentoring in cholinergic regulation of vascular oxidation” - K24 awarded. Principal Investigator: Cyndya Shibao, with department support

“Harnessing big data to arrest the HIV/HCV/opioid syndemic in the rural and urban South” - R01 awarded. Principal Investigator: Peter Rebeiro

“Brazil Regional Prospective Observational Research in Tuberculosis network (RePORT-Brazil) - U01 awarded. Principal Investigators: Timothy Sterling and Bruno Andrade. Biostatistician: Gustavo Amorim. See also the \$19.5 million NIH grant to Rutgers for RePORT International.



LEFT: Jonathan Schildcrout and Joshua Denny in 2012. Schildcrout is now vice chair of research and professor of biostatistics. Denny is CEO of the National Institutes of Health's *All of Us* Research Program, working to create a diverse research community of one million people to facilitate thousands of studies on health and disease.

Photo: Anne Rayner / Vanderbilt University

**The future of
health begins
with you.**

All of Us
RESEARCH PROGRAM



Faculty Awards and Honors

Amir Asiaee - Placed second in the [Bias Detection Tools in Health Care Challenge](#), hosted by the National Center for Advancing Translational Sciences with “MLK Fairness,” co-authored with Kaveh Aryanpoo

Amber Hackstadt and Andrew Spieker - Completed the [Fleming Society](#) mentorship program as members of the inaugural cohort

Paul Harris - Appointed [Vice President for Research Informatics](#), Vanderbilt University Medical Center

Jackie Pennings - Received the Vanderbilt Orthopaedic Surgery Annual Research Award

Chris Slaughter - Received the [Vanderbilt Epidemiology Teaching Award](#)

Derek Smith - Elected to the International Society of Oral Oncology board of directors



Hackstadt poses a question during intern presentations.

Recent Presentations

(a selection - see our [blog](#) and [previous bulletins](#) for more listings)

Yaomin Xu, "EHR (Electronic Health Record): Potential Opportunities and Roadblocks for Machine Learning" - panelist, [Analytics and Machine-Learning for Maternal-Health Interventions](#) annual meeting, Chapel Hill, North Carolina - April

Shawn Garbett, "What They Didn't Teach You About Decision Modeling" - co-instructor, [Society for Medical Decision Making 18th Biennial European Conference](#), Berlin - May

Yu Shyr, "The Role of Biostatistics in an Increasingly Big Data/Data Science World" - panelist, [National Institute of Statistical Sciences webinar](#) - May

Jiangmei Ruby Xiong, Simon Vandekar, Kaidi Kang, Panpan Zhang, and Siyuan Ma were presenters and organizers at the [2023 Statistical Methods in Imaging Conference](#) in Minneapolis - May (more details on our blog)

Bryan Shepherd, "The Vanderbilt-Nigeria Biostatistics Training Program" - speaker, [CFAR \(Center for AIDS Research\) Symposium on Statistics and Data Science in HIV](#), Providence, June

See our [Upcoming Presentations](#) page for news about talks, posters, and workshops scheduled for Boston, Montreal, Tokyo, Toronto, Singapore, Berlin, and more.

Recent Presentations (continued)

Yu Shyr, “Future of Investigational Medicine and Smart Data—What We Learned from ChatGPT” - speaker, Taiwan Bureau of Foreign Trade Health+ Conference: Redefining the Digitalization of Future Healthcare, Taipei - June

Frank Harrell, “Statistical Concepts We Forget to Teach” - speaker, Icahn School of Medicine at Mount Sinai - June

Bryan Shepherd, “Statistical Methods and Designs for Addressing Data Quality in Studies of HIV/AIDS” - speaker, University of Utah - June

Peter Rebeiro, “The Influence of Geography, Context, and Policy on HIV & TB Outcomes” - panelist, Vanderbilt Basic Sciences Queer Scholars Symposium - June

Also in June: Jinyuan Liu and Panpan Zhang were invited speakers and session organizers at the International Chinese Statistical Association (ICSA) Applied Statistics Symposium in Ann Arbor and the 2023 WNAR/IMS (Western North American Region of the International Biometric Society/Institute of Mathematical Statistics) meeting in Anchorage. Panpan Zhang, Siyuan Ma, and Kaidi Kang participated in the New England Statistics Symposium in Boston. Yu Shyr served as invited faculty and on the program committee of the EORTC-ESMO-AACR Workshop on Methods in Clinical Cancer Research in Sint Michielsgestel.

