Administration Releases FY23 Budget Request

as Congress Finalizes FY22 Budget

ALSO:

JEDI Corner: Statistics Education and Reconsidering the Status Quo

Johns Hopkins Student Awarded ASA/AAAS Mass Media Fellowship

JSM 2022
WASHINGTON, DC

STATISTICS: A FOUNDATION FOR INNOVATION

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June 1–30, 2022
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Housing Deadline

AUGUST 6–11

2022 JOINT STATISTICAL MEETINGS

WASHINGTON, DC

ww2/amstat.org/meetings/jsm/2022

AMSTAT NEWS

JUNE 2022 • ISSUE #540

Amstat News welcomes news items and letters from readers on matters of interest to the association and the profession. Address correspondence to Managing Editor, *Amstat News,* American Statistical Association, 732 North Washington Street, Alexandria VA 22314-1943 USA, or email *amstat@amstat.org*. Items must be received by the first day of the preceding month to ensure appearance in the next issue (for example, June 1 for the July issue). Material can be sent as a Microsoft Word document, PDF, or within an email. Articles will be edited for space. Accompanying artwork will be accepted in graphics file formats only (.jpg, etc.), minimum 300 dpi. No material in WordPerfect will be accepted.

The American Statistical Association is the world's largest community of statisticians. The ASA supports excellence in the development, application, and dissemination of statistical science through meetings, publications, membership services, education, accreditation, and advocacy. Our members serve in industry, government, and academia in more than 90 countries, advancing research and promoting sound statistical practice to inform public policy and improve human welfare.

features

columns

This column is written for those interested in learning about the world of Data for Good, where statistical analysis is dedicated to good causes that benefit our lives, our communities, and our world. If you would like to know more or have ideas for articles, contact David Corliss at *davidjcorliss@peace-work.org*.

STAT*tr@k* is a column in *Amstat News* and a website geared toward people who are in a statistics program, recently graduated from a statistics program, or recently entered the job world. To read more articles like this one, visit the website at *http://stattrak.amstat.org*. If you have suggestions for future articles, or would like to submit an article, please email Megan Murphy, *Amstat News* managing editor, at *megan@amstat.org*.

Help *Amstat News* Recognize Academic Departments for JEDI Efforts

The ASA would like to **spotlight statistics, biostatistics, and data science departments** that are leading the way in supporting students who have been historically underserved. Recommend a statistics, biostatistics, or data science department to be spotlighted in *Amstat News* for its exemplary justice, equity, diversity, and inclusion (JEDI) efforts using this form: *https://form. jotform.com/zzlalo/departmental-jedi-nomination*s.

We are also considering a companion Q&A on how statistics, biostatistics, and data science departments could improve their recruitment and support of under-represented minority students or students from under-represented backgrounds. Please use the same form to make recommendations for such a Q&A.
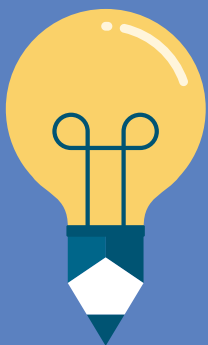
NISS Writing Workshop at JSM

June 30 is the deadline to register for the NISS Writing Workshop at JSM. This workshop provides instruction for junior researchers writing journal articles and grant proposals. To register, answer all the questions on the pre-registration webform at *www.niss.org/form/2022-niss-writing-workshop-pre-registration-information.*

The **ASA Biopharmaceutical Section Regulatory-Industry Statistics Workshop registration opens June 15.** Each year, the conference lasts three days, with invited sessions co-chaired by statisticians from industry, academia, and the FDA. Short courses on related topics are offered the first day of the workshop. Students, don't miss the opportunity to apply for a travel grant. Visit *ww2.amstat.org/ meetings/biop/2022/index.cfm* to learn more and register.

member news

Michael Hudgens and Rajan Patel Honored • Page 28

From left: Michael Hudgens, Mike Kutner, Rajan Patel, and Rob Krafty

SOCIAL CHATTER

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NEW

This month's "Top 10" is the "Top Ten **Bad Statistics Puns**."
Written by Ron Wasserstein
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Wasserstein

The Emerging Role for Statisticians and Data Scientists in Community Analytics

Katherine Ensor

At the end of April, I attended the Mellichamp Environmental Justice Forum at the University of California, Santa Barbara. This two-day interdisciplinary event was incredibly engaging and informative. I also had the opportunity to meet with colleagues in the department of statistics and applied probability and was delighted to learn there are approximately 1,700 undergraduate majors in their statistics, data science, and actuarial science programs. Wow!

I was one of the keynote speakers because of my work in community analytics. As we head into the hot summer days (Remember, I am in Houston!) and prepare for JSM, I thought it would be a good time to discuss the general area of community analytics and the role the ASA community of statistics professionals might play in its growth.

Let me begin my story with my working definition of community analytics: bringing the best of statistical science—in collaboration with municipal governments, universities, local businesses, NGOs, and community organizations—to improve lives through a better understanding of our communities and how we live, work, learn, and play.

I found my way to this topic through environmental science and a rigorous effort to understand *and mitigate* the impact of the complex Houston air quality profile on human health. This work put me in strong connection with municipal leaders who were interested in creating a vibrant data- and analytic-rich city infrastructure to proactively address the challenges faced by Houstonians.

My key collaborator, Loren Hopkins, holds a joint position between Rice University and the City of Houston Health Department. Our work with air quality in Houston has had many real endpoints, but one of particular note is an alert system managed through the Houston Health Department that identifies those days when asthmatic patients need to be on high alert to protect their health. Working with officials in the Houston Independent School District, we were able to dramatically improve asthma management for the city's children.

It is extremely rewarding when one's work, driven by the best science, has a strong human impact. I was hooked! So much so that I joined Hopkins again to establish the City of Houston wastewater epidemiology program. This program was a key source of information for our community and government leaders throughout the pandemic, and it continues to have an impact.

Houston is not unique in its interest in establishing a data- and analytic-rich culture. State and municipal governments are adding positions comparable to chief data officers to help with the transition to a data-informed environment. For example, Jeanne Holm, deputy mayor for budget and innovation for the City of Los Angeles, brings forward this vision, as well.

Stepping up to the national level, it is important to note the role of the US Centers for Disease Control and Prevention in promoting community health analytics, both in their leadership and as a source of funding for local partnerships. Karen DeSalvo, chief health officer for Google, served as the national coordinator for health information technology and assistant secretary for health in the Obama administration. She co-authored an article for CDC titled "Public Health 3.0: A Call to Action for Public Health to Meet the Challenges of the 21st Century" that promotes a "new Public Health 3.0 model in which leaders serve as Chief Health Strategists, partnering across

What can we do to garner strong membership interest in municipal governments and NGOs?

multiple sectors and leveraging data and resources to address social, environmental, and economic conditions that affect health and health equity."

Members of the ASA community are also leading important efforts. Stephanie Shipp and former ASA President Sallie Keller have promoted a similar vision for rural America through the social and decision analytics division within the University of Virginia Biocomplexity Institute. And while at the Urban Institute, 2021 ASA President Rob Santos also advanced these ideals.

Many centers and institutes have been established that promote university/municipal government partnerships, such as the Kinder Institute at Rice. Through the latter, I led the development of the Urban Data Platform, a data repository and secure computing environment serving as the leading source of curated and published geo-temporal-referenced information for the greater Houston

area. I like to think of the platform as a "one-stop shop" for curated, research-ready data to address community-based questions.

From a university perspective, partnering with local governments on shared challenges is not simple. An excellent set of summary points is put forward in an opinion piece, "4 Steps to Successful City-University Partnerships," highlighting the partnership between Austin, Texas, and the University of Texas. Readers might also appreciate comments by Henry Webber in "Building Effective City-University Partnerships: Lessons from the Heartland." Many of our students move to front-line positions in community analytics, and society benefits greatly from these partnerships.

The National Academies of Science, Engineering, and Medicine have advanced the topic of community analytics. For example, I was part of developing the Frontiers of Big Data, Modeling, and Simulation in Urban Sustainability Workshop and follow-up webinars by leaders in community analytics. The National Academies will continue this conversation over the summer with a series of workshops examining multi-endpoint decision-making for sustainable cities (*https://bit.ly/3yHMRDQ*).

Within the ASA statistics community, we have many members who address issues related to effective partnerships. The 2021 ASA Statistical Partnerships

Among Academe, Industry, and Government Award went to the CMU/CDC lead group DELPHI: COVIDcast project for commitment to the theory and practice of epidemic tracking and forecasting through building and modeling unique health data streams. The most recent award went to Harvard and Partners In Health.

What can we do to garner strong membership interest in municipal governments and NGOs? It would be fantastic if the ASA served as the professional home for this emerging group of statisticians and data scientists. There is the Health Policy Statistics Section and recent efforts in Data for Good, but can we do more?

It might simply be opening our doors and showing the strong value proposition of the ASA. I see value in an ASA professional development workshop on how to get started in community analytics and building collaborations to support where we each live, work, learn, and play.

Please share your ideas with me. I welcome input from chapter and section members who would like to expand the Big Tent for Statistics and Data Science to include more statisticians and data scientists on the front lines of improving our communities.

Kathy B. Ensor

Highlights of the April 8–9, 2022, ASA Board of Directors Meeting

Ron Wasserstein, Executive Director and Board Secretary

President Kathy Ensor called to order the first meeting of the ASA Board of Directors for 2022 on April 8. The meeting was conducted in hybrid format—many board members were in Alexandria at the office while others joined via videoconference over two days. The highlights of the board meeting follow.

Actions

The board …

- Accepted the audit of the ASA's finances for 2021, thanking the staff for another clean audit.

- Approved a recommendation to expand the number of at-large members of the Committee on Publications to six, with appointments with staggered terms to be made as soon as possible.

- Approved an update of the joint ASA/National Council of Teachers of Mathematics position statement on preparation of statistics and data science teachers at the PK–12 level.

- Approved the creation of the David Cox Foundations of Statistics Award.

- Approved sending out a request for proposals to consulting firms that specialize in assisting organizations with diversity, equity, and inclusion efforts.

Reports and Discussions

- Stephen Penneck, president of the International Statistical Institute, updated the board on the activities of ISI. In 2023, the World Statistical Congress and Joint Statistical Meetings will be held within three weeks and 280 miles of each other (Ottawa

2022 Board of Directors

Kathy Ensor, President

Dionne Price, President-Elect

Scarlett Bellamy, Third-Year Vice President (completing the term of Dionne Price)

Matilde Sanchez-Kam, Second-Year Vice President

Nick Horton, First-Year Vice President

Ji-Hyun Lee, Third-Year Council of Chapters Representative

Alexandra Hanlon, Second-Year Council of Chapters Representative

Kendra Schmid, First-Year Council of Chapters Representative

Rebecca Hubbard, Third-Year Council of Sections Representative

Kate Calder, Second-Year Council of Sections Representative

Michelle Shardell, First-Year Council of Sections Representative

Alexandra Schmidt, International Representative

Bin Nan, Publications Representative

Ruixiao Lu, Treasurer

Ron Wasserstein, Executive Director and Board Secretary

and Toronto, respectively). The ASA and ISI will be mutually promoting both events.

- Associate Executive Director and Director of Operations Steve Porzio summarized the financials for 2021. The pandemic had a significant impact on revenue in 2021. The ASA is still healthy financially, but we continue to carefully evaluate programs and revenue.

- ASA Treasurer Ruixiao Lu reported on the ASA's investments. She reviewed the allocation of the ASA's nearly $21.5 million among various types of investments as of February 28 and the results of our investments over the past decade. She discussed market upturns and downturns in this context. Lu also updated the board on the activities of the Investments Committee, Budget Committee, and Audit Committee.

- David Manderscheid, recently appointed director of the Division of Mathematical Sciences of the National Science Foundation, updated the board on DMS activities and his goals for the division.

- Ensor updated the board on 2022 initiatives, including the launch of the Data Science and AI Committee, ASA involvement in ABET undergraduate data science accreditation, the National Data Mine project, and the continued development of the Leadership Institute.

- Adrian Coles and David Marker, co-chairs of the Antiracism Task Force, presented a summary of the task force report and recommendations. They highlighted key recommendations in the report and next steps. The board praised the report and thanked the task force for its efforts. ASA staff and the board will coordinate follow-up on the report recommendations.

- ASA Director of Science Policy Steve Pierson provided his regular report on the ASA's advocacy efforts. Pierson updated the board on science and statistical agency budgets, plans for JSM 2022 Hill Day, activities of the Count on Stats program, and a variety of other ongoing matters.

- ASA Executive Director Ron Wasserstein reviewed the status of follow-up on the recommendations from the ad hoc Committee on Increasing Diversity in Publications. All recommendations are being addressed either by staff or the Committee on Publications. Wasserstein highlighted a plan for reviewing journal policies and communications from a diversity, equity, and inclusion perspective.

- Last fall, the board appointed a working group chaired by Lu to begin a review of the membership and public awareness components of the ASA strategic plan. The working group sent its report to the board this winter. Lu led the board in a discussion about the group's observations to collect information and ideas for next steps in updating the strategic plan.

- Nick Horton and Mark Otto presented the annual report of the committees that comprise the Membership Council. Ensor noted the importance of these reports in keeping the board informed of committee activities and needs.

- The board discussed an idea for ASA involvement in an update to the 2002 AAUP document on proper methods for conducting salary equity studies. Wasserstein will reach out to AAUP to see if there is interest in updating the publication with ASA help.

- The board engaged in a structured discussion of ASA website policy to guide future revision to the website. Staff will bring recommendations to the board based on information developed during the discussion.

The board meets again on June 10 for its annual budget meeting. The next regular meeting of the board is August 5–6 in Washington, DC, immediately prior to JSM. ■

A Conversation with LGTBQ+ Advocacy Committee Chair **Deirdre Middleton**

Amanda Malloy, ASA Director of Development

Malloy

Middleton

"Pride Month is a time for everyone to not only imagine what a world without shame and LGBTQ+ discrimination would look like, but to build that world."

This was Deirdre Middleton's response to my question about why it is important to celebrate Pride Month. Middleton is chair of the LGTBQ+ Advocacy Committee and a survey research scientist at RTI. She went on to explain, "It is important to celebrate Pride Month because the LGBTQ+ community deserves joy. A major component of discrimination against LGBTQ+ people is the idea of shame—shame about identity, behaviors, and relationships. Pride is the opposite. It is an essential form of resistance, rebellion, and reimagining of what the world could look like without the burdens of discrimination."

Middleton took on the role of committee chair in January and has been working with a group of committee members to make the statistical community an inclusive environment and find ways to support LGTBQ+ data scientists and statisticians.

"We all do our best work when we have a sense of belonging within our professional worlds, and the committee hopes to foster that sense of belonging throughout the profession," says Middleton.

Committed to maintaining and building on what previous chairs Jack Miller and Jaishen You have accomplished, Middleton is grateful for the opportunity to help move the work of the committee forward.

"The committee's work is important because injustice and discrimination will not just disappear on their own; we must actually put in the effort to create an inclusive profession. This is not just important for LGBTQ+ persons, but for everyone who loves statistics and wants to see innovative thinking and progress in the field. This profession is harmed when discrimination drives away talent and passion, and our committee wants to do the opposite. We want to swing the doors open and say, 'Hey, if you love statistics, you belong here! This is a space where you can thrive!'" ■

Show Your Pride

Middleton says celebrating pride is for everyone who wants to participate, regardless of personal identity, and celebrating can take many forms:

- Honor, support, and bring joy to the LGBTQ+ people in your family or community (or yourself)
- Learn about the history of LGBTQ+ contributions to history
- Advocate for laws that protect LGBTQ+ rights, etc.
- Donate to the Pride Scholarship by visiting *ww2.amstat.org/giving*

Administration Releases FY23 Budget Request

as Congress Finalizes FY22 Budget

Steve Pierson, ASA Director of Science Policy

Congress wrapped up its funding for the federal government for fiscal year 2022 (FY22) in March 2022, the sixth month of the fiscal year. With the Biden administration releasing its FY23 within a few weeks, Congress had to almost immediately start the process again.

The National Institutes of Health and National Science Foundation both received 4 percent increases in FY22 over their FY21 levels, as shown in Table 1. Several statistical agencies also received 3–6 percent increases. The US Census Bureau's budget was raised 20 percent to $1.35 billion for last-stage operations of the 2020 Decennial Census and initial planning for the 2030 Decennial Census, among other initiatives. The Bureau of Justice Statistics' budget was cut 11 percent to $40 million.

Despite these encouraging increases for many statistical agencies, most have lost considerable purchasing power since FY09 (see *https://bit.ly/2VyD3dU*). The Bureau of Justice Statistics (-40 percent), Bureau of Labor Statistics (-16 percent), Bureau of Transportation Statistics (-26 percent), Energy Information Administration (-11 percent), Economic Research Service (-24 percent), and Statistics of Income Division (-13 percent since FY12) all saw double-digit percentage decreases (unless otherwise noted), as shown in the figures below. The National Center for Education Statistics has lost nearly 10 percent since FY09, 14 percent for the NCES statistics line (see Figure 2). The National Center for Health Statistics has lost 8 percent in purchasing power since FY09, 16 percent since FY10. Only the budgets for the Bureau of Economic Analysis and National Center for Science and Engineering Statistics have kept up with inflation (as measured by the GDP deflator).

