VANDERBILT V UNIVERSITY

MEDICAL CENTER

BIOSTATISTICS BULLETIN

Upcoming events and programs

For a more extensive list, visit our Events and Groups guide.

Department chair Yu Shyr will deliver "Integration of complex data" in the "Decoding Cancer Health Disparities" plenary session at the American Association for Cancer Research (AACR) Annual Meeting on April 11, 2022.

Dr. Shyr is a director of the BMSF-AACR Design and Implementation of Clinical Trials program for groups underrepresented in medicine. See page 4.

On May 25–27, our department will host the 2022 Statistical Methods in Imaging (SMI) conference for the ASA section on this area. It will be a hybrid (online and on-site) gathering. The organizing chair is assistant professor Simon Vandekar. Stay connected with us for details as they are confirmed. Session proposals are due by January 7; see the SMI webpage for requirements.

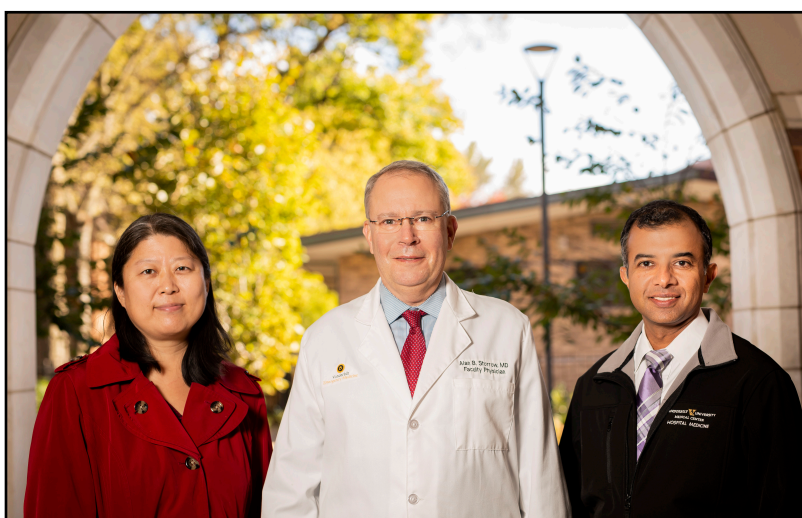# Dandan Liu wins R01 grant to test STRATIFY implementation

Photo: Susan Urmy/VUMC

Associate professor Dandan Liu (left) is one of the three principal investigators leading "Tailored dissemination and implementation of emergency care clinical decision support to improve emergency department disposition," in which the STRATIFY outcome-prediction tool will aim to reduce unnecessary hospitalizations of patients with acute heart failure (AHF). The other PIs are Alan Storrow (center), associate professor of emergency medicine, and Sunil Kripalani (right), whose roles at Vanderbilt University Medical Center include director of the Center for Clinical Quality and Implementation Research. The grant from the National Heart, Lung, and Blood Institute will provide three million dollars of support across four years; treating AHF currently costs US hospitals more than $30 billion each year. Read more about this in the *VUMC Reporter*.

Questions? News? Send information and images to Peg Duthie, communications manager, for potential publication here and/or online, and follow us on Twitter between issues for the latest announcements.

Events and programs

useR! 2022, the international conference on the R programming language used in so many statistical computing apps (including some of the tools developed by department and Center for Quantitative Sciences members), will take place on our campus and online on June 20–23. The program committee will start reviewing proposals for tutorials and presentations in December, and registration will open in March.

We're also looking forward to welcoming colleagues to Nashville for ENAR 2023 (March 19–22) and JSM 2025 (August 2–7), in addition to our ongoing collaborations (both on-site and online) and series. The spring 2022 lineup for our virtual Wednesday seminars includes Wei Pan (Minnesota), Aubrey Clayton (Harvard), Armin Schwartzman (UC San Diego), Arman Oganisian (Brown), Amy Willis (Washington), and Leslie McClure (Drexel). We hope you'll join us!

Studying COVID-19

Throughout the pandemic, department members have provided leadership and expertise for numerous initiatives in response to the challenges presented by the coronavirus. Here's a glimpse of some projects with Vanderbilt University Medical Center (VUMC) biostatisticians on the team:

VUMC houses the Data Coordinating Center for the national ACTIV-6 drug repurposing trials. Professor Christopher Lindsell heads the DCC as its principal investigator, with professor Frank Harrell and assistant professor Thomas Stewart among its co-investigators. Read more about this study in the *VUMC Reporter*.

Principal biostatistician Hank Domenico, biostatistician Ryan Moore, and senior associate Daniel Byrne built the predictive model for a **large prospective study of children with COVID-19**. The findings were published in *BMC Pediatrics* and highlighted in the *VUMC Reporter*.