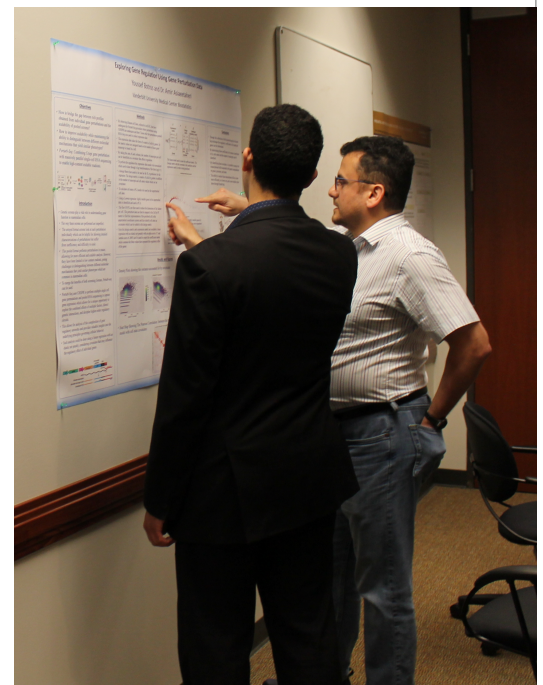
Publications

(A selection: **bold** denotes department members; **green** denotes current students)

Cronin RM, **Feng X** (co-first author), Sulieman L, Mapes B, **Garbett S**, Able A, Hale R, Couper MP, Sansbury H, Ahmedani B, **Chen Q**. Importance of missingness in baseline variables: A case study of the *All of Us* Research Program. *PLoS ONE* 18(5): e0285848. doi.org/10.1371/journal.pone.0285848

Di Gravio C, **Tao R**, **Schildcrout JS**. Design and analysis of two-phase studies with multivariate longitudinal data. *Biometrics*. 2023 Jun;79(2):1420-1432. doi: 10.1111/biom.13616. Epub 2022 Jan 28. PMID: 35014029; PMCID: PMC9392467.

Smith JR, Parl FF, **Dupont WD** (equal contributor and corresponding author). Mutation burden independently predicts survival in the Pan-Cancer Atlas. *JCO Precision Oncology* 7:e2200571. doi: [10.1200/PO.22.00571](https://doi.org/10.1200/PO.22.00571). PMID: 37276492. (Featured in *VUMC Reporter* on June 5.)



Intern Youssef Botros and mentor Amir Asiaee revisit a section of their poster after Botros's presentation.

Featured Research

VUMC-led trial shows two investigational drugs are ineffective for treating severe COVID-19 (*VUMC Reporter*, April 11; *JAMA* paper co-authored by Matt Shotwell)

Study finds early RSV infection linked to significantly increased risk of asthma in children (*VUMC Reporter*, April 24; *Lancet* paper co-authored by Tebeb Gebretsadik and Bill Dupont; team pictured at right)

VUMC to coordinate national effort to reduce ARDS, pneumonia, sepsis (*VUMC Reporter*, May 4; consortium leaders include Frank Harrell, Matt Shotwell, Yaomin Xu, and Paul Harris)



Christian Rosas-Salazar, James Chappell, Tina Hastert, **William Dupont**, and **Tebeb Gebretsadik**.
Photo: Donn Jones/Vanderbilt University Medical Center

Diabetes drugs associated with fewer adverse cardiac events in older veterans (*VUMC Reporter*, May 8; *Annals of Internal Medicine* paper co-authored by Amber Hackstadt and Robert Greevy)

Combined genetic test for three common hereditary conditions is cost effective for young adults (*GenomeWeb*, May 9; *Annals of Internal Medicine* paper co-authored by Jonathan Schildcrout and Shawn Garbett)

Ketamine lowers pressure in pediatric TBI (traumatic brain injury) (*Discoveries in Medicine*, June 15; *Critical Care Medicine* paper co-authored by Meng Xu and Chris Slaughter)

Study shows video laryngoscope increases successful intubation on first attempt (*VUMC Reporter*, June 16; *New England Journal of Medicine* paper co-authored by Brant Imhoff and Li Wang)

Study identifies key regulator of melanoma development (*VUMC Reporter*, June 29; *Molecular Cancer* paper co-authored by Sheau-Chiann Chen, Dan Ayers, Qi Liu, and Xiao Liu)

To view past issues, visit [our online archive](#).

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