President's FY23 Request

In the president's FY23 budget request, the second for the Biden administration, an increase of $4.3 billion (10 percent increase) is requested for the National Institutes of Health. $4 billion of that amount is to further the budget of the newly established Advanced Research Projects Agency for Health, which was funded for the first time in FY22 at $1 billion. The FY23 budget documents from the Department of Health and Human Services state the "NIH budget continues vital work to address the opioid crisis and end HIV" and "makes new
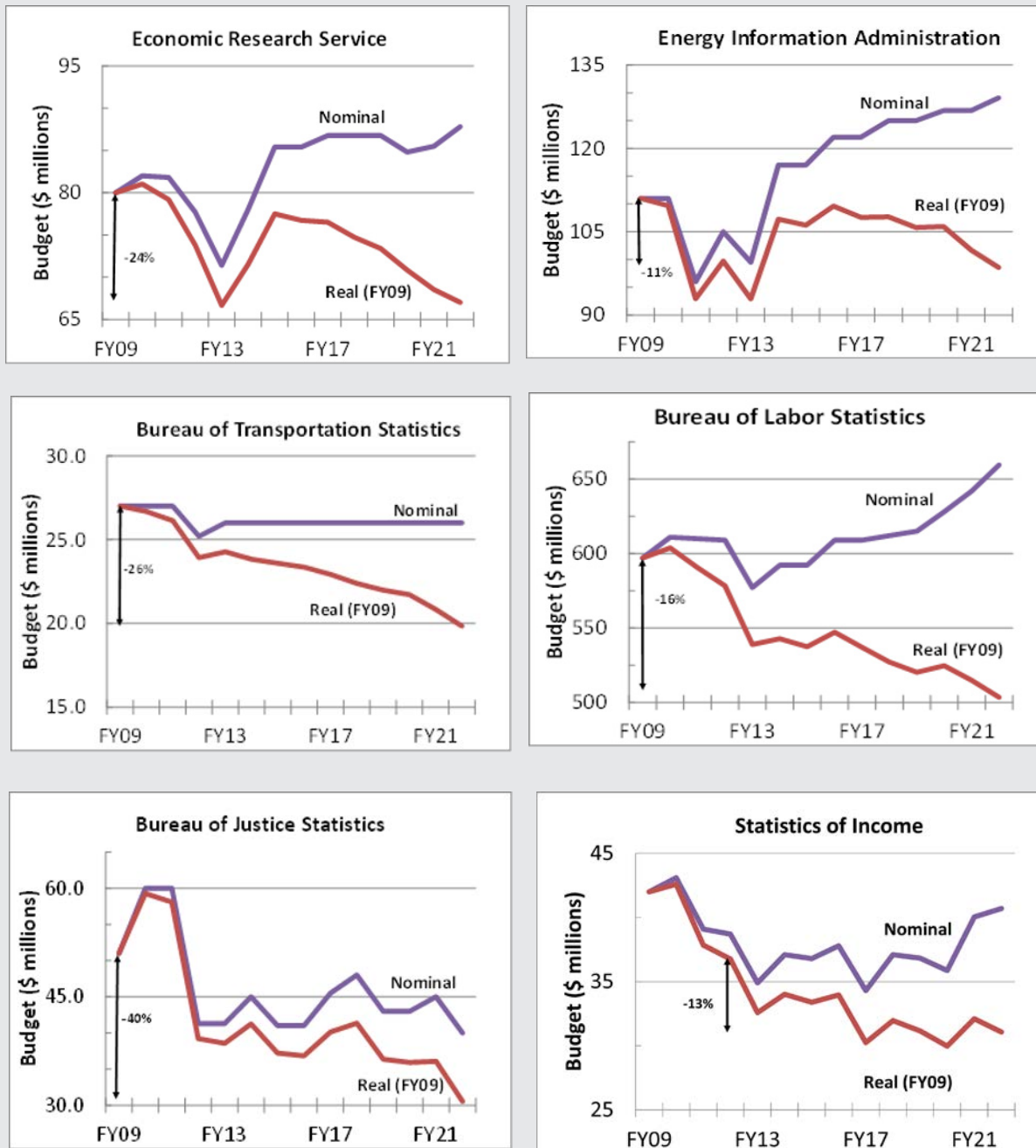
Figure 1: The budgets for the BJS, BLS, BTS, EIA, ERS, and SOI in nominal and inflation-adjusted (real) dollars since FY09. SOI's budget was restructured in FY12, making subsequent budget year comparisons to those of FY09–FY11 misleading.

investments in pandemic preparedness and nutrition research, establishes a Center for Sexual Orientation and Gender Identity Research, and also supports NIH's work as part of the Cancer Moonshot."

The same document says the Advanced Research Projects Agency for Health is modeled after the Defense Advanced Research Projects Agency and "will recruit visionary term-limited program managers who can identify and fund traditional and nontraditional partners to take on critical challenges that are unlikely to move forward quickly without this catalytic assistance." (Hereafter, quoted material will be from the agency's or host agency's FY23 budget request documents.)

Figure 2: The NCES statistics budget in nominal and inflation-adjusted (i.e., real) dollars

The $10.5 billion requested for the National Science Foundation is a 19 percent increase over its FY22 level. $880 million is requested for the Directorate for Technology, Innovation, and Partnerships created in FY22. According to NSF FY23, "TIP aims to advance emerging technologies to address societal and economic challenges and opportunities; accelerate the translation of research results from the lab to market and society; and cultivate new education pathways leading to a diverse and skilled future technical workforce comprising researchers, practitioners, technicians, and entrepreneurs."

The FY23 NSF budget also proposes double-digit percentage increases for most of NSF's six traditional directorates. The requested increases would be directed in six theme areas: climate and clean energy research; equity for underserved communities; discovery engine; emerging industries; research infrastructure; and organizational excellence/agency operations and award management.

The $26 million requested increase for the Agency for Healthcare Research and Quality is for "long COVID research and diagnostic safety research, the development of an all-payer claims database, and activities to evaluate the effects of tele-health on health care delivery and health outcomes."

Moving to the statistical agencies, the National Center for Science and Engineering Statistics' requested increase is to provide leadership "in government-wide evidence-building activities and initiatives, including standing up the first-ever standard application process for applying to access restricted-use data from statistical agencies and units, as well as implementing the proposed National Secure Data Service through the expansion of America's DataHub." The requested budget increase is accompanied by a request for six additional employees.
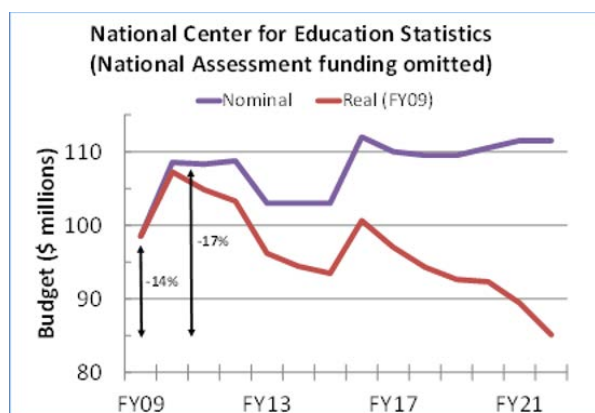
A 21 percent increase is requested for the Bureau of Economic Analysis, which also includes operations for the office of the undersecretary for economic affairs. Major changes "include program adjustments of $2.713 million to improve and expand new distributional measures, $5.221 million to develop new data to track American competitiveness in global supply chains, $2.055 million to develop a space economy satellite account, and $1.511 million to accelerate improved measures of

Table 1: The FY19–FY22 budgets and FY23 requests for NIH, NSF, AHRQ, and the 13 principal federal statistical agencies, including percentage increase of FY22 final over FY21 and FY23 request over FY22. †The NCHS budget was restructured starting in FY21 to account for $14 million previously routinely received from another account. The prior year budgets were adjusted to make them comparable. ‡The BLS request includes another $15 million for its relocation to Suitland, Maryland, to co-locate with BEA and the US Census Bureau. Relocation funding has been provided for FY20–FY22.

	FY19	FY20	FY21	FY22	% Change from FY21	FY23 Request	% Change from FY22
Research Agency (amounts in millions of dollars)							
NIH	39084	41685	42936	44650	4.0%	49040	9.8%
NSF	8075	8278	8487	8840	4.2%	10492	19%
AHRQ	338	338	338	350	3.6%	376	7.4%
Statistical Agency (amounts in millions of dollars)							
BEA	101.0	108.0	111.9	116.0	3.7%	140.9	21%
BJS	43.0	43.0	45.0	40.0	-11%	45.0	13%
BLS‡	615.0	628.0	642.0	659.5	2.7%	726.3	10%
BTS	26.0	26.0	26.0	26.0	0.0%	36.0	38%
Census	3821.4	7558.0	1106.6	1354.0	22%	1524.3	13%
EIA	125.0	126.8	126.8	129.1	1.8%	132.6	2.7%
ERS	86.8	84.8	85.5	87.8	2.7%	99.6	13%
NASS	174.5	180.3	183.9	190.2	3.4%	216.1	14%
NCES	260.5	263.5	276.5	291.5	5.4%	296.5	1.7%
-statistics	109.5	110.5	111.5	111.5	0.0%	111.5	0.0%
NCHS†	174.4	174.4	175.4	180.4	2.9%	181.9	0.9%
NCSES	64.0	65.0	66.7			88.0	
ORES	35.4	36.0	36.4			38.1	
SOI	36.8	35.9	40.0	40.7	1.7%	40.8	0.2%

the US health care sector." Further, $9.3 million of the requested increase supports the implementation of the Evidence Act, additional capacity for the evaluation officer, and consolidation of the Federal Data Service activities under the undersecretary for economic affairs.

The administration requests $726 million for Bureau of Labor Statistics programs and $15 million for the agency's relocation to the site of the Bureau of Economic Analysis and US Census Bureau in Suitland, Maryland. The $67 million in additional program funding includes $11 million to "rebuild statistical capacity across the agency to begin to restore staffing levels," $15 million to "continue development of a new National Longitudinal Surveys youth cohort," $10 million "to improve the Job Openings and Labor Turnover Survey data timeliness," $1 million "to restore agricultural industries to the Occupational Employment and Wage Statistics program," and $12 million "to produce production-quality thresholds to support the Census Bureau's Supplemental Poverty Measure, to research the nature and construction of a consumption-based poverty measure, and to research a chained CPI for low-income households."

The 13 percent requested increase for the Economic Research Service includes $2 million for climate science research and $6.5 million for "conducting a second round of the USDA's National Household Food Purchase and Acquisition Survey." For the National Agricultural Statistics Service, the $26 million includes $8 million for "climate science activities to meet the president's climate goals" and $18 million for the Census of Agriculture.

The $1.5 billion requested for the US Census Bureau includes $160 million for the 2020 Census "to release its data products and final evaluations and assessments," $252 million for the 2030 Census, an increase of $34 million for the Economic Census and Census of Governments, $25 million for Current Economic Statistics, $99 million for Enterprise Data Dissemination—including "an initiative to build evidence, evaluations, and improve underlying racial and ethnicity data"—and $246 million for the American Community Survey, including "an initiative to improve the measurement of sexual orientation and gender identity (SOGI) population in the ACS."

The administration has also requested $10 million for the Bureau of Transportation Statistics. BTS is normally not included in the appropriations process, as it is funded from the Highway Trust Fund at levels determined by the authorizing committee. The requested funding would support the president's FY23 initiatives to (i) "better understand equity as it relates to the transportation cost burden,

Alphabet Soup

NIH – National Institutes of Health

NSF – National Science Foundation

AHRQ – Agency for Healthcare Research and Quality

BEA – Bureau of Economic Analysis

BJS – Bureau of Justice Statistics

BLS – Bureau of Labor Statistics

BTS – Bureau of Transportation Statistics

EIA – Energy Information Administration

ERS – Economic Research Service

NASS – National Agricultural Statistics Service

NCES – National Center for Education Statistics

NCHS – National Center for Health Statistics

NCSES – National Center for Science and Engineering Statistics

ORES – Office of Research, Evaluation, and Statistics

SOI – Statistics of Income

multimodal access to key resources, and other equity considerations"; (ii) "measure the vulnerability of the transportation system to direct and indirect disruptions caused by extreme weather and other unexpected events"; and (iii) "collect small-area, equity-related data and develop/estimate outcome measures for use in the DOT Learning Agenda." Any funding provided by Congress through appropriations would be the first such funding for at least a couple decades but would help alleviate the steep loss in purchasing power.

The request for the Bureau of Justice Statistics restores its budget to its FY21 level. The $45 million should be seen as intending to keep BJS funding flat, rather than a $5 million increase, because the ink would likely have been long dry on the administration's proposed FY22 level for BJS when Congress decided on $40 million for BJS in FY22.

The requested levels for the Office of Research, Evaluation, and Statistics in the Social Security administration and the IRS Statistics of Income are modest in dollar increases.

To follow the FY23 budget developments, see *https://bit.ly/3FEnSCB* and *https://bit.ly/3L6LCkb*. Also, follow @ASA_SciPol on Twitter and join the Count on Stats LinkedIn group at *www.linkedin. com/groups/8777968*, where you can network with fellow supporters of the federal statistical agencies, share your observations and perspectives, and receive relevant updates. ∎

2021 Audit Report for the American Statistical Association

American Statistical Association

Financial Report
December 31, 2021

Contents

RSM

RSM US LLP

Independent Auditor's Report

Board of Directors
American Statistical Association

Opinion
We have audited the financial statements of American Statistical Association (the Association), which comprise the statements of financial position as of December 31, 2021 and 2020, the related statements of activities and cash flows for the years then ended, and the related notes to the financial statements.

In our opinion, the accompanying financial statements present fairly, in all material respects, the financial position of American Statistical Association as of December 31, 2021 and 2020, and the changes in its net assets and its cash flows for the years then ended in accordance with accounting principles generally accepted in the United States of America.

Basis for Opinion
We conducted our audits in accordance with auditing standards generally accepted in the United States of America (GAAS). Our responsibilities under those standards are further described in the Auditor's Responsibilities for the Audit of Financial Statements section of our report. We are required to be independent of the Association and to meet our other ethical responsibilities, in accordance with the relevant ethical requirements relating to our audits. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

Responsibilities of Management for the Financial Statements
Management is responsible for the preparation and fair presentation of these financial statements in accordance with accounting principles generally accepted in the United States of America, and for the design, implementation and maintenance of internal control relevant to the preparation and fair presentation of financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the financial statements, management is required to evaluate whether there are conditions or events, considered in the aggregate, that raise substantial doubt about the Association's ability to continue as a going concern within one year after the date that the financial statements are issued (or within one year after the date that the financial statements are available to be issued when applicable).

Auditor's Responsibilities for the Audit of the Financial Statements
Our objectives are to obtain reasonable assurance about whether the financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditor's report that includes our opinion. Reasonable assurance is a high level of assurance but is not absolute assurance and therefore is not a guarantee that an audit conducted in accordance with GAAS will always detect a material misstatement when it exists. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control. Misstatements are considered material if there is a substantial likelihood that, individually or in the aggregate, they would influence the judgment made by a reasonable user based on the financial statements.

In performing an audit in accordance with GAAS, we:

- Exercise professional judgment and maintain professional skepticism throughout the audit.

- Identify and assess the risks of material misstatement of the financial statements, whether due to fraud or error, and design and perform audit procedures responsive to those risks. Such procedures include examining, on a test basis, evidence regarding the amounts and disclosures in the financial statements.

- Obtain an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Association's internal control. Accordingly, no such opinion is expressed.

- Evaluate the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluate the overall presentation of the financial statements.

- Conclude whether, in our judgment, there are conditions or events, considered in the aggregate, that raise substantial doubt about the Association's ability to continue as a going concern for a reasonable period of time.

We are required to communicate with those charged with governance regarding, among other matters, the planned scope and timing of the audit, significant audit findings and certain internal control-related matters that we identified during the audit.

RSM US LLP

Washington, D.C.
March 28, 2022

American Statistical Association

Statements of Financial Position
December 31, 2021 and 2020

	2021	2020
Assets		
Cash and cash equivalents	$ 375,301	$ 1,063,886
Investments	23,086,328	21,537,192
Accounts receivable, net	533,613	491,041
Prepaid expenses	578,373	331,409
Equity in joint venture	101,985	75,631
Property and equipment, net	5,421,633	5,717,741
Total assets	$ 30,097,233	$ 29,216,900
Liabilities and Net Assets		
Liabilities:		
Accounts payable and accrued expenses	$ 1,016,812	$ 978,996
Due to joint venture	153,715	89,228
Deferred revenue	1,841,272	2,237,601
Bonds payable, net	2,570,194	2,925,709
Total liabilities	5,581,993	6,231,534
Commitments and contingencies (Note 11)		
Net assets:		
Without donor restrictions	22,125,533	20,856,287
With donor restrictions	2,389,707	2,129,079
Total net assets	24,515,240	22,985,366
Total liabilities and net assets	$ 30,097,233	$ 29,216,900

See notes to financial statements.

American Statistical Association

Statements of Activities
Years Ended December 31, 2021 and 2020

	2021			2020		
	Without Donor Restrictions	With Donor Restrictions	Total	Without Donor Restrictions	With Donor Restrictions	Total
Revenue and support:						
Meeting registration and exhibits	$ 2,491,527	$ -	$ 2,491,527	$ 1,821,690	$ -	$ 1,821,690
Membership dues	1,861,263	-	1,861,263	2,013,181	-	2,013,181
Royalties	1,442,470	-	1,442,470	1,486,846	-	1,486,846
Advertising	810,524	-	810,524	538,900	-	538,900
Contributions and sponsorships	454,682	110,989	565,691	369,994	58,454	428,448
Sections	309,948	-	309,948	208,974	-	208,974
Federal grants	203,653	-	203,653	498,028	-	498,028
Maintenance fees	95,748	-	95,748	91,187	-	91,187
Sales	77,379	-	77,379	78,442	-	78,442
Accreditation	28,518	-	28,518	30,006	-	30,006
Page charges	7,040	-	7,040	7,170	-	7,170
Miscellaneous	1,627	-	1,627	15,072	-	15,072
Subscriptions	1,265	-	1,265	2,243	-	2,243
Net assets released from restrictions	50,883	(50,883)	-	39,765	(39,765)	-
Total revenue and support	7,836,407	60,106	7,896,513	7,201,498	18,689	7,220,187
Expenses:						
Program services:						
Programs	2,352,812	-	2,352,812	2,433,929	-	2,433,929
Meetings	1,213,419	-	1,213,419	1,625,491	-	1,625,491
Publications	1,055,088	-	1,055,088	1,114,583	-	1,114,583
Section expenses	753,704	-	753,704	768,687	-	768,687
Education	218,959	-	218,959	270,909	-	270,909
Grants and awards	168,057	-	168,057	399,407	-	399,407
Total program services	5,762,039	-	5,762,039	6,613,006	-	6,613,006
Supporting services:						
Management and general	1,588,495	-	1,588,495	1,560,341	-	1,560,341
Membership development	867,168	-	867,168	916,447	-	916,447
Fundraising	198,192	-	198,192	210,013	-	210,013
Total supporting services	2,653,855	-	2,653,855	2,686,801	-	2,686,801
Total expenses	8,415,894	-	8,415,894	9,299,807	-	9,299,807
Change in net assets before investment income	(579,487)	60,106	(519,381)	(2,098,309)	18,689	(2,079,620)
Investment income, net of fees	1,848,733	200,522	2,049,255	2,312,949	257,023	2,569,972
Change in net assets	1,269,246	260,628	1,529,874	214,640	275,712	490,352
Net assets:						
Beginning	20,856,287	2,129,079	22,985,366	20,641,647	1,853,367	22,495,014
Ending	$ 22,125,533	$ 2,389,707	$ 24,515,240	$ 20,856,287	$ 2,129,079	$ 22,985,366

See notes to financial statements.