From January 2020 through June 2021, department members published **more than 600** peer-reviewed papers, with faculty members supported by **more than 200** grants sponsored by the National Institutes of Health.

Professor Chris Lindsell, principal biostatistician <u>Kim Hart</u>, and senior associate <u>Yuwei Zhu</u> co-authored "<u>Association between mRNA vaccination and COVID-19 hospitalization and disease severity</u>" (*JAMA*).

Associate professor <u>Benjamin French</u> collaborated with endocrinology and diabetes colleagues at VUMC on "<u>The rapid transition to telemedicine and its effect on access to care for patients with Type 1 diabetes during the COVID-19 pandemic</u>" (*Diabetes Care*).

Biostatistician <u>Yue Gao</u> and associate professor Dandan Liu (see page 1) worked with ENT and radiation oncology colleagues at VUMC to examine the <u>impact of COVID-19 on treating head and neck cancer</u> (*American Journal of Otolaryngology*).

Chair Yu Shyr is part of an international team <u>identifying knowledge gaps</u> in the study of lung cancer and SARS-CoV-2 (*Journal of Thoracic Oncology*).

Associate professors Robert Greevy and Michael Matheny were among investigators comparing the impact of <u>COVID-19 vs. influenza on kidney patients</u> (*Kidney International*). Dr. Matheny also contributed to "<u>COVID-19 in patients with autoimmune diseases: Characteristics and outcomes in a multinational network of cohorts across three countries</u>" (*Rheumatology*) and "<u>Characteristics and Outcomes of Over 300,000 Patients with COVID-19 and History of Cancer in the United States and Spain</u>" (*Cancer Epidemiology, Biomarkers & Prevention*).

Professor Leena Choi has been working with VUMC colleagues in biomedical informatics, allergy/pulmonary/critical care, pathology/microbiology/immunology, infectious diseases, and pharmacology to <u>identify repurposable drugs</u> in the electronic health record (*Clinical Pharmacology & Therapeutics*).

This is not a comprehensive list. For more Department of Biostatistics news, follow our <u>blog</u> and <u>Twitter</u> feeds.

Qi Liu selected for leadership program

Associate professor Qi Liu will be participating in the 2022 Mid-Career Leadership Development Program run by Vanderbilt University School of Medicine. Admission to the MLDP is competitive, and this is the second consecutive year that a Biostatistics faculty member has been chosen: associate professor Fei Ye is a member of the 2021 cohort.

Photo: Joe Howell/Vanderbilt University

Rameela Raman wins research grants

One of Vanderbilt's inaugural Health Equity Research Grants will be supporting work by associate professor Rameela Raman, whose team is looking closely at cognitive tests in relation to ICU diagnoses and treatment. Dr. Raman also recently received a Southeastern Conference Faculty Travel Grant for her collaboration with University of Alabama researchers.

Shilin Zhao receives 2021–22 Faculty Development Award

Assistant professor Shilin Zhao has been named the winner of our department's annual Faculty Development Award, which provides pilot grants for projects that are likely to advance the investigator's career, lead to future funded research, and result in greater department visibility both within and outside Vanderbilt. Dr. Zhao's project is "Improving cancer histopathological deep learning models by integrating omics data." Past winners include Dandan Liu, Cindy Chen, Matt Shotwell, Yaomin Xu, and Fei Ye. Read about their projects via our Awards page.

On November 4, professor Frank Harrell delivered "Modernizing Clinical Trial Design & Analysis to Improve Efficiency and Flexibility" as the keynote lecture for the 2021 Vanderbilt Translational Research Forum, which was hosted by Edge for Scholars, Vanderbilt's Master of Public Health (MPH) and Master of Science in Clinical Investigation (MSCI) programs, and the Vanderbilt Institute for Clinical and Translational Research (VICTR). The presentation can be viewed on YouTube.

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To run an effective clinical trial, the trialist must be able to build the trust needed to engage effectively with patients and with the wider community, to enroll diverse trial participants. To build this trust, in turn, the trialist must have clear understanding of clinical trial fundamentals, to explain how a clinical trial can deliver reliable, reproducible results that lead to improvements in medical care. —Yu Shyr

On November 6–11, the AACR-BMSF Design and Implementation of Clinical Trials Workshop provided an intensive introduction on this research area to early-stage investigators from under-represented populations. Dr. Shyr serves as one of the program directors, and assistant professor Mario Davidson interacted with the participants as an invited faculty member.

We're hiring!

Visit our Careers page for open positions. VUMC employees may be eligible for bonuses of up to $5,000 per referral.

The *VUMC Biostatistics Bulletin* is published six times a year by the Department of Biostatistics. To receive future issues via email, opt in via our homepage or scan this QR code.