American Statistical Association

Statements of Cash Flows
Years Ended December 31, 2021 and 2020

	2021	2020
Cash flows from operating activities:		
Change in net assets	$ 1,529,874	$ 490,352
Adjustments to reconcile change in net assets to net cash provided by (used in) operating activities:		
Depreciation and amortization	296,108	300,069
Amortization of bond issuance costs	6,637	6,637
Equity in earnings from joint venture	(26,354)	(40,111)
Contributions restricted for investment in perpetuity	(55,679)	(37,930)
Unrealized and realized gain on investments	(1,087,737)	(2,297,440)
Loss on the disposal of property and equipment	-	33,865
Changes in assets and liabilities:		
(Increase) decrease in:		
Accounts receivable	(42,572)	156,932
Prepaid expenses	(246,964)	(71,201)
Increase (decrease) in:		
Accounts payable and accrued expenses	37,816	(93,858)
Due to joint venture	64,487	(3,694)
Deferred revenue	(396,329)	(315,641)
Net cash provided by (used in) operating activities	79,287	(1,872,020)
Cash flows from investing activities:		
Purchases of investments	(28,066,317)	(14,080,080)
Proceeds from sale of investments	27,604,918	16,807,588
Net cash (used in) provided by investing activities	(461,399)	2,727,508
Cash flows from financing activities:		
Principal payment on bonds payable	(362,152)	(352,340)
Contributions restricted for investment in perpetuity	55,679	37,930
Equity distribution from joint venture	-	43,565
Net cash used in financing activities	(306,473)	(270,845)
Net (decrease) increase in cash and cash equivalents	(688,585)	584,643
Cash and cash equivalents:		
Beginning	1,063,886	479,243
Ending	$ 375,301	$ 1,063,886
Supplemental disclosures of cash flow information:		
Income taxes paid	$ 45,250	$ 46,900
Interest paid	$ 102,728	$ 107,602

American Statistical Association

Notes to Financial Statements

Note 1. Nature of Activities and Significant Accounting Policies

Nature of activities: The American Statistical Association (the Association) was founded in 1839 and incorporated in 1841 under the not-for-profit laws of the Commonwealth of Massachusetts as a professional association serving statisticians and all individuals interested in the study and/or application of statistics. The Association's objectives are to foster statistics and its applications, to promote unity and effectiveness of effort among all concerned with statistical problems, and to increase the contribution of statistics to human welfare. The Association conducts meetings, produces publications devoted to statistical methodology and its applications, makes available information concerning the science of statistics and its contributions, cooperates with organizations in the advancement of statistics, stimulates research, promotes high professional standards and integrity in the application of statistics to problems of science and of public policy, fosters education in statistics, and, in general, makes statistics of service to science and society.

A description of the Association's programs and supporting services is as follows:

Programs: Various projects undertaken to further statistics among the public. This includes expenses for various awards presented, which increase the visibility of statistics and its methods with the general public, including science policy, various statistical outreach programs, a public awareness campaign, and online job advertising for statistics positions.

Meetings: The Association provides for various meetings and workshops that serve as a forum for the latest developments in statistical theory and application. These meetings offer a concentrated opportunity for the exchange of ideas and discussion of research findings among colleges.

Publications: The Association produces various publications and magazines. These publications represent the Association's commitment to the ongoing enhancement of statistical education and the public's understanding of statistics.

Section expenses: Represent the Association's organization in groups by professional subject matter. These sections facilitate professional interchanges and research opportunities in statistics.

Education: The Association offers a wide range of continuing education opportunities, which represent a forum for emerging statistics research. These programs include workshops, lectures, and expenses related to the production and sale of educational materials. Additionally, the Association advocates and provides materials for statistics educators at the K-12, community college undergraduate, and graduate levels, and provides leadership in the education community about statistics and data science.

Grants and awards: Represent expenses related to providing advice and technical assistance, which enhance statistical education through the support of federal, state, and local government agencies.

Management and general: Includes the functions necessary to secure proper administrative functioning of the Board of Directors, maintain an adequate working environment, and manage financial and budgetary responsibilities of the Association.

Membership development: Costs related to member service maintenance.

Fundraising: The expenditures associated with the Association's fundraising activities mainly consist of staff compensation and other costs associated with inducing potential donors to contribute to the Association's programs.

American Statistical Association

Notes to Financial Statements

Note 1. Nature of Activities and Significant Accounting Policies (Continued)

A summary of the Association's significant accounting policies follows:

Basis of presentation: The Association is required to report information regarding its financial position and activities according to two classes of net assets: net assets without donor restrictions and net assets with donor restrictions.

Without donor restrictions: Net assets without donor restrictions include those net assets whose use is not restricted by donors, even though their use may be limited in other respects, such as by board designation. See Note 7 for details on board-designated net assets.

With donor restrictions: Net assets with donor restrictions include those net assets whose use is subject to donor-imposed restrictions. Donor restrictions may be for a specified time or purpose limitation or the donor may specify that the corpus of their original and certain subsequent gifts are to be maintained in perpetuity. Donor-imposed restrictions are released when a restriction expires, that is, when the stipulated time has elapsed, when the stipulated purpose for which the resource was restricted has been fulfilled, or both. See Notes 8 and 9 for details on net assets with donor restrictions.

Cash and cash equivalents: For purposes of reporting cash flows, the Association considers all highly liquid investments purchased with a maturity of three months or less to be cash or cash equivalents, excluding cash held by the investment custodian. Cash and cash equivalents also include funds held in a bank account on behalf of a joint venture.

Financial risk: The Association maintains its cash in bank deposit accounts which, at times, may exceed federally-insured limits. The Association has not experienced any losses in such accounts. The Association believes it is not exposed to any significant financial risk on cash.

The Association invests in a professionally managed portfolio that contains fixed income and equity mutual funds and common stocks. Such investments are exposed to various risks, such as market and credit. Due to the level of risk associated with such investments and the level of uncertainty related to changes in the value of such investments, it is at least reasonably possible that changes in risk in the near-term could materially affect investment balances and the amounts reported in the financial statements.

Accounts receivable: Accounts receivable consist of amounts due from the sale of subscriptions, publications, advertising and conferences. Accounts receivable are reported net of an allowance for doubtful accounts. The allowance for doubtful accounts is provided based upon management's judgment, including such factors as prior collection history and type of receivable. As of December 31, 2021 and 2020, the allowance for doubtful accounts was $8,598. The Association writes-off receivables when they become uncollectible, and payments subsequently received on such receivables are credited to the allowance for doubtful accounts.

Equity in joint venture: The Association has an investment in a joint venture to produce a journal called Technometrics. The Association accounts for its investment using the equity method due to its lack of control over the joint venture. Under the equity method, the original investment is recorded at cost and adjusted by the Association's share of undistributed earnings or losses of the joint venture. Distributions of $0 and $43,565 were received during the years ended December 31, 2021 and 2020, respectively.

Investments: Investments with readily determinable fair values are reflected at fair value. The change in fair value of these investments is recorded as a component of investment income in the statements of activities.

American Statistical Association

Notes to Financial Statements

Note 1. Nature of Activities and Significant Accounting Policies (Continued)

Property and equipment: Property and equipment are stated at cost and depreciated on a straight-line basis over the estimated useful lives of the assets: 30 years for the building and improvements and three to five years for furniture and fixtures, equipment, and software. The Association capitalizes all property and equipment purchased with a cost of $5,000 or more.

Valuation of long-lived assets: Long-lived assets and certain identifiable intangible assets are reviewed for impairment whenever events or changes in circumstances indicate that the carrying amount of an asset may not be recoverable. Recoverability of the long-lived asset is measured by a comparison of the carrying amount of the asset to future undiscounted net cash flows expected to be generated by the asset. If such assets are considered to be impaired, the impairment to be recognized is measured by the amount by which the carrying amount of the assets exceeds the estimated fair value of the assets. Assets to be disposed of are reportable at the lower of the carrying amount or fair value, less costs to sell.

Meeting registration and exhibits: Meeting registration and exhibitor fees are recognized over the time that the related meeting takes place. Registration and exhibitor fees are generally collected in advance of the conference and recorded as deferred revenue until the conference occurs.

Membership dues: Membership dues are recognized in the period to which they apply. The membership period is 12 months beginning the month paid or the member's renewal date, whichever is later. Member benefits include access to Amstat News and Significance, career resources including ASA JobWeb, online access to ASA Journals and JSM Proceedings, and ASA eNews. All member benefits are considered one performance obligation and revenue is recognized ratably over the 12-month membership period as the delivery of the member benefit is provided. The monthly derived value provided to the member is the specific output used by the Association to determine that the performance obligation has been satisfied.

Royalties: The Association has an agreement with a third-party vendor to manage the sales of its publications. The Association recognizes revenue at the point in time the publication is sold and the respective royalty is earned.

Advertising: Revenue is recognized at the point in time that the magazine or other periodical containing the advertisement is published. Amounts received in advance of the advertisement being published are recorded as deferred revenue. The derived value provided by the advertisement being published is the specific output used by the Association to determine that the performance obligation has been satisfied.

Except for royalties and advertising, all of the Association's revenue from contracts with customers are from performance obligations satisfied over time and is derived from contracts with an initial expected duration of generally one year or less. Prices are specific to a distinct performance obligation and do not consist of multiple transactions.

Economic factors driven by consumer confidence, employment, inflation, and other world events impact the timing and level of cash received and revenue recognized by the Association. Periods of economic downturn resulting from any of the above factors may result in declines in future cash flows and recognized revenue of the Association.

Deferred revenue: The Association records deferred revenue in situations when amounts are paid in advance of the Association, satisfying the applicable revenue recognition criteria. Such revenue is recognized when all criteria are subsequently satisfied. There were no changes in membership dues, meeting registration and exhibits, royalties and advertising that would affect the economic seasonality of the statements of financial position.

American Statistical Association

Notes to Financial Statements

Note 1. Nature of Activities and Significant Accounting Policies (Continued)

Contributions and grants: Unconditional contributions are recorded as with donor restrictions or without donor restrictions depending upon the existence and/or nature of any donor intent. Support that is not restricted by the donor is reported as an increase in net assets without donor restrictions. Donor-restricted support is reported as an increase in net assets with donor restrictions and then reclassified to net assets without donor restrictions when the restriction expires.

Federal grants and certain private grants are considered conditional contributions due to existence of a right of return and donor-imposed barriers. The recognition of conditional grant revenue is deferred until barriers imposed under the grant documents are met by the Association. As of December 31, 2021, there were conditional promises to give of $223,839 related to private grants and $886,388 related to federal grants. As of December 31, 2020, there were conditional promises to give of $351,908 related to private grants and $203,373 related to federal grants. The conditional grants each have barriers that relate to limited discretion over expenditures. A refundable advance of $206,716 and $351,908 is included within deferred revenue as of December 31, 2021 and 2020, respectively, related to the private grants. The federal grants are paid on a cost-reimbursement basis.

Functional allocation of expenses: The costs of providing various programs and supporting services have been summarized on a functional basis in the statements of activities. Note 12 to the financial statements summarizes the Association's allocation methods and presents schedules of expenses by both nature and function for 2021 and 2020.

Upcoming accounting pronouncements: In February 2016, the Financial Accounting Standards Board (FASB) issued Accounting Standards Update (ASU) 2016-02, Leases (Topic 842). The guidance in this ASU supersedes the leasing guidance in Topic 840, Leases. Under the new guidance, lessees are required to recognize lease assets and lease liabilities on the balance sheet for all leases with terms longer than 12 months. Leases will be classified as either finance or operating with classification affecting the pattern of expense recognition in the statement of activities. The new standard is effective for the Association's year ending December 31, 2022. A modified retrospective transition approach is required for lessees for capital and operating leases existing at, or entered into after, the beginning of the earliest comparative period presented in the financial statements, with certain practical expedients available. The Association is currently evaluating the impact of the pending adoption of the new standard on the financial statements.

In September 2020, the FASB issued ASU 2020-07, Not-for-Profit Entities (Topic 958): Presentation and Disclosures by Not-for-Profit Entities for Contributed Nonfinancial Assets. This ASU requires a not-for-profit entity to present contributed nonfinancial assets in the statement of activities as a line item that is separate from contributions of cash or other financial assets. A not-for-profit entity also is required to disclose contributed nonfinancial assets received disaggregated by category that depicts the type of contributed nonfinancial assets. The term nonfinancial asset includes fixed assets, use of fixed assets or utilities and materials and supplies, intangible assets, services and unconditional promises of those assets. The ASU will be applied on a retrospective basis. This standard will be effective for the Association for the year ending December 31, 2022.

Income taxes: The Association is generally exempt from Federal income taxes under the provisions of Section 501(c)(3) of the Internal Revenue Code (IRC). In addition, the Association has been classified as an organization that is not a private foundation under Section 509(a)(2) of the IRC. However, the Association is required to report unrelated business income to the Internal Revenue Service and the state of Virginia, as well as pay certain other taxes to local jurisdictions. The Association incurred approximately $161,000 and $55,000 in income tax expense on unrelated business income net income earned on advertising sales for the years ended December 31, 2021 and 2020, respectively.

American Statistical Association

Notes to Financial Statements

Note 1. Nature of Activities and Significant Accounting Policies (Continued)

Use of estimates: The preparation of financial statements in conformity generally accepted accounting principles (U.S. GAAP) requires management to make estimates and assumptions that affect the amounts reported in the financial statements and accompanying notes. Actual results could differ from those estimates.

Reclassifications: Certain amounts relating to the prior year have been reclassified to conform to the current year presentation with no effect on the previously reported change in net assets.

Subsequent events: Subsequent events have been evaluated through March 28, 2022, which is the date the financial statements were available to be issued.

Note 2. Investments and Fair Value Measurements

The Association has implemented the accounting standards topic regarding fair value measurements which establishes a framework for measuring fair value in accordance with U.S. GAAP and expands disclosures about fair value measurements. This standard uses the following prioritized input levels to measure fair value. The input levels used for valuing investments are not necessarily an indication of risk.

Level 1: Observable inputs that reflect quoted prices for identical assets or liabilities in active markets, such as stock quotes.

Level 2: Includes inputs other than Level 1 that are directly or indirectly observable in the marketplace, such as yield curves or other market data.

Level 3: Unobservable inputs which reflect the reporting entity's assessment of the assumptions that market participants would use in pricing the asset or liability, including assumptions about risk such as, bid/ask spreads and liquidity discounts.

Investments valued using Level 1 inputs include mutual funds, the fair values for which were based on quoted prices for identical assets in active markets. Investments valued using Level 2 inputs include corporate and government bonds, which were based on the fair values of the underlying investments as determined by the fund managers. Management believes the fund managers' estimates to be reasonable approximations of the fair value of the investments. Investments recorded at cost include cash deposits. Investments at cost are not required to be classified in one of the levels prescribed by the fair value hierarchy.

American Statistical Association

Notes to Financial Statements

Note 2. Investments and Fair Value Measurements (Continued)

The following is a summary of investments at December 31, 2021 and 2020:

	2021	2020
Investments, at fair value:		
Mutual funds – U.S. equities (Level 1)	$ 10,000,194	$ 9,075,198
Mutual funds – U.S. fixed income (Level 1)	4,835,639	4,151,329
Mutual funds – International equities (Level 1)	6,182,370	4,895,403
Mutual funds – International fixed income (Level 1)	2,068,125	678,186
Stock – US Equities (Level 1)	-	2,117
U.S. corporate bonds (Level 2)	-	1,239,067
U.S. government bonds (Level 2)	-	1,364,993
Investments, at cost:		
Cash deposits	-	130,899
	$ 23,086,328	$ 21,537,192

Note 3. Property and Equipment

Property and equipment consists of the following at December 31, 2021 and 2020:

	2021	2020
Building and improvements	$ 8,541,220	$ 8,541,220
Furniture and fixtures	211,869	211,869
Office equipment	74,861	74,861
Software	512,773	512,773
Computer equipment	70,773	70,773
Land	1,286,000	1,286,000
	10,697,496	10,697,496
Less accumulated depreciation	(5,275,863)	(4,979,755)
	$ 5,421,633	$ 5,717,741

In July 2020, the Association was approached about selling one of its existing parking lots. In October 2020, the Association entered into an agreement of sale and in December 2020 the buyer provided its feasibility notice to the Association indicating that they intend to proceed to closing. The agreement of sale provides the buyer a 14-month initial entitlement contingency period in order to obtain the necessary entitlements for the development of the property with a right to extend the period for up to 24-months. Unless the agreement is terminated during the entitlement contingency period, the sale is expected to close in 2022 and any resulting gain or loss on the sale of the property would be reported in the statement of activities for the year ending December 31, 2022.

In September 2021, the Association listed its building located in Alexandria, Virginia for sale or lease. At this time, there have not been any offers and an immediate sale is considered unlikely based on current commercial real estate market conditions. Accordingly, the criteria to consider the building as held for sale as of December 31, 2021 had not been met.

American Statistical Association

Notes to Financial Statements

Note 4. Joint Venture

The following schedule presents summarized financial information from the joint venture Technometrics, in which the Association has a 60% equity ownership without control as of and for the years ended December 31, 2021 and 2020:

	2021	2020
Condensed income statement:		
Revenues	$ 108,500	$ 130,045
Expenses	64,577	63,193
Net income	$ 43,923	$ 66,852
Condensed balance sheet:		
Total assets	$ 183,716	$ 136,413
Total liabilities	13,741	10,361
Equity	$ 169,975	$ 126,052

The Association also has a maintenance agreement with the joint venture in which it provides management and collection services, office space, and editorial and administrative support. Amounts due to the joint venture as of December 31, 2021 and 2020, which were comprised of the joint venture cash held within the Association's cash account, were $153,715 and $89,228, respectively. Maintenance agreement revenue under this arrangement earned by the Association was $38,739 and $36,795 for the years ended December 31, 2021 and 2020, respectively.

Note 5. Bonds Payable

During the year ended December 31, 2013, the Association issued Revenue Refunding Bonds (the Bonds) for $5,396,000 with a financial institution, the holder of the Bonds, which have a maturity date of August 1, 2030. The Bonds are callable on May 1, 2028, by the bondholder with 120 days' notice. Interest on the Bonds is calculated at a fixed rate of 3.34% for the years ended December 31, 2021 and 2020. The Bonds are collateralized by the land and building owned by the Association. In connection with the Bonds, the Association must be in compliance with certain specified covenants.

Interest expense incurred for the years ended December 31, 2021 and 2020, was $100,803 and $113,221 respectively.

Annual principal payments on the bonds at December 31, 2021, are due in future years as follows:

2022	$ 372,238
2023	382,604
2024	393,260
2025	404,212
2026	415,469
2027-2028	644,999
	$ 2,612,782

American Statistical Association

Notes to Financial Statements

Note 5. Bonds Payable (Continued)

Bonds are recorded on the statements of financial position net of the unamortized discount and debt issuance costs. Bonds payable consist of the following as of December 31, 2021 and 2020:

	2021	2020
Principal amount	$ 2,612,782	$ 2,974,934
Less unamortized debt issuance costs	(42,588)	(49,225)
	$ 2,570,194	$ 2,925,709

Note 6. Liquidity

The Association strives to maintain sufficient cash to cover all operating expenditures during its annual business cycle. Cash in excess of amounts needed for operating activities is invested in mutual funds and is available to convert back to cash if needed. While the Association's investments may be quickly converted to cash to cover operating expenditures, the Association does so infrequently. In 2021 and 2020, the Association made transfers of $500,000 and $3,000,000, respectively, from its investments to its commercial checking account to cover an expected temporary cash shortfall. The following table reflects the Association's financial assets as of December 31, 2021 and 2020, reduced by amounts that are not available to meet general expenditures due to donor restrictions or internal board designations (see Notes 7, 8 and 9). In the event the need arises to utilize the board-designated funds for liquidity purposes, the reserves could be drawn upon through board resolution.

	2021	2020
Cash and cash equivalents	$ 375,301	$ 1,063,886
Investments	23,086,328	21,537,192
Accounts receivable, net	533,613	491,041
Financial assets available	23,995,242	23,092,119
Less amounts unavailable for general expenditures within one year due to:		
Donor-imposed restrictions	(2,389,707)	(2,129,079)
Board designations	(1,820,575)	(1,613,473)
Financial assets available to meet cash needs for general expenditures within one year	$ 19,784,960	$ 19,349,567

Note 7. Board Designated Net Assets

Board designated net assets represent funds designated by the Board of Directors (the Board). These funds are without donor restrictions and are available for the use of the Association at the direction of the Board. Board designated net assets consisted of the following at December 31, 2021 and 2020:

	2021	2020
Sections	$ 1,717,074	$ 1,507,615
Education	103,501	105,858
	$ 1,820,575	$ 1,613,473

American Statistical Association

Notes to Financial Statements

Note 8. Net Assets With Donor Restriction

Net assets with donor restrictions consisted of the following at December 31, 2021 and 2020:

	Balance December 31, 2020	Restricted Contributions	Investment Income	Released	Balance December 31, 2021
Endowment funds	$ 1,505,500	$ 55,679	$ 143,445	$ 26,715	$ 1,677,909
Other funds:					
Cox Scholarship	197,310	200	18,842	2,000	214,352
Waksberg Award	112,761	-	10,493	5,000	118,254
Bernard Harris Fund	80,430	15,250	8,033	-	103,713
Griffith Award	54,434	2,800	5,285	1,668	60,851
Wray Smith Scholarship Fund	46,325	-	4,367	2,000	48,692
Dixon Award	41,304	-	3,943	500	44,747
MG Natrella Scholarship Fund	38,539	-	3,686	-	42,225
Chambers Award	25,389	-	2,428	1,000	26,817
Student and early career travel	8,993	725	-	-	9,718
BIPOC in Stats & Data Science	5,000	26,335	-	-	31,335
Judea Pearl Prize	5,000	10,000	-	10,000	5,000
Aliaga Fund	3,992	-	-	-	3,992
Other short-term restricted	2,102	-	-	-	2,102
Pride Scholarship	2,000	-	-	2,000	-
Total other funds	623,579	55,310	57,077	24,168	711,798
Total	$ 2,129,079	$ 110,989	$ 200,522	$ 50,883	$ 2,389,707

	Balance December 31, 2019	Restricted Contributions	Investment Income	Released	Balance December 31, 2020
Endowment funds	$ 1,316,500	$ 37,930	$ 183,623	$ 32,553	$ 1,505,500
Other funds:					
Cox Scholarship	175,043	-	14,123	2,500	197,310
Waksberg Award	101,138	-	14,123	2,500	112,761
Bernard Harris Fund	60,562	10,250	9,618	-	80,430
Griffith Award	47,179	1,000	6,717	462	54,434
Wray Smith Scholarship Fund	40,619	-	5,706	-	46,325
Dixon Award	36,726	-	5,078	500	41,304
MG Natrella Scholarship Fund	33,792	-	4,747	-	38,539
Chambers Award	23,245	-	3,144	1,000	25,389
Student and early career travel	6,969	2,274	-	250	8,993
BIPOC in Stats & Data Science	-	5,000	-	-	5,000
Judea Pearl Prize	5,000	-	-	-	5,000
Aliaga Fund	3,992	-	-	-	3,992
Other short-term restricted	2,602	-	-	500	2,102
Pride Scholarship	-	2,000	-	-	2,000
Total other funds	536,867	20,524	73,400	7,212	623,579
Total	$ 1,853,367	$ 58,454	$ 257,023	$ 39,765	$ 2,129,079

American Statistical Association

Notes to Financial Statements

Note 9. Endowment

The Association's endowment funds have been established for the purpose of awards and grants supporting education and research in the field of statistics. The Association's policies for making appropriations for expenditures are to follow the directives of the donors and to comply with the regulations in the state laws for endowments. Under U.S. GAAP, net assets associated with endowment funds are classified and reported based on the existence or absence of donor-imposed restrictions.

Though management of the Association has not conducted a formal analysis of its compliance with the Uniform Prudent Management of Institutional Funds Act (UPMIFA) enacted by the Commonwealth of Virginia, it has established policies regarding the preservation, investment and expenditure of permanently restricted net assets. Consistent with U.S. GAAP management believes that funds that are perpetual in nature require the preservation of the fair value of the gifts, and that earnings on those funds should be classified in accordance with the donor's stipulations, if any, as net assets with donor restrictions until the donor stipulation is met.

In accordance with UPMIFA, the Association considers the following factors in making a determination to appropriate or accumulate donor-restricted funds: (1) duration and preservation of the fund; (2) purposes of the Association and the donor-restricted endowment fund; (3) general economic conditions; (4) possible effect of inflation and deflation; (5) expected total return from income and the appreciation or depreciation of investments; (6) other resources of the Association; (7) investment policies of the Association.

The Association has adopted investment and spending policies for endowment assets that attempt to provide a predictable stream of funding to programs supported by its endowment while seeking to maintain purchasing power of the endowment assets. All earnings of the endowment are reflected as net assets with donor restrictions until appropriated for expenditure based on donor restrictions by the various Committees of the Association. The Board has assigned a Committee to each program for the purposes of selecting and determining individuals for awards or grants.

From time to time, the fair value of assets associated with individual donor-restricted endowment funds may fall below the level that the donor or UPMIFA requires the Association to retain as a fund of perpetual duration. In accordance with U.S. GAAP, there were no deficiencies of this nature that are reported in net assets with donor restrictions as of December 31, 2021 and 2020.

American Statistical Association

Notes to Financial Statements

Note 9. Endowment (Continued)

Endowment net assets consisted of the following at December 31, 2021 and 2020:

	2021		
	With Donor Restrictions		
	Subject to Expenditure for Specified Purpose	Endowments Given in Perpetuity	Total
Noether Memorial	$ 127,732	$ 206,506	$ 334,238
Sirken Award	61,864	150,000	211,864
Youden Award	125,567	61,082	186,649
Deming Lecture Fund	101,165	67,275	168,440
EC Bryant Award	81,429	60,000	141,429
Wilks Memorial	45,970	47,143	93,113
Links Lecture	28,917	62,425	91,342
Waller Fund	27,083	45,000	72,083
Lingzi Lu Award	29,803	41,270	71,073
Karl E. Peace Award	34,774	34,000	68,774
Marquardt Memorial	36,367	26,250	62,617
Lester R. Curtin Award	20,140	25,000	45,140
Bartko Award	13,582	30,000	43,582
Lamb/Ryne	7,435	44,000	51,435
Pride	940	35,190	36,130
	$ 742,768	$ 935,141	$ 1,677,909

American Statistical Association

Notes to Financial Statements

Note 9. Endowment (Continued)

	2020		
	With Donor Restrictions		
	Subject to Expenditure for Specified Purpose	Endowments Given in Perpetuity	Total
Noether Memorial	$ 105,504	$ 206,506	$ 312,010
Sirken Award	48,058	150,000	198,058
Youden Award	111,127	61,082	172,209
Deming Lecture Fund	86,461	67,275	153,736
EC Bryant Award	73,715	60,000	133,715
Wilks Memorial	39,694	47,143	86,837
Links Lecture	21,776	60,876	82,652
Waller Fund	22,643	45,000	67,643
Lingzi Lu Award	24,350	41,270	65,620
Karl E. Peace Award	29,697	34,000	63,697
Marquardt Memorial	30,901	26,250	57,151
Lester R. Curtin Award	16,841	25,000	41,841
Bartko Award	10,574	30,000	40,574
Lamb/Ryne	3,757	26,000	29,757
	$ 625,098	$ 880,402	$ 1,505,500

For the years ended December 31, 2021 and 2020, the Association had the following endowment-related activities:

	With Donor Restrictions		
	Subject to Expenditure for Specified Purpose	Endowments Given in Perpetuity	Total
Endowment assets, December 31, 2020	$ 625,098	$ 880,402	$ 1,505,500
Contributions	940	54,739	55,679
Net investment income	143,445	-	143,445
Appropriation of endowment assets for expenditure	(26,715)	-	(26,715)
Endowment assets, December 31, 2021	$ 742,768	$ 935,141	$ 1,677,909

American Statistical Association

Notes to Financial Statements

Note 9.   Endowment (Continued)

		With Donor Restrictions		
		Subject to Expenditure for Specified Purpose	Endowments Given in Perpetuity	Total
Endowment assets, December 31, 2019	$	474,028	$ 842,472	$ 1,316,500
Contributions		-	37,930	37,930
Net investment income		183,623	-	183,623
Appropriation of endowment assets				
assets for expenditure		(32,553)	-	(32,553)
Endowment assets, December 31, 2020	$	625,098	$ 880,402	$ 1,505,500

Note 10.   Retirement Plans

The Association has a 401(k) profit sharing plan and a money purchase plan. Both plans cover substantially all full-time employees from date of hire. Under the terms of the 401(k) profit sharing plan, the Association will match 100% of the participating employee's contributions, up to 3% of the employee's salary. Under the terms of the money purchase plan, the Association contributes 6% of an eligible employee's compensation to the plan. Contributions to the plans were as follows for the years ended December 31, 2021 and 2020:

	2021	2020
Money purchase plan	$ 207,687	$ 224,605
401(k) profit sharing plan	101,810	105,347
	$ 309,497	$ 329,952

Note 11.   Commitments and Contingencies

Hotel space: The Association reserves hotel space for its conventions several years in advance. The contracts stipulate the number of rooms to be reserved and the time period for which they are to be reserved. As of the date of this report, contracts for hotel space had been entered into through 2029. However, due to the numerous variables involved, the Association's potential liability under these contracts cannot be determined.

Legal matters: From time to time, the Association may be subject to various legal proceedings, which are incidental to the ordinary course of business. In the opinion of management, there are no material legal proceedings to which the Association is a party.

Employment agreement: The Association has an employment agreement with its Executive Director, whereby, if the Association were to terminate the agreement without cause, the Association would be required to make certain payments to the Executive Director. The latest extension of the agreement is set to end in August 2024, unless further extended.

American Statistical Association

Notes to Financial Statements

Note 11.   Commitments and Contingencies (Continued)

Federal grants: The Association receives grants from federal agencies. Revenue from such grants is recognized only to the extent of actual grant expenses incurred. Reimbursed costs are subject to audit and final determination of allowability by the federal government. Therefore, there is the possibility that any amount received in excess of allowable costs would be required to be refunded. The Association believes that no material liability would result from such an audit.

COVID-19: During the years ended December 31, 2021 and 2020, COVID-related quarantines, labor shortages, and other disruptions to the Association's operations, and those of its members, adversely impacted the Association's revenues and its ability to provide services and operating results. The effects of COVID-19 on the Association's meetings were not covered by insurance, however, efforts were made to mitigate the impact on revenues and expenses. The Association was able to successfully convert the in-person meetings to virtual programs, though less revenue was generated than would be expected for in-person meetings. It is unknown what the long-term financial effect of the adverse conditions associated with COVID-19 will be on the Association. As of this date, the Association's meetings, conferences, and other activities are planned to operate under normal conditions, as they did prior to the COVID-19 outbreak.

Note 12.   Expenses by Both Nature and Function

The financial statements report certain categories of expenses that are attributable to one or more program or supporting functions of the Association. Most expenditures of the Association are directly traced to programs and supporting services through a process of coding invoices and expense reports to the appropriate cost centers. Salaries and benefits are similarly traced to programs and supporting service cost centers using a timesheet reporting system. Through these processes, costs that are directly related to a single program or supporting activity are assigned to that program or supporting activity.

Costs related to more than one program or supporting activity, or to a combination of programs and supporting services are allocated among the appropriate functions. Costs and overhead expenses are allocated to the various functions of the organization based on total direct salaries traced to each function. Overhead includes common-use supplies and maintenance, such as copier toner, paper, routine building maintenance, and other costs that benefit all or nearly all programs.

American Statistical Association

Notes to Financial Statements

Note 12.   Expenses by Both Nature and Function (Continued)

Expenses by both nature and function are as follows for the years ended December 31, 2021 and 2020:

2021

		Program Services							Supporting Services				
	Programs	Meetings	Publications	Section Expenses	Education	Grants and Awards	Total Program Services	Management and General	Membership Development	Fundraising	Total Supporting Services	Total
Salaries and benefits	$ 1,338,336	$ 708,866	$ 436,335	$ 201,596	$ 60,529	$ 5,462	$ 2,751,124	$ 1,127,760	$ 595,817	$ 155,850	$ 1,879,427	$ 4,630,551
Meeting expenses	139,781	295,264	127,027	463,244	9,467	5	1,034,788	33,775	70,504	7,797	112,076	1,146,864
Non-employee compensation	121,949	14,845	151,494	22,198	130,246	155,403	596,135	37,898	30,452	-	68,350	664,485
Overhead and occupancy	187,637	91,377	55,853	23,018	7,866	409	366,160	201,085	74,841	19,646	295,572	661,732
Professional services	348,996	-	4,315	-	-	-	353,311	39,552	-	-	39,552	392,863
Other expense	127,899	35,729	29,999	19,641	658	1,301	215,227	2,298	59,192	1,122	62,612	277,839
Taxes and fees	20,521	10,633	61,691	2,698	912	47	96,502	135,820	8,703	5,013	149,536	246,038
Printing/publishing	-	24,166	112,046	823	421	-	137,456	33	8,497	3,488	12,018	149,474
Postage and shipping	458	25,726	74,116	865	1,704	-	102,869	276	16,096	3,487	19,859	122,728
Contributions	61,036	-	-	9,647	5,500	-	76,183	-	-	-	-	76,183
Supplies and equipment	2,981	6,813	2,212	3,913	1,441	-	17,360	7,717	3,066	1,789	12,572	29,932
Travel	3,218	-	-	6,061	215	5,430	14,924	2,281	-	-	2,281	17,205
	$ 2,352,812	$ 1,213,419	$ 1,055,088	$ 753,704	$ 218,959	$ 168,057	$ 5,762,039	$ 1,588,495	$ 867,168	$ 198,192	$ 2,653,855	$ 8,415,894

2020

		Program Services							Supporting Services				
	Programs	Meetings	Publications	Section Expenses	Education	Grants and Awards	Total Program Services	Management and General	Membership Development	Fundraising	Total Supporting Services	Total
Salaries and benefits	$ 1,387,626	$ 771,814	$ 453,133	$ 206,957	$ 99,951	$ 5,691	$ 2,925,172	$ 1,168,485	$ 620,832	$ 160,027	$ 1,949,344	$ 4,874,516
Meeting expenses	63,876	423,360	155,525	405,559	2,051	6	1,050,377	38,806	99,329	10,732	148,867	1,199,244
Non-employee compensation	130,586	48,822	155,716	22,203	137,100	378,755	873,182	38,773	29,111	150	68,034	941,216
Overhead and occupancy	184,527	103,259	52,090	25,818	13,197	851	379,742	198,622	76,335	20,266	293,223	672,965
Professional services	372,735	-	5,106	-	-	-	377,841	44,862	-	-	44,862	422,703
Other expense	107,837	72,999	31,368	17,970	1,158	-	231,332	38,634	50,117	829	89,580	320,912
Postage and shipping	1,867	73,227	78,452	15,126	968	-	169,640	679	18,356	4,177	23,212	192,852
Printing/publishing	1,838	41,120	122,346	1,897	1,603	-	168,804	25	6,762	5,447	12,234	181,038
Contributions	135,379	-	-	15,853	3,000	-	154,232	-	-	-	-	154,232
Taxes and fees	19,997	11,333	60,736	2,903	1,481	95	96,545	22,600	8,563	5,191	36,354	132,899
Travel	26,490	37,837	-	16,155	7,521	14,009	102,012	2,210	3,356	1,049	6,615	108,627
Supplies and equipment	1,171	41,720	111	38,246	2,879	-	84,127	8,645	3,686	2,145	14,476	98,603
	$ 2,433,929	$ 1,625,491	$ 1,114,583	$ 788,687	$ 270,909	$ 399,407	$ 6,613,006	$ 1,560,341	$ 916,447	$ 210,013	$ 2,686,801	$ 9,299,807

Horton Works to Improve
Reproducibility, Equity as New *JSDSE* Editor

Horton

Nicholas Horton is Beitzel Professor of Technology and Society (statistics and data science) at Amherst College. He co-chairs the National Academies Committee on Applied and Theoretical Statistics and has been involved in a number of data science initiatives. Horton previously served as an associate editor, section editor, and guest editor for the *Journal of Statistics and Data Science Education.* Upon his appointment as editor in 2022, we asked him a few questions about the journal and his editorial goals.

Why and when was *JSDSE* established?

The journal, originally named the *Journal of Statistics Education,* was founded in 1993 as an open-access journal with no author fees by North Carolina State University. It was started by the late Jackie Dietz and managing editor Tim Arnold. Their goal was to provide an outlet for high-quality articles about statistics education that could allow statistics educators to share their knowledge and be recognized for their work. It was founded an electronic journal at a time when relatively few existed. The journal was renamed in 2021 to acknowledge the growing role of data science.

Who is *JSDSE* for?

Articles in *JSDSE* are intended to be broadly accessible and to address the broad landscape of statistics and data science education. My hope is that instructors (from K–12 to graduate level), curriculum developers, and educational researchers benefit from the articles published.

Would you tell us a little about the other *JSDSE* editors?

The journal wouldn't exist without the efforts of the editorial board, which consists of six section editors (Jennifer Green, Matt Hayat, Laura Le, Kelly McConville, Kevin Ross, and Juana Sanchez) and 33 associate editors with diverse backgrounds and expertise. Each is responsible for carrying out peer-review of the papers submitted to the journal, making a recommendation regarding suitability for publication, and providing useful feedback to authors.

The journal also wouldn't exist without the hundreds of peer reviewers who contribute their time and expertise on behalf of the journal. I'm often struck by their insights and helpful ideas. The continuing pandemic has stretched everyone, but the reviewers continue to serve their critical and effective role.

Behind the scenes, ASA Journals and Publications Manager Eric Sampson, Editorial Coordinator Jean Scott, and Rebecca Corpier from Taylor & Francis help keep everything moving.

Why did you accept the position as editor?

I agreed to be editor because I believe in the mission of the journal as an open-access venue for data science and statistics educators to share best practices, research findings, and approaches to teaching. I've been involved as a member of the editorial board since 2010, serving as the section editor for data sets and stories and section editor for data science. As editor, it's been great to see how all the parts and pieces come together.

Have you made any specific changes to the journal, or do you plan to?

Former editor Jeffrey Witmer and his predecessors left me the journal in excellent health, so one of my main goals is to continue to do what they've done! In addition, I have been planning some other initiatives, including a special issue on reproducibility and responsible workflow and additional growth of our coverage of data science education. Finally, it's important to ensure the journal encompasses diverse, equitable, and inclusive characteristics. There are too many barriers to participation by authors, reviewers, and editorial board members. I'm committed to working on these important issues during my tenure as editor.

What is the most enjoyable part of being a *JSDSE* editor?

My work as an editor has been keeping me busy: There's a lot involved in processing the approximately 200 submissions per year and publishing three issues per year. Each paper is considered by two or three peer reviewers plus an associate editor and me. What's been most rewarding and enjoyable has been seeing how those comments and critiques shape and improve a paper. While multiple iterations are needed, the end result is worth the effort by the authors and review team. ∎

Students learn about career opportunities in statistics and data science.

This Fall, StatFest Is Coming to You

Committee on Minorities in Statistics Members

Each statistician and data scientist has had a unique career journey. At one point, however, most found themselves in a common position—students learning about their future field and wondering how they can have the kind of career they dream about. Many benefitted from interacting with other students and professionals with similar interests. While initiating those interactions may seem daunting, StatFest aims to provide a forum in which students are able to do just that.

StatFest 2022 is a free conference aimed at encouraging undergraduates who are Black, indigenous, or people of color and have quantitative interests to pursue careers or graduate studies in the statistical and data sciences. StatFest is in its 22nd year and will be held virtually for the third year in a row due to the COVID-19 pandemic. This year's event will take place on September 17.

During StatFest 2022, students will learn about career opportunities in statistics and data science. Panel discussions will illuminate career paths spanning industry, academic, government, and nonprofit sectors. A keynote address highlighting the speaker's career trajectory will demonstrate in detail the impacts statisticians and data scientists make at various points in their careers.

Students will also engage in a candid Q&A with a panel of graduate students to learn about navigating the application process and the steps to thriving as an aspiring researcher. At the same time, professionals will have the opportunity to collaborate on issues related to promoting diversity, equity, and inclusion in statistics and data science.

Finally, StatFest will feature opportunities for attendees to network with others and connect with institutions from the academic, industry, and nonprofit sectors.

StatFest 2021 attendees appreciated "the diversity of voices present," the opportunity to "gain a more informed perspective" for preparing for graduate school, and the way everyone at StatFest "wants to help each other," based on feedback from the post-event survey. Attendees also appreciated the "continuation of a quality program in a remote setting."

StatFest is made possible through the financial support of the ASA and several academic and industrial sponsors. If your organization is interested in supporting the event, contact **Adrian Coles,** Committee on Minorities in Statistics chair, at *adrian.coles@bms.com*. If you have questions about StatFest, contact StatFest 2022 co-chairs **Brittney Bailey** at *bebailey@amherst.edu* or **Therri Usher** at *therri.usher@fda.hhs.gov.*

StatFest is an ongoing initiative of the American Statistical Association through its Committee on Minorities in Statistics. The committee seeks to foster participation in statistics and data science by historically under-represented minorities. It focuses much of its effort on two key programs: StatFest, a pathway program, and the Diversity Mentoring Program, an early-career success program.

While the conference is free, registration is required. Visit the StatFest website at *https://community.amstat.org/cmis/events/statfest/statfest-2022* for more information and to register. ∎

External Control Arms: Key Elements

Jim Z. Li   Aaron Galaznik   Elizabeth Lamont   Kelly H. Zou

Applying artificial intelligence to constructing external control arms that support comparative analyses of single-arm clinical trials using historical clinical trial data or real-world data is an innovation that may enhance the effectiveness and efficiency of drug development through potentially reducing the number of patients, amount of time, and cost needed to advance the drug development cycle.

During the 3rd Annual Pharma AI Summit, with the theme "Leveraging Artificial Intelligence for Driving the Digital Future of Pharmaceutical Industry," four panelists discussed the key elements toward external control arms. The panel included the following:

- **Jim Z. Li,** Health Economics and Outcomes Research Team Lead, Global Medical Analytics and Real World Evidence, Viatris

- **Aaron Galaznik,** Chief Scientific Officer, Carevive

- **Elizabeth Lamont,** Senior Medical Director for Integrated Evidence Acorn AI, a Medidata Company

- **Kelly H. Zou,** Head of Global Medical Analytics and Real World Evidence, Viatris

> ECAs have particular value when randomized controlled clinical trials are infeasible or challenging . . .

Below are a few questions they answered.

What is an external control arm?

A collection of patients from outside a clinical trial of interest (i.e., target trial) whose outcomes are compared to target trial patients. ECAs have historically been assembled from varied data sources, including disease registries, clinical care data, billing claims, and historic clinical trial data. They can provide useful insights when randomized controlled trials are not possible due to ethical or logistical reasons.

Why consider ECAs for clinical trials?

ECAs have particular value when randomized controlled clinical trials are infeasible or challenging, such as when there is difficulty recruiting patients, severe disease, and paucity of treatment options. In the case of severe diseases without treatment options, having a concurrent comparator may be challenging. In such situations, ECAs may supplement or replace such a comparator to allow investigators to make inferences regarding the efficacy of a novel therapy.

Additionally, ECAs may have value early in the clinical development process through either or both of the following:

1. Informing a go/no-go decision after phase I or phase II trials are complete

2. Providing more accurate effect size estimates, which might ensure the likelihood of well-planned and adequately powered subsequent randomized controlled trials

ECAs may be particularly vital to the timely approval of new therapies for conditions for which it is historically difficult to carry out randomized controlled trials.

Can ECAs help achieve patient diversity?

Because they are created from external data sources, ECAs have the potential to reflect a broader, more diverse patient population than can be accessed within any single randomized controlled trial. This is true whether external controls are created from pooled trial data or real-world data sources. In the case of real-world data sources, one can further extend to populations not normally found in clinical trials or enhance generalizability of the comparator population pool.

Additionally, when ECA's are constructed via close matching of patients with trial participants, one can further compare patients selected for the ECA versus those who are not to better quantify and contextualize the generalizability of a trial population.

How do you construct ECAs?

It usually follows a three-step approach. The first step is to identify appropriate data sources, which can be from historical randomized controlled trials or real-world data sources. Data from large and well-conducted randomized controlled trials for the same disease may be suitable when conducted following the International Council for Harmonisation of Technical Requirements for Pharmaceuticals for Human Use's good clinical practice. Such data usually is more accurate and complete than real-world data sources, has baseline demographic and clinical characteristics variables that are similar to the target clinical trial, and is more likely to use similar definitions for disease and measures for outcomes.

The second step is data processing, which includes data ingestion, deidentification, cleaning, and standardization to generate a robust, validated, and analysis-ready data file with the same structure and formats as the data in the target clinical trial.

The last step is data-matching via appropriate statistical and data science methodologies to match and select patients from the analysis-ready data file into a particular ECA. This step is to ensure the selected patients in the ECA will have the same, or highly similar, characteristics as the patients in the target clinical trial.

While there are multiple methods for patient matching, propensity scoring is probably the most used method. This method is also widely used in studies reporting real-world evidence studies, although regression-based adjustments can also be used in those studies.

More advanced methods such as Bayesian mixed models with commensurate and power prior distributions, random forests, neural networks, cluster analysis, and microsimulation have also been used or explored for patient matching. These advanced methods provide a fertile ground for statistics to intersect with data science through machine learning and AI technologies. ∎

Statistics Education and Reconsidering the Status Quo

Suzanne Thornton is an assistant professor at Swarthmore College, where she teaches undergraduate statistics. Her research interests include the measurement and analysis of social constructs, ethical statistical practice, and the philosophy of science. She hopes her teaching and research work can contribute to the development of accessible educational material in support of statistical literacy for the general public.

Imagine an introductory statistics instructor is teaching students about categorical variables, maybe even discussing how to include these variables in a linear regression model. To keep her students engaged, the instructor asks the students to think about the difference between categorical and numeric variables and solicits examples. The first student to raise their hand confidently exclaims "gender!"

I suspect the majority of you have experienced some version of this story yourselves—either as the student or the instructor. Gender is probably the most common example of a categorical variable in the history of statistical education. Societal structures within and beyond the United States reinforce a binary understanding of gender and encourage us to conflate gender with sex. This is so prevalent that professional scientists can go their entire lives without realizing that both gender and sex are multidimensional constructs. (The former deals with identity, expression, and social and cultural expectations and the latter with clusters of anatomical and physiological traits.)

The American Medical Association, for example, has acknowledged gender as spectrum and that a narrow limit on the definition of sex has public health consequences for transgender and intersex individuals (those born with differences in sexual differentiation).

My colleagues and I recently published an article in *Significance* magazine addressing this concept from a statistical perspective. In "Towards Statistical Best Practices for Gender and Sex Data," we provide statistical observations and recommendations concerning various measurement and analysis issues related to human gender and sex. We hope this article provides a simple starting point for statistical practitioners and educators to be better able to distinguish among concepts such as gender identity, gender expression, and sex so we can carefully identify which information is relevant for our analyses, center inclusivity and respect of study participants, and protect the privacy of vulnerable subpopulations.

There are many reasons why this statistical quandary has been on my radar, not the least of which is that my knowledge acquisition of gender diversity occurred simultaneously with my doctoral experience in theoretical statistics. As I journeyed through advanced statistics, I also learned some people prefer not to be limited by your (or my) definition of masculinity and femininity. I discovered hormone treatment therapy is not unique to transgender people, and I realized reproductive ability is an inaccurate measure of sex.

When it was time for me to teach introductory statistics, the conventional gender-binary statistics examples were no longer the simple cases of categorical data analysis I had been taught years ago. Instead, my new knowledge opened an opportunity for a much deeper discussion of measurement and quantitative analysis. What I have subsequently discovered is that the topic of measuring gender and sex in human studies is a rich area that can engage modern statistics students with a deeper understanding of measurement in quantitative analysis. In "Towards Statistical Best Practices for Gender and Sex Data," I argue that this question is no less intriguing for professional statisticians, as well.

In a classroom setting, an instructor can walk students through the process of defining a categorical variable. For instance, I may ask students how gender is typically categorized. And then follow up by asking, "Who might be excluded or miscategorized based on our variable definition?" And even, "When is it risky to exclude such individuals?"

This is an opportunity to engage with students in discussions about scientific dogma and the role of ethics in data science, not just measurement. The success of such a discussion depends on the instructor's ability to center respect for the experiences and identities of gender nonconforming (e.g., transgender or nonbinary) or intersex people who, of course, may be present in the classroom.

What we decide to measure and how can affect the scope of our conclusions. In some classes, I have taken the opportunity to include actual examples that allow students to work through this critical thinking process on their own. Consider the following paired questions that relate to evaluating quantitative evidence for or against gender discrimination.

Example

Suppose a large, global supermarket chain is facing a class-action lawsuit for gender discrimination in its job promotion practices. Each store location employs people at two levels: floor worker and supervisor. The claim of the lawsuit is that whether or not an employee is promoted to a supervisory level depends on that employee's gender identity. To investigate this claim, a random sample of 100,006 supermarket employees is obtained from all store branches in the US.

Question 1

One of the prosecutors suggests collecting gender identity data on this sample of employees and counts those among each position that identify as a woman or not.

Gender Identity	Floor Worker	Supervisor
Woman	31,133	12,005
Not Woman	41,269	15,599
Total	72,402	27,604

The table above summarizes their findings. *Is there evidence of discrimination at an =0.10 level of significance?*

Question 2

An intern who works for the prosecutor has recently taken a statistics class and has a different idea. They suggest that, instead of categorizing gender according to a binary system, it is more appropriate to interview these 100,006 employees and ask them if their gender is best described as "cisgender male," "cisgender female," or "transgender or gender nonconforming." (For questions such as this, I provide my students with additional educational material to clarify terms with which they may not be familiar. For instance, see "What do transgender and cisgender mean?" (*https://bit.ly/390jSQW*)

Gender Identity	Floor Worker	Supervisor
Trans or GNC	1994	6
Cis Woman	40,354	8,809
Cis Man	43,372	5,471
Total	85,720	14,286

The table above summarizes their findings based on this alternate classification of gender.

Is there evidence of discrimination at an =0.10 level of significance?

For those not wanting to practice these calculations, this example is contrived specifically to illustrate how a failure to reject in Q1 (*p*-value=0.1642) can become a rejection of the null with redefined levels of the categorical predictor in Q2 (*p*-value<0.001).

In a statistical sense, this example is not unlike other textbook examples that illustrate tests for a difference in proportions or chi-squared tests for homogeneity. Consider, for example, the Florida death penalty discrimination example in Chapter 2.3.2 of *Categorical Data Analysis* by Alan Agresti. However, in a broader social context, this example is perhaps more unusual than others because it uses statistical reasoning to challenge societal norms and the status quo. It promotes statistical reasoning in relevant modern contexts. It encourages statistical learners to question other social norms measured in similar ways, such as race and class. Considering the historical proximity of the development of the statistics field and eugenics, perhaps this is a beneficial exercise for every introductory statistics class.

Statistical analysis is crucial for distinguishing between what is science and what is not. But measurement and quantitative analysis are subjective and will always correspond to a particular way of viewing the world. According to *Data Feminism* by Catherine D'Ignazio and Lauren Klein, "[D]ata are not neutral or objective [and] are the products of unequal social relation[.]"

Historically, when statistics practitioners and educators have ignored this, our society has become instilled with 'scientific evidence' for determinants of a 'superior' race, justifications for social inequities, and even justifications for slavery. For statistics to move into the well-lit future of fostering inclusion and valuing diversity, we must consider the perspectives from which data is collected and analyzed. This may, in fact, involve reconsidering the status quo. ∎

Fanni Natanegara
Research Adviser and Group Leader

> Through ASA, I feel a sense of belonging and a sense that I am part of something bigger . . . so, I am hooked!

It was the summer of 2002 and I was a third-year graduate student at Baylor University when my professor encouraged me to attend JSM and apply for job opportunities. That year, JSM was in New York City and housing was predictably expensive. Through the ASA website, I discovered a more affordable housing option by pairing up with other attendees and splitting the cost. I remember thinking, "How COOL is that?!" This organization carefully thought through a way to make attendance more affordable and convenient for graduate students like me. This was my introduction to the ASA.

The following year, I started working for Eli Lilly and Company, a pharmaceutical company based in Indianapolis. I spent the next few years as a clinical project statistician learning about drug development and working across therapeutic areas. By 2010, I took on a new role in which I focused on Bayesian applications in pharmaceutical research.

The SPAIG committee met virtually in April 2021 using Teams in together mode to create this fun theater view for their monthly meeting. From top left corner to right: Ying Ding, Julia Lee, Scott Clark, Michelle Shardell, Fanni Natanegara, Mark Otto, Willis Jensen, Michael Lavine, John Kolassa. Not pictured: Renee Ellis, Donna LaLonde, and Matilde Sanchez-Kam.

I became part of a larger network of statisticians across the industry, government, and academic sectors with this common research interest. I began attending JSM once again, more regularly this time, as well as the ASA Biopharmaceutical Section Regulatory-Industry Statistics Workshop to share my research work and learn from others. Through these meetings, the ASA provided a home for us to engage in scientific discussions, exchange ideas, and collaborate.

By a stroke of serendipity, I was made aware of the opportunity through the Bayesian network to become an industry representative for the ASA SPAIG (Statistical Partnerships Among Academe, Industry, and Government) Committee in 2015. SPAIG's mission is to lead and promote initiatives that foster connectivity and collaborations across the academic, industry, and government sectors. This mission is very much aligned with my work as a pharmaceutical statistician. While I was thrilled about the opportunity to become more active in the ASA, I was unsure about how exactly I could contribute.

Under the leadership of then SPAIG chair, Kelly Zou, I quickly found my footing in the committee by volunteering for small tasks such as taking meeting minutes and putting together an announcement template for the annual SPAIG Award. These small tasks led to bigger tasks such as writing *Amstat New*s articles and chairing and organizing SPAIG-sponsored JSM invited sessions and annual speaker with lunch events.

My research and collaborative work in the Bayesian pharmaceutical application gave me ideas for collaboration topics and speakers for our sponsored events. Making this connection between research and committee work has been personally rewarding. And more importantly, it has been fun working with a group of talented and enthusiastic ASA liaisons and cross-sector committee members who are always ready to make new connections and come up with new ideas, ranging from growing industry and government partnerships with academia to making internship opportunities more widely known, accessible, and equitable to students.

Being part of the SPAIG Committee and taking on a leadership role as vice chair and then chair of the committee have offered me a glimpse of the ASA's mission to promote our profession and make a positive contribution to society. Through the ASA, I feel a sense of belonging and a sense that I am part of something bigger. I also meet new friends and gain some transferable skills along the way. So, I am hooked! I only wish I had gotten more active with the ASA sooner in my career.

I look forward to continuing my ASA journey, learning more about the statistical community, and understanding how, together, we can continue to make a meaningful impact on the larger community. ∎

Johns Hopkins Student Awarded ASA/AAAS Mass Media Fellowship

Photo by Gayathri Menon

Jayati Sharma

To quote W. Edwards Deming, "If you don't know how to ask the right questions, you will discover nothing." As the ASA's 2022 AAAS Mass Media and Science and Engineering Fellow, Jayati Sharma will spend the summer sharpening her ability to ask questions as a science journalist with *The Wichita Eagle* and *Kansas.com*.

Sharma completed her master's degree in genetic epidemiology this May from Johns Hopkins University, where she used statistical methods to understand interactions between genetic ancestry, acculturation, and other lifestyle variables and their relationship with a genetic risk score for high BMI. She earned her bachelor's degree in both public health quantitative methods and molecular and cellular biology in May 2020 from the University of Arizona.

Community-oriented nutrition has been her passion since high school. She has conducted research projects to improve diet quality in minority populations in India and Southern Arizona.

Sharma applied for the mass media fellowship for an opportunity to hone her writing, journalism, and storytelling skills. She noted that, in today's ever-divided and increasingly divergent ideological climate, "scientific storytelling remains an important but underutilized way to use humans' inherent curiosity as a means to highlight our similarities over our differences."

In her application, Sharma stated she is most interested in writing about epidemiology and public health, specifically to share stories about both systemic issues that plague these fields and new innovations that arise despite them. Her goal is to effect tangible change as a public health professional.

"We're looking forward to Jayati's time as part of the Eagle newsroom this summer," wrote Michael Roehrman, Wichita Eagle editor, in an email to the ASA. "Her perspective, scientific curiosity and passion for sharing information that helps people will be a boon for our readers."

About the fellowship, Sharma said she's "honored to have the support of ASA for this summer's AAAS MMF and excited to write about and explore public health and statistical concepts relevant to community-level issues and local journalism."

Beginning in 2017, the ASA's sponsorship has allowed the fellowship program to expand its efforts to promote statistical capacity in reporting and provide statisticians with more media experience. Previous fellows are Nick Thieme, Irineo Cabreros, Diana Cai, Jessica Craig, and Aparna Nathan.

A call for 2023 fellows will be issued this fall. Find out more about the ASA/AAAS Mass Media Fellowship by visiting the AAAS website at *www.aaas.org/fellowships/mass-media*. ∎

MORE ONLINE
Follow Jayati Sharma's work via Twitter, @jayatirsharma.

STATS4GOOD

ASA Science Policy Supports Data for Good

David Corliss is lead, Industrial Business Analytics, and manager, Data Science Center of Excellence, Stellantis. He serves on the steering committee for the Conference on Statistical Practice and is the founder of Peace-Work.

Every month in *Amstat News*, I look forward to reading the My ASA Story Series. It is full of inspiring career journeys and includes how the ASA has played an important role. All of us have a story to tell!

Much of mine could be described as the "road less traveled." As a student, I was most attracted to a small area of science (astrophysics) and an even smaller specialty (statistical astrophysics, specifically time series analysis of evolving populations). Despite this, I was able to find support from professors and even funding from the National Science Foundation all because of the advocacy of people who understood the importance of basic science research and the impact it can have on our society for the greater good. I didn't realize until years later how useful this science is for, in my case, human rights research. But others who supported me and funded my work understood the potential.

The mission statement of the American Statistical Association calls on us "to promote the practice and profession of statistics." In carrying out this mission, the ASA's efforts necessarily extend beyond science to areas such as education, public awareness, and conferences, just to name a few. One of the ASA's most important functions—and one that has a particularly strong impact on promoting data for good—is science policy and advocacy (*www.amstat. org/policy-and-advocacy*). The many dimensions of this work include advocating for using statistics in the development of data-driven policy at the state and federal levels, seeking funding for statistical research and methods, promoting scientific freedom, and upholding standards for scientific integrity and ethical practices.

These efforts are organized and led by Steve Pierson, the ASA's director of science policy. Steve has supported the ASA and the wider statistical community in this role for more than 14 years, during which he has had a large and enduring influence on the prestige of statistics as a profession, the role of statistical science in government, funding support, and the beneficial impact of statistics on society.

The ASA also supports a science policy fellow, who works for one to two years in Washington, DC, and serves as an advocate for statistics, statistical agencies, and funding at the federal level. Our current fellow is Edward Wu, who recently earned his PhD in statistics and has a background in economic consulting.

The science policy team works with many others in academia, government, industry, and

nongovernmental organizations—often on D4G projects and research. As one example, 2020–2022 Science Policy Fellow Jonathan Auerbach, now at George Mason University, and Steve recently authored a study about the effect voting by mail has on voter fraud (*www.youtube.com/watch?v=KVxyjwNQYuU*).

One of the most important aspects of science advocacy at the ASA is support for funding of federal statistical agencies and financial support for research grants, with an emphasis on the National Institutes of Health and National Science Foundation. These advocacy efforts include directly contacting policymakers, sending letters, and partnering with other groups to support essential funding for agencies, staff, grants, and resource development. At the Joint Statistical Meetings in August, the ASA Committee on

Getting Involved

In opportunities this month, the next round of the Undergraduate Statistics Project Competition is accepting submissions for undergraduate student class projects and independent research. Submissions are due by June 24. For details, visit the USPROC website at *www.causeweb.org/usproc.*

Funded Research will again host a session on funding opportunities (*https://bit.ly/3PtZQz2*), during which attendees will have the opportunity to talk with people from granting agencies. It's an ideal way to get in touch with sources of funding and ask questions about your next D4G project.

Another way the science policy team carries out the ASA's mission is through Count on Stats (*www.amstat.org/policy-and-advocacy/count-on-stats*), a public awareness campaign that fosters the importance of properly performing statistical analysis. The ASA science policy team also files amicus briefs in legal cases involving statistics. (The briefs are great places to get bits of language to quote in educational materials and grant proposals—for example, "Statistics is a noble science with a rich history of benefiting humanity" from the Supreme Court case *Wolf v. Innovation Law Lab*.)

The driving force behind the ASA's advocacy is simple and straightforward: Good science makes for good policy, which makes it possible to direct staff, funds, and resources to where they will do the most good. Sound data-driven policy benefits everyone and helps us make our ASA story a Data for Good story, as well. ■

STAT*tr@k*

Building a PORTFOLIO Increases Your JOB PROSPECTS

Meg Ruyle, ASA Graphic Designer and Production Coordinator

Matthew Krachey is a data scientist at ZenBusiness, focused on experimentation, risk, and marketing. He studied statistical ecology at North Carolina State University.

Esther M. Pearson is a statistician, technologist, researcher, and adjunct professor in the graduate school of mathematics and data analytics at Franklin University.

Philip Waggoner is the director of data science at YouGov America and a research scholar at Columbia University. *https://pdwaggoner. github.io.*

During the COVID-19 pandemic, Matthew Krachey—a member of the ASA Committee on Career Development—was concerned early-career statisticians would be at a disadvantage when job hunting because they wouldn't necessarily have as much in-person experience as candidates during non-COVID times.

So, Krachey proposed an initiative in 2021 to the ASA Committee on Career Development that would introduce statisticians and data scientists to the latest technology for developing an online professional portfolio (*https://ccdportfolio.netlify.app*). "Someone with two years of experience in clinical trials will seem much more attractive than a new graduate," Krachey said. "Building a portfolio with a blog that has well-presented advanced material would be a more effective way to allow hiring managers to understand the abilities of a candidate."

The goal for the project is to teach scholars, researchers, and practitioners of all backgrounds and skill levels to cultivate a strong online presence. "It is important to build an online portfolio to be able to efficiently advertise your work and build your network," Phillip Waggoner, portfolio project lead, and Esther Pearson, Committee on Career Development member, wrote in an email. Both are active developers of the Portfolio Project. "There is increasing demand, especially for younger scholars and practitioners to show, not tell," they continued.

It's also important for those looking to change industries or fields. This may be an opportunity to demonstrate some aptitude for someone switching from academia, industry, or government to a new area, Krachey said.

The online portfolio is a powerful and easy way to show previous work and public analyses. "Synthesizing and reprocessing past work can be useful for mastering elevator pitches of one's work and learning how to communicate technical ideas better, which is a master skill for experienced statisticians," Krachey said.

Employers often want to find out more about a candidate than they can glean from a social media site. "LinkedIn and related sites are more geared toward networking, with much less attention paid to showcasing work, skills, and abilities," Waggoner and Pearson wrote. "While a valuable tool, these types of online networking sites should, in our opinion, be considered a complement to an online portfolio, rather than a substitution for one."

> We are envisioning the **Portfolio Project** as a living project with new posts, tips and tricks, and other content dedicated to helping researchers and practitioners develop and strengthen their online presence.

Dr. Daniela Witten
@daniela_witten

Plz, plz, plz, HELP ME (& other senior faculty) HELP YOU.

Make a good website --- easy to find, organized, & up-to-date.

I'm eager to support & promote junior researchers. But if I can't find key info about you from a quick Google search then I'll move on to the next person.

Krachey agrees. "An online portfolio would be well at home in a LinkedIn bio, but it would be easy to post links to specific blog/analysis entries to share," he said.

Tweets such as the one from Daniela Witten above show a strong web presence is necessary today.

Waggoner and Pearson recommend thinking about the online portfolio as a home base from which to link professional sites such as LinkedIn, Google Scholar, and GitHub. Some academics have a similar site, often hosted by their institution, but Waggoner and Pearson imagine the portfolio to be like an academic website 2.0: portable and with more content, better organization, and a crisp, streamlined design.

Getting Started

Since the purpose of the project is to make it easy to create portfolio blogs, the committee chose to use R's blogdown package (*https://pkgs.rstudio.com/blogdown*), which lets users create websites with little initial configuration and simple blog posts using R Markdown.

"Blogdown uses Hugo (*https://gohugo.io*) to generate the websites, which is fast and highly customizable, but it should be noted that these websites are not dynamic," Krachey said. "We use a free-tier Netlify (*www.netlify.com*) account that publishes the website updates within about a minute of a pull request."

In general, people need to set up a GitHub account (free), download RStudio, and read the first chapter, "Get Started" in *Blogdown* (free at *https://bookdown.org/yihui/blogdown*), wrote Waggoner and Pearson. "This will get people up and running."

Using these basic tools will demonstrate a level of technical proficiency, but using a more complicated tech stack than what the committee recommends would be one way of showing more advanced technical ability. "There are certainly a lot of bells and whistles that could be added, like dynamic content, but for the goals of creating a site that documents thoughtful analyses, visualizations, and such, the Hugo-R Markdown stack should work for most," Krachey said.

The Committee on Career Development's Portfolio Project is ongoing. "We are envisioning the Portfolio Project as a living project with new posts, tips and tricks, and other content dedicated to helping researchers and practitioners develop and strengthen their online presence," Waggoner and Pearson wrote. "Thus, keep an eye out for new content." ■

MORE ONLINE
Visit the Portfolio Project at *https://ccdportfolio.netlify.app.*

Michael Hudgens and Rajan Patel Honored

From left: Michael Hudgens, Mike Kutner, Rajan Patel, and Rob Krafty

At the 2022 Eastern North American Region of the International Biometrics Society Annual Meeting in Houston (March 28–30), Michael Hudgens was honored as the winner of the 2019 Kutner Alumni Award and Rajan Patel was honored as the winner of the 2021 Kutner Alumni Award. Both Hudgens and Patel were officially presented with their award plaques by Rob Krafty, chair of the Emory Rollins School of Public Health Department of Biostatistics and Bioinformatics.

Hudgens earned both his BS and MS degrees in mathematics from the University of Florida and his PhD in biostatistics (2000) from Emory University. His PhD adviser was Elizabeth (Betz) Halloran. From the beginning of his doctoral program, Hudgens worked independently and brought immense technical rigor to each project using his mathematics background. He is an active, productive, and creative methodological researcher having co-authored more than 200 peer-reviewed papers in leading statistical journals and high-profile medical journals.

Hudgens became a fellow of the American Statistical Association in 2012 and won the Edward G. McGavran Award for Excellence in Teaching at The University of North Carolina at Chapel Hill in 2015. He has taught causal inference in the Summer Institute on Statistics and Modeling of Infectious Diseases at the University of Washington each summer (with one exception when he taught in South Africa) since 2009. Currently, Hudgens is the associate chair of the department of biostatistics at UNC Chapel Hill. He also serves as the biostatistics core director for UNC's Center for AIDS Research.

Patel earned his BS and MS degrees in computer science from Rice University before entering Emory's doctoral program in biostatistics in 2002. He earned his doctoral degree in 2006 while working with his adviser, DuBois Bowman, developing novel statistical methods to analyze functional connectivity of the brain using functional magnetic resonance imaging data.

Patel worked at Amgen as a senior biostatistician and then a biostatistics manager from 2006–2007. He conducted statistical analyses for early-phase clinical trials and pre-clinical trials. He joined Google in 2007 and was the statistician on the team that developed Google Flu Trends, a publicly available tool that mines Google Search logs for flu-related activity and estimates influenza-like illness rates in the US. He developed the querying model used to predict influenza-like illness rates.

Patel has always been able to combine his deep statistical understanding with his background in computer science to solve hard technical challenges, like understanding the natural language in Search or images with Google Lens to build beautiful and simple products that have affected billions of people. For his numerous contributions to Google over the last 14 years, Patel was promoted to vice president of engineering in the consumer shopping group team leader for Google Search. ∎

ASA Fellow **Mark Becker,** who is president of Georgia State University, will serve as the next president of the Association of Public and Land-Grant Universities, effective September 1.

"Mark brings a critical blend of institutional and higher education community experience that make him uniquely qualified to serve as APLU's next president," said Rebecca Blank, chair of the APLU Board of Directors and chancellor of the University of Wisconsin-Madison. "His longstanding engagement with APLU—including as a member of the board of directors—and [his service as] a former board chair of both the Coalition of Urban Serving Universities and the American Council on Education, will allow him to hit the ground running. I expect him to further strengthen and advance the work of APLU's members and advocate for public and land-grant universities' interests in Washington when he assumes leadership of APLU later this year."

Trained as a statistician, Becker has had a distinguished career in biostatistics and public health sciences. For most of his professorial career, he was a member of the faculty in the department of biostatistics at the University of Michigan, where he also held appointments in the Institute for Social Research and department of statistics. He is a fellow of the American Association for the Advancement of Science and

was a guest editor for *Sociological Methods and Research* and the *Journal of the American Statistical Association.*

Read more about Becker's appointment at *https://bit.ly/389Z75i* ∎
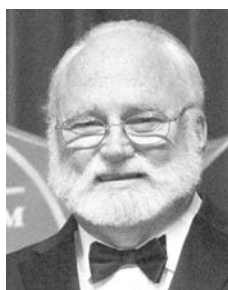
Peace

The President's Visionary Award was given to ASA member **Karl E. Peace** during the Gratitude Gala hosted by Georgia Southern University April 1. He was honored for his lifetime support and transformational giving to the university.

"The Gratitude Gala is a chance for us to celebrate you," Trip Addison, vice president for university advancement, said to the group of awardees. "Each one of you has gone above and beyond in your support of the university, and for each student who is chasing an incredible dream, your support is helping them to take hold of it."

Karl E. Peace grew up humbly in southwest Georgia and worked seven part-time jobs to help fund his college education at Georgia Southern. His story is one of perseverance and determination, and he has made it a mission to give back.

After graduating from Georgia Southern, Peace went on to earn a PhD in biostatistics and make his mark on the pharmaceutical industry, including contributing to the first drugs the US Food and Drug Administration approved for the prevention of NSAID-induced gastric ulceration, reduction of coronary heart disease risk, and the treatment of Alzheimer's Disease.

Discouraged by the lack of public health and biostatistics degree programs in his native state, Peace named and endowed the Jiann-Ping Hsu College of Public Health at Georgia Southern—the first school or college of public health in the University System of Georgia—after his late wife. He is also the architect of the MPH in biostatistics, which is the first biostatistics degree program in the USG.

Through the years, Peace has endowed numerous scholarships to help recruit outstanding students to Georgia Southern. He created the Karl E. Peace Center for Biostatistics on campus, as well as faculty chair positions and graduate assistantships for the Jiann-Ping Hsu College of Public Health. He also created scholarships for students from Baker County, where he grew up, so they can attend Georgia Southern University and have the same opportunities he had. In total, Peace has created 14 endowed funds at Georgia Southern that generate more

than $200,000 annually for the university to assist students with their degree programs.

Peace is the recipient of more than 50 awards, including the first President's Medal for outstanding contributions to Georgia Southern, the USG's Regents Hall of Fame Award, GSU Outstanding Alumnus, and Outstanding Researcher. Finally, he has been cited for contributions to biostatistics and public health by both houses of Congress and both houses of the congressional bodies of Georgia and Virginia. ■

Ingrid Van Keilegom of KU Leuven in Belgium was awarded an honorary doctorate by the University of A Coruña (UDC), Galicia, Spain, on June 16. The ceremony was held in the auditorium of the UDC rectorate in conjunction with the International Symposium on Recent Advances in Statistics. Eight invited speakers who have collaborated with Van Keilegom presented their work. For more information about the symposium, visit *http://dm.udc.es/symposium_2022*. ■

Sam Behseta, ASA Fellow and professor of mathematics at California State University, Fullerton, is this year's recipient of Fullerton's 2022 Outstanding Professor Award. Behseta was selected based on his exemplary contributions as an educator and scholar. "In data science, it is critical for students to develop a solid understanding of the basic concepts in theoretical and

Behseta

practical aspects of probability, statistics, and computing early on," Behseta said. "Many students mistakenly believe this will be too hard for them. I tell them, 'If you fail, it's because I failed as a teacher. It's my job to help you understand.'"

Behseta has supervised the work of more than 50 undergraduate researchers, many of whom are first-generation students, and has taught a large number of applied mathematics and statistics classes, including graduate and undergraduate. But if he had to pick his favorite classes to teach, it would be his introductory classes. "In those classrooms," Behseta said, "I have found some of the most outstanding research students, who in their own right are now pathbreaking educators or visionary data scientists."

Beyond being a beloved teacher, Behseta is also an accomplished researcher who has published extensively, a director for the Center for Computational and Applied Mathematics at California State University, Fullerton, and a former editor of *CHANCE* magazine (2011–2013).

Read more about this award and what students have said about Behseta at *https://bit.ly/3kQNKlo*. ■

Obituary

Walter Richard Young

Submitted by Lolita Young

Walter Richard Young passed away at the age of 83 on February 11, 2022, following a brief but intense battle with brain cancer.

Walter was born in Manhattan in 1938. He was awarded two master's of science degrees from New York University in 1960 and 1962 in chemical engineering and operations research.

After brief stints as a process engineer and market analyst, Walter retired from Wyeth in Collegeville, Pennsylvania, in 2005 with 41 years of service as a principal clinical programmer. He was an expert in a number of computer programming languages (including SAS) and graphics and authored dozens of publications in his field.

Walter joined the Metropolitan Section of the American Society for Quality Control in 1962. He served various roles in the ASQ for nearly 60 years and considered his 52-year tenure as chair of the annual Deming Conference on Applied Statistics to be one of his greatest achievements. He wrote about his years serving as chair in "Some Nonstatistical Reminiscences of My 45 Years of Chairing the Deming Conference" (*https://bit.ly/3vYPuPF*).

In his later years, Walter valued his family above all else. He was fond of films, books, traveling, and all manner of food. He was an avid player of Pokémon Go since its initial release in 2016 and enjoyed playing Animal Crossing online with his family during the recent pandemic.

When casually asked how he was, Walter's typical response was simply, "I'm still ALIVE." He will forever remain that way in the hearts of those he left behind.

Walter is survived by his wife, Lolita; his daughter, Katharine; his two sons, Peter and Walter (Albert); and their wives, Melissa and Maria.

Obituary

Edward Lee Frome

A longtime ASA member, Edward Lee Frome passed away on December 31, 2021. He confronted his progressive medical challenges from primary orthostatic tremor with optimism, courage, and tenacity.

Ed was born in Baltimore, Maryland, on April 19, 1942. In his youth, he enjoyed basketball, adventures at Aunt Kate's farm, and summer days with relatives on the Eastern Shore. He developed his work ethic while assisting in his grandfather's greenhouses, growing potted chrysanthemums and geraniums and then selling them on the streets of downtown Baltimore.

Ed attended Baltimore Polytechnic Institute in the ninth grade. In 1957, his father was relocated to Lockheed Martin in Orlando and the family moved to Florida, where Ed graduated from Winter Park High School. He was a member of the Order of DeMolay, an international fraternal organization for young men ages 12–21.

Ed attended the University of Florida in Gainesville, where he was a member and treasurer of Beta Theta Pi fraternity. He earned a bachelor's of science degree in physics with a minor in psychology and went on to earn his master's degree in statistics at UF in 1966.

After college, Ed moved to Oak Ridge, Tennessee, to join the Medical and Health Sciences Division at Oak Ridge Associated Universities, where he provided statistical analysis for cytogenetic research and radiation dosimetry. His research was supported by NASA, in search of understanding the effects of whole-body radiation, which led to Ed's first research publication in *Aerospace Medicine* in April of 1969.

In 1968, funded by a research fellowship from the National Institute of General Medical Sciences, Ed moved to Atlanta to attend Emory University and pursue a PhD in biostatistics. There, after a friendly tennis match in the spring of 1970, he found his perfectly matched soulmate, Ann, napping in the grass under a tree beside a flowing stream. He wrote of Ann in his final poem: "A warm heart and a patient smile, Michelangelo's beautiful women, that's how I think of you. Whenever I see a beautiful garden, I know there must be a gardener sleeping under a tree, somewhere. I see myself in you." They were married in 1971.

With the mentorship of his adviser, Michael H. Kutner, Ed earned his PhD and then served as a postdoctoral research fellow in anesthesiology in the school of medicine at Emory University, where he performed the real-time statistical analysis of heart and respiratory sounds during open-heart surgery. He developed and applied new statistical methods based on numeric spectrum analysis to monitor respiratory function.

In 1973, Ed and Ann moved to Austin, Texas, where he was an assistant professor of statistics-operations research and an associate member of the graduate faculty at The University of Texas. He taught undergraduate and graduate courses in sampling, regression analysis, and time series. He was also a research associate with the Center for Cybernetic Studies and the Drug Dynamic Institute. Ed provided the application of statistical methods to bioavailability studies in the statistical analysis of clinical drug trials. In 1977, Ed returned to Oak Ridge to continue his preferred biomedical research in cytogenetics and radiation dosimetry.

Ed joined the Mathematics and Computer Science Division at Oak Ridge as a member of the senior research staff in 1981 and worked there until his retirement in 2007. His responsibilities were research in biostatistics and long-term collaborative research with scientists in several fields. In 1987, he became a principal investigator for the Oak Ridge statistics group's research efforts in biostatistics and epidemiology. He was also a co-investigator on an NIH-funded grant to study the effects of neutron radiation on chromosome aberrations. In addition, Ed served as an adjunct professor at the University of Tennessee and school of public health at The University of North Carolina. He was a consulting scientist for the Oak Ridge Institute of Science and Education. In the late 1990s through the turn of the century, Ed served as a member of the Agency for Toxic Substances and Disease Registry, Oak Ridge Reservation Health Effects Subcommittee, and Oak Ridge Environmental Quality Advisory Board.

Ed led research design in establishing epidemiological studies of nuclear workers to determine if low levels of radiation exposure resulted in adverse outcomes. Research in this area had been underway for many years but received improved structure and rigor with Ed's input. Data was collected and analyzed from film badges and death certificates of 118,000 former Oak Ridge nuclear workers. Coincidentally, Ed and Ann bought their home in 1977 from health physicist Ernest O. Wollan, inventor and developer of the film badge.

Ed was instrumental in studies to determine if survivors of Hiroshima and Nagasaki experienced adverse radiation effects. His statistical work at Oak Ridge included several studies of hazardous exposure in the workplace. He was instrumental in spearheading the development of a software system to analyze beryllium exposure, which incorporated his original statistical approach and was adopted by beryllium labs across the country.

Ed is best known for his central role in the development of Poisson regression methods. The statistical methods he developed and refined provide a major tool for statisticians around the world in the analysis of biomedical data and are widely used by epidemiologists and clinical and experimental scientists.

He also developed new algorithms for least absolute value regression based on linear programming methods, widely used in pharmacokinetics. He was the first to show how Poisson regression methods could be used to analyze cytogenetic dose-response data. He also developed an efficient algorithm used to verify Poisson variation in situations where the data may be sparse.

During Ed's career, he authored 68 statistical research papers, resulting in 2,080 citations by other researchers and 5,386 reads. He clearly was the most highly cited author in the area of Poisson regression modeling, with his 1983 *Biometrics* manuscript, "The Analysis of Rates Using Poisson Regression Models," cited 547 times. He was often asked to give papers at national scientific meetings and write review articles in his areas of expertise. In addition, he wrote dozens of technical reports and proceedings.

Ed was elected a fellow of the ASA in 1996 in recognition of his many years of diligent work and outstanding contributions to the statistical profession. He exhibited exceptional competence both methodologically and in specialized areas of application and demonstrated a sustained record of technical leadership. He was also an exceptional experimentalist and innovative theoretician with a national reputation. Among his major achievements were the development and refinement of Poisson regression methods and advances in understanding the health effects of exposure to ionizing radiation.

Ed served as an associate editor for the *Journal of the American Statistical Association* from 1983–1993. In 2005, the ASA presented him with the Exemplary Service Award in acknowledgement of his service as the ASA webmaster from 1998–2005. He was the chair of the 1985 ASA Conference on Radiation and Health. Upon retirement in 2007, the ASA awarded Ed a lifetime membership for the wealth of knowledge and prestige he brought to the study of statistics and the association. Ed was also a member of the International Biometric Society and Radiation Research Society. He was an editorial collaborator for statistics for the *Journal of Radiation Research*.

In 2014, Ed was an inaugural recipient of the Michael H. Kutner Distinguished Alumni Award from Emory University. This honor was in recognition of his distinguished service to the statistics discipline and his lifetime career achievements.

Ed's statistical career was an unwavering, quiet quest for truth and knowledge through statistical research and innovation, with meticulous attention given to thoughtful study design, accurate data collection, and robust statistical methods. During his career, Ed advised many graduate students and was considered to be a thoughtful and positive mentor who encouraged and facilitated students to realize their full potential.

In 1982, Ed developed a home-based summer computer camp for children, thus providing a 20-year enrichment program for their two children, numerous young friends and

relatives, and hundreds of Oak Ridge youth.

Ed began attending First Presbyterian Church in 1966 and enjoyed assisting Ann with teaching Sunday School in the preschool and kindergarten classes. He connected with children through a unique sense of humor, calm manner, and patience. Children brought out the ELF (his initials) in Ed, qualities he embraced and children enjoyed.

As a member of the Oak Ridge Tennis Club, Ed played league and family tennis. He supported Ann in coaching middle school and United States Tennis Association junior team tennis for 30 years. In his earlier years, he enjoyed hiking, biking, jogging, and taking walks with Ann. He logged more than 3,600 visits at the Cardiac Rehab program in Oak Ridge. Ed delighted in play with his young grandchildren, especially indoor ball during his home-bound years.

Ed is survived by his devoted wife of 50 years, Ann Frome; cherished children, Daniel Frome (Stephanie) and Julie Park (Deacon); adored grandchildren, Jackson Frome, Ella Frome, and Carlee Anne Park; two beloved sisters, Donna Deverell (Chris) and Kathy Dennis (Jim); and numerous cousins, nieces, and nephews who have enriched his life. He is also survived by the family indoor cats who provided endless entertainment and enjoyment.

Obituary

M. K. Srirama

M. K. Srirama, an ASA member for nearly five decades, passed away peacefully on December 20, 2021.

Srirama was a gold medalist in MS mathematics in India. He earned his MPH and PhD in biostatistics from the University of California, Berkeley, and then went on to earn his MBA from the University of Michigan, Ann Arbor.

He worked in the pharmaceutical industry, namely at Parke-Davis, Pfizer, and as vice president at Kendle International. After retirement, Srirama missed work and was not satisfied sitting at home and resting on his laurels, so he went back to work as the senior director of biostatistics at Quintiles.

His other passions included Karnatic music—classical music from south India—and playing the violin. He was also supportive of his wife, Malini, in her scholastic and artistic pursuits.

He is survived by his wife; his daughter, Madhu; his son, Rohith; and multiple extended family members.

How Can We Help?

We want to help you share your own news with colleagues and showcase your latest successes.

It is important to us that everyone knows about your research, recent awards, and promotions!

If you have any news you would like to share, email *megan@amstat.org*.

Nominations Sought for Links Award

THE LINKS

Constance Citro   Robert Groves   Fritz Scheuren

The Links Lecture Award Committee is seeking nominations of candidates who have contributed to the advancement of official statistics and have the ability to share a compelling vision for further progress through an inspiring and engaging lecture.

The award's focus encompasses forward-looking issues in official statistics such as increased use of administrative records and alternative data sources; record linkage; blended estimation techniques; and associated issues such as privacy, confidentiality, researcher access, and reproducibility of results. It should be noted that seniority in the profession is not a necessary criterion for selection.

The first of the annual series of lectures was held in 2018. Awardees include Frauke Kreuter of the University of Maryland/Michigan Joint Program in Survey Methodology, Bruce Meyer of The University of Chicago, Daniel Goroff of the Alfred P. Sloan Foundation and National Science Foundation, and Lisa Mirel of the National Center for Health Statistics.

The lectures have ranged in focus from relatively conceptual to relatively applied. In the most recent lecture, Mirel discussed the important innovations in data linkage at the National Center for Health Statistics to support evidence building. All the lectures have contributed to advancing our understanding of the possibilities for official statistics and motivating additional work.

The Links Lecture Award, the only ASA award specifically focused on official statistics, was created by the ASA Board in 2017 to honor three major links in the progress of official statistics: Constance Citro; Robert Groves; and Fritz Scheuren. In sometimes overlapping and sometimes independent ways, each of them has contributed to our advancing beyond the traditional methods of official statistics, especially in the incorporation of administrative data and other nontraditional data sources.

To nominate someone for the 2022 award, submit a nominating letter, supporting letter, and current CV at *https://form.jotform.com/AmStat/links-lecture-award* by July 1. Self-nominations are allowed.

The award comes with a modest honorarium and reimbursement of travel expenses. The lecture will take place in the autumn, at a time agreeable to the speaker. Normally, the lecture is presented in Washington, DC, to directly engage with the federal statistical community. ∎

Deadlines and Contact Information for Select ASA National Awards, Special Lectureships, and COPSS Awards

AWARD	DEADLINE	QUESTIONS & NOMINATIONS
Links Lecture Award	July 1	*awards@amstat.org*
Health Policy Statistics Section Achievement Awards	September 15	*www.asahealthpolicy.org/for-students*
Lester R. Curtin Award	October 15	*awards@amstat.org*
Deming Lecturer Award	October 15	*awards@amstat.org*
Lingzi Lu Memorial Award	October 15	*awards@amstat.org*

45th Annual Midwest Biopharmaceutical Statistics Workshop
June 20–22, 2022 • Renaissance Hotel, Carmel (Indianapolis), Indiana
Statistics: Making an Impact

Thank You

The following individuals have made vital contributions to the success of the workshop

Workshop Co-Chairs
  Vipin Arora of Eli Lilly
  Ena Bromley of Analytika, Inc

Track Chairs

Biomarkers/Preclinical and Discovery
  Lin Li of PharmaLex

Chemistry, Manufacturing and Controls
  Yangbin Zhang of AbbVie

Clinical
  David Manner of Eli Lilly

Real World Evidence
  Wanzhu Tu of Indiana University and Purdue University

Programming and Data Visualization
  Xuelin Li of Eli Lilly

Registrar
  Cindy Lee of Eli Lilly

Treasurer
  Wei Zhou of Eli Lilly

Student Session Co-Chairs
  Veavi Chang and Jayme Gonzales of Eli Lilly

Cofounders
  Charles B. Sampson (In Memory)
  Mir Masoom Ali (retired)

Additionally, we would like to acknowledge the contributions of the session chairs and speakers, all of whom are listed on the website.

HALF-DAY SHORT COURSES
  • *Using Python for Exploratory Data Analysis and Statistical Inference: A Hands-On Short Course* by MELVIN MUNSAKA (AbbVie)
  • *Clinical Tables in R with GT* by PHIL BOWSHER (R Studio)

MONDAY PLENARY SESSION

  Recommendations and Considerations for Umbrella and Platform Trials
    GREGORY LEVIN, CDER, FDA
  Application of Real-World Evidence in the Drug Development Cycle
    CHRISTIAN NGUYEN, Eli Lilly

The main tracks will include the **Clinical** covering topics on Bayesian approaches for incorporating auxiliary clinical and observational data in clinical trials, novel trial designs, and digital health; **Preclinical, Discovery and Biomarkers** with topics on statistical approaches for biomarker and diagnostics, Bayesian approaches to preclinical and developmental statistics, and statistical approaches for discovery and preclinical research; **Chemistry, Manufacturing and Controls** with topics on simulation and modeling, statistical applications in manufacturing, and Bayesian methods for CMC; **Real World Evidence** which will include discussions on the role of RWE in decision making and current thinking and practice, and experiences using in precision medicine through artificial intelligence and data science; **Programming and Data Visualization** which will focus on advances in health data visualization. Most tracks have at three sessions of at least two hours in length with 3–4 speakers. Speakers have time to discuss topics in more detail than at many conferences, and participants will have ample opportunity to ask questions and participate in discussions. Additionally, speakers from the FDA and other governmental agencies will be invited to give presentations.

A **student-focused** session organized by Veavi Chang and Jayme Gonzales of Eli Lilly, will be part of the workshop.

BANQUET SPEAKER
  CHARLIE SHIN (VP of Data Strategy & Analytics, Indianapolis Colts) – *The Growing Importance of Data and Analytics in Sports Business*

Contributed posters are being accepted for the poster session, to be held on Tuesday, with Ying (Grace) Li of Eli Lilly serving as the chair. The poster session focuses on drug development. Posters will be considered on any biopharmaceutical statistical topic. Students may submit posters for the Charlie Sampson and Mir Ali Poster Award. Deadline for submission is June 30th, 2022.

www.mbswonline.com

Questions not addressed on the website can be sent to the Publicity Chair Melvin Munsaka (melvin.munsaka@abbvie.com) or the Workshop Co-Chairs, Vipin Arora (varora@lilly.com) and Ena Bromley (ena.bromley@gmail.com)

MBSW was co-founded by Charles B. Sampson and Mir Masoom Ali and is co-sponsored by the ASA Biopharmaceutical Section. MBSW, which was founded as a conference to meet the needs of U.S. pharmaceutical industry statisticians in the Midwest has, welcomes attendees from across the United States and around the world.

ASA AWARDS & RECOGNITION

Know of a deserving person who should be considered for ASA recognition? The ASA's extensive awards program recognizes statisticians who have made outstanding contributions through areas such as:

- RESEARCH
- CONSULTING
- TEACHING

- STUDENT SCHOLARSHIPS

- SERVICE
  to the association or profession

Nominate Someone Today!
www.amstat.org/awards

Many ASA sections and chapters offer their own awards.
Visit the section and chapter websites to view their offerings.

Nominations Wanted for 2021 Griffith Mentoring Award

Nominations for the 2021 Jeanne E. Griffith Mentoring Award (*https://bit.ly/3P7KTCm*) will be accepted until June 30. The award recipient—a supervisor, technical director, team coordinator, or other statistical staff member—will be selected for his or her efforts to support the work and develop the careers of junior staff in the statistical community in federal, state, or local government. Preference will be given to individuals with a track record of mentoring government statisticians. Examples of typical mentoring activities include the following:

- Advising junior staff to help them create career opportunities, networking skills, and contacts for growth and development

- Counseling junior staff and providing resources to help develop their technical writing, analysis, presentation, and organizational skills and knowledge

- Encouraging the growth and career development of junior staff through attendance and oral presentations at meetings with higher-level officials, staff of other agencies, professional associations, training courses, and conferences

- Motivating junior staff and building self-confidence by providing feedback, being a listener when needed, and creating a caring and supportive environment

- Serving as a role model for junior staff through professional expertise; information and insight; the balance of collegial and personal roles; and the inclusion of everyone regardless of rank, race, ethnicity, gender identity, or seniority

The award was established to honor Jeanne E. Griffith, who died in August 2001 after working for more than 25 years in the federal statistical system. Throughout her career, and especially in her latter senior management positions at the National Center for Education Statistics and National Science Foundation, one of Griffith's highest priorities was to mentor and encourage younger staff at all levels to learn and grow, as well as recognize and seize career opportunities as they came along.

The award committee will determine the award winner by the end of July. The award will consist of a $1,000 honorarium, citation, and plaque, which will be presented at a ceremony arranged by the cosponsors.

Recent Jeanne E. Griffith Mentoring Award Recipients

2021: Carol V. Caldwell

2020: Rajeshwari Sundaram

2019: Sharon Boivin

2018: Howard Hogan

2018: Carol Gotway Crawford

2017: Cynthia Ogden

2016: Diane K. Willimack

2015: Aldo "Skip" Vecchia

2014: J. Gregory Robinson

2014: Kenneth C. Schoendorf

2013: Brian Harris-Kojetin

2012: William P. Mockovak

The nomination package must be emailed to ASA Professional Development and Sections and Chapters Manager Rick Peterson at *rick@amstat.org* or mailed to the Jeanne E. Griffith Mentoring Award Committee c/o The American Statistical Association, 732 N. Washington St., Alexandria, VA 22314-1943.

Questions can be addressed to Peterson or award committee chair, Raji Sundaram, at *sundaramr2@mail.nih.gov.* ∎

AWARD SPONSORS

American Educational Research Association	Government Statistics Section, ASA	Social Statistics Section, ASA
American Institutes for Research	Interagency Council on Statistical Policy	Washington Statistical Society, ASA
Council of Professional Associations on Federal Statistics	Research Triangle Institute	Westat

Contact Bill Mockovak at *Bmockovak@msn.com* to co-sponsor the award.

Papers Being Accepted for ICHPS Travel Award

International Conference on Health Policy Statistics

Upgrading the Pipeline from Health Data to Health Policy

January 9–11, 2023 • Scottsdale, Arizona

Students at any level, as well as 2022 graduates who submit an abstract by June 30, can submit a written paper to be considered for a travel award to the International Conference on Health Policy Statistics.

To be considered, papers must present a solution to or a clear advance in a real-world health policy problem. Thorough and appropriate statistical analyses of health policy problems, issues, or questions pertinent to the goals of the ASA Health Policy Statistics Section (see *ww2.amstat.org/sections/pdfs/HPSSCharter.pdf*) are particularly encouraged. Identification of an important problem, correct application of study design and statistical methods, and clear interpretation of study results with discussion of potential policy impacts will be assessed as part of scoring.

The research proposed or described does not have to be complete, but applicants must submit a draft paper that describes the planned research and nature of the intended health policy application(s).

Applicants must submit the following information by September 15 at 11:59 p.m. ET using the online form at *https://bit.ly/3FBM20I:*

- Name (last/surname, middle initial, first)
- Email address

Blinded Paper Tips

1. Provide a title page without names and affiliations of authors.
2. Use the third person to refer to work the authors have previously undertaken (e.g., replace any phrases like "as we have shown before" with "… Author name has shown [citation]").
3. Make sure figures do not contain any affiliation-related identifiers.
4. Do not eliminate essential self-references or other references, but limit self-references to papers that are relevant for those reviewing the submitted paper.
5. Remove references to funding sources.
6. Do not include acknowledgments.
7. If the paper or poster provides links to data or code used for the analysis (e.g., on GitHub), replace any references to online materials with generic statements such as "data and code for the analysis are available online."
8. Remove any identifying information, including author names, from file names and ensure document properties are also anonymized.

- Phone number, including country and area code

- Actual/expected graduation date (mm-dd-year)

- Institution affiliation

- Department

- US state of the institution (if outside US, enter Non-US)

- Country of the institution if outside US (if within US, enter N/A)

- Name and email of the adviser and/or program director (include the adviser's email in the online submission)

- Submitted ICHPS 2023 abstract ID for paper or poster

- Blinded copy of (draft) paper, showing progress toward the proposed research with title page that includes ICHPS abstract ID and title of presentation (see tips)

- Justification up to 1,200 characters (excluding spaces), with a statement of need for travel assistance and how ICHPS 2023 may affect and benefit the study or research

- If the applicant is not the first author, provide a description of the applicant's role in the project and paper or poster, plus the first author's contact information

All applications will receive full consideration. The program committee hopes to present awards to as many qualified applicants as possible; however, the committee cannot guarantee every applicant will receive an award due to limited funding.

Email *meetings@amstat. org* with any questions. ∎

sectionnews

Teaching of Statistics in the Health Sciences

Officers of the Teaching of Statistics in the Health Sciences Section recognize the following award winners for 2021:

- Best Contributed Presentation Award - **Philip Sedgwick,** Institute of Medical and Biomedical Education, St. George's University of London, for "Trials and Tribulations of Teaching NHST in the Health Sciences" in the Joint Statistical Meetings session Innovations, Updates, and Best Practice

- Young Investigator Award - **Mine Dogucu**, University of California, Irvine, "Web Scraping in the Statistics and Data Science Curriculum: Challenges and Opportunities, *Journal of Statistics and Data Science Education*, DOI: 10.1 080/10691898.2020.1787116

- Outstanding Teaching Award - **Mary Sammel,** University of Colorado

- Distinguished Achievement Award - **Felicity Enders,** Mayo Clinic College of Medicine

- Outstanding Section Service Award - **Amy Nowacki,** Cleveland Clinic

To learn more about the section, visit its website at *https://community.amstat.org/tshs/home.*

ABSTRACT SUBMISSION FOR ICHPS

Contributed, poster, and roundtable abstracts will be accepted for consideration until June 30, 2022 (11:59 p.m. ET).

Only online submissions will be considered.

A limited number of contributed abstracts will be accepted. The program committee will select abstracts that clearly demonstrate the importance of the topic and quality of its contributions.
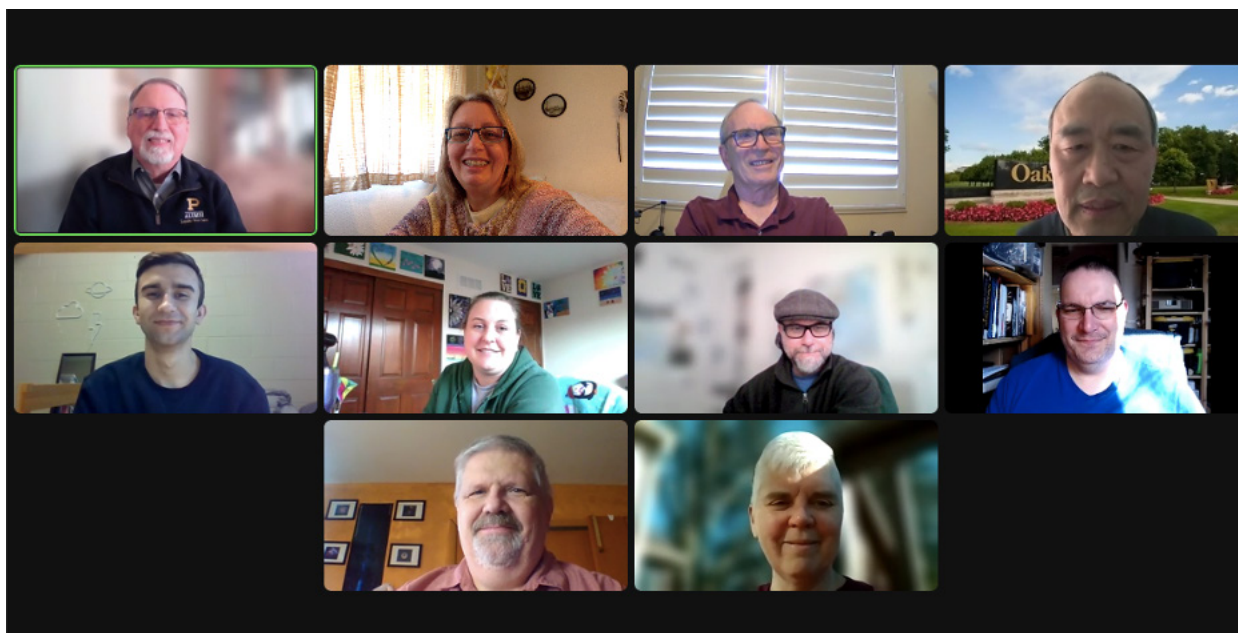
Visit the ICHPS website at *ww2.amstat.org/meetings/ichps/2023/ submitanabstract.cfm* for details.

International Conference or Health Policy Statistics

Detroit, Ann Arbor Chapters Promote Statistical Practice at Fair

Karry Roberts, ASA-Detroit Chapter Secretary

ASA judges from left, top: Frank Murdock, Karry Roberts, David Doane, Xianggui (Harvey) Qu, Jacob Manis, Jessica Kohlschmidt, Bern DeBacker, Andrew Ekstrom, David Corliss, and Jennie Jester

Judging Team Members

Jessica Kohlschmidt, District 3 Vice Chair

Detroit Chapter

Karry Roberts

David Doane

Xianggui (Harvey) Qu

Jacob Manis

Bern DeBacker

Andrew Ekstrom

David Corliss

Ann Arbor Chapter

Frank Murdock

Jennie Jester

Continuing their traditional joint chapter activity, members of the Detroit and Ann Arbor chapters and the District 3 vice chair served as a professional awards judging team at the Michigan Science and Engineering Fair, held virtually March 18–21.

The MSEF is the state level of the science fair, and there were 66 high-school projects that qualified from regional fairs to compete. Members of the judging team divided the projects for initial assessment with a scorecard, and then brought the best ones into their Zoom discussions. Winning projects showed an effective use of statistics.

The awards included one $200 Award of Excellence, six $50 awards of merit, and 16 recognition certificates (see table on the following page). In giving these ASA awards, the chapters' goal is to promote the practice and profession of statistics.

Seven of the ASA winners' projects will continue to the Regeneron International Science and Engineering Fair in May, having received grand awards in their field of science at the MSEF or regional fairs. Nine of the ASA award winners received grand through 4th-place category awards at the MSEF. Four of the students were repeat ASA winners from previous years.

The Award of Excellence went to Olivia Wagner for her project that emphasized innovative measurement techniques of Olympic uniforms and provided a detailed explanation of statistical analyses. ∎

Detroit and Ann Arbor Chapters Fair Winners

STUDENT	PROJECT	SCHOOL	GRADE	TEACHER
$200 AWARD OF EXCELLENCE				
Olivia Wagner	Quantitative Graphic and WSRA to Determine Olympic Gender Differences	Midland HH Dow HS, Midland, MI	9	Andrew Wagner
$50 AWARD OF MERIT				
Vikram Goddla	AI Solution for Effective Treatment Planning for Brain Tumor Patients	Detroit Country Day Upper, Beverly Hills, MI	10	Patricia Hanlan
Jad Habhab	Statistical Nature of Modern Music	Dearborn Center for Math, Science, & Technology, Dearborn Heights, MI	12	Jennifer Gorsline
Batule Hamka	Exploring the Potential Effect of PFAS on Plant Growth and Health	Dearborn Center for Math, Science, & Technology, Dearborn Heights, MI	11	Jennifer Gorsline
Rohit Mahesh	Can Your Shoe Detect Concussion?	Salem HS, Canton, MI	9	Marcia Lizzio
Kush Parikh with Timothy Mathew	COVision: CNN for Classification of COVID-19 and Non-Viral Pneumonia Using CTs	Troy HS, Troy, MI	10	Rebecca Brewer
Brian Zhang	Mental Stress Detection in Social Media: A Machine Learning Approach	Northville HS, Northville, MI	9	Gabriel Pak
CERTIFICATE OF RECOGNITION				
Rahul Barpanda	Tranilast Mitigates ER Stress: Induced RPE Cell Dysfunction in AMD	Detroit Country Day Upper, Beverly Hills, MI	12	Karen Lamb
Charlie Chen with Dylan Agha	The Final Solar Eclipse	Detroit Country Day Upper, Beverly Hills, MI	11	Patricia Hanlan
Kira Collins	Frictional Forte	Pioneer HS, Ann Arbor, MI	11	Steve Armstrong
Vijay Daita	Indicators of Complications After Cardiac Surgery	Bloomfield Hills HS, Bloomfield Hills, MI	11	Noelle Collis
Simran Gupta with Nurayda Albeez	Diving into the Great Lakes	International Academy - East Campus, Troy, MI	9	Jackie Toepel
Dillan Lau	Pneumonia Detection Through Advanced Machine Learning	Detroit Country Day Upper, Beverly Hills, MI	12	Rami Baroodi
Donald Liveoak	Schrödinger Bridges on Discrete Domains	Allen Park Senior High, Allen Park, MI	12	Larry Dunlap
Ruisi Ma	Correlation Between Selective Hunger and Stress Level	Detroit Country Day Upper, Beverly Hills, MI	11	Patricia Hanlan
Razzi Masroor	Matching Preclusion and Bipartite Dual-Cube-Like Networks	Detroit Country Day Upper, Beverly Hills, MI	10	Mitchell Eithun
Angela Matta	Adolescents and Multilevel Marketing: How Susceptible Are They?	Dearborn Center for Math, Science, & Technology, Dearborn Heights, MI	12	Jennifer Gorsline
Jett Miller	The Effect of Fracking on Thermal Conductivity and Seismic Wave Transmission	Saginaw Arts and Sciences, Saginaw, MI	10	Matthew Miller
Harish Narayan	Optimal Design & Development of a Photovoltaic Panel	Salem HS, Canton, MI	9	Marcia Lizzio
Arnav Nikam	Development and Statistical Validation of a Refined CAPE Ratio Algorithm	Salem HS, Canton, MI	11	Marcia Lizzio
Mikul Saravanan	Novel Multipurpose Air Handling Robot with AI-Based Anomaly Detection	Cranbrook Kingswood Upper School, Bloomfield Hills, MI	11	Stephanie Kokoszka
Andrew Wagner	Hydrogen and Oxygen Gas Production from Water for a Marine Engine	Nouvel Catholic Central HS, Saginaw, MI	11	Mary Wagner
Margaret Yang	Engineering Compositionally Uniform Whole-Cell Biocatalyst for Biofuel	Cranbrook Kingswood Upper School, Bloomfield Hills, MI	12	Stephanie Kokoszka

SOCIAL CHATTER

If you named **your pet** using a statistical method or term, what would it be?

Eric J. Daza, DrPh @ericjdaza
Roverdispersion

Dr. Robin Donatello @norcalbiostat
Mew

GAMS Model @GAMSmodel
Probit, Logit, and Tobit

Shikta Das PhD MSc (she/her) @shikta_das
Anova

Grace Flores-Robles @gfloresrob
I had a pet rat named Cohen

Dylan L Armbruster @dylanarmbruste3
Cox Proportional Hazard Model. But you can call him Rusty as well

Bengu Cilali @BenguCilali
Pearson or Spearman

Anirban Mandal @anirban_12
Dog and cat: lasso and ridge

Chary Akmyradov Phd @AkmyradovChary
I have 3 cats (grey, black-white and bronze long hair): I could have named them as loggi (logistic), binny (binary), fitzy (fits)

Mike Baiocchi @BaiocchiMike
Two dogs: Spike and Slab

I.A.B @IbanDlank
Tukey in Hebrew means "parrot." I think some statistician somewhere ought to get a bird.

Nishi Dsouza @nishi_dsouza
Kruskal-Wallisl

Kenneth Hung @KenHungkk
I've always wanted to name a pair of cats (or twins), Martin and Gale.

Dr. Miranda Lynch @gammagirllab
My officemate as a postdoc named his dog Cauchy. Because he had a heavy tail!

Holly Hacker @hollyhacker
A cat name, Belle

Jason Brinkley
I'd get a cat with a long tail and name him Skew

Grover B Proctor Jr.
If it were a cat, I'd name it Mu.

Adriana Crespo-Tenorio
Dog: Reverend Bayes

Steve Condrey
If I still had a Basset hound I would name it Bayes. Right now I have three pugs, I'd like to name mean, median, and mode

AMSTATNEWS
ADVERTISING DIRECTORY

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This month's "Top 10" is the "Top Ten **Bad Statistics Puns**."

Wasserstein

Amstat News introduces a new and typically "punny" offering by ASA Executive Director **Ron Wasserstein.** Each month, he will deliver a special "Top 10"—one that aired originally during a recent edition of the *Practical Significance* podcast. Enjoy!

PODCAST

To listen to the *Practical Significance* podcast, visit *https://magazine.amstat.org/podcast*-2.

10
The unfortunate student hadn't studied so, he just guessed that p-hat was another name for a bedpan.

09
When mathematical statisticians get carded, they show their IID.

08
Statisticians mean well.

07
What keeps a criminal statistician in a jail cell? Error bars. *(Yeah, of course.)*

06
Bayesian's favorite rapper is MCMC Hammer.

05
We thought about offering virtual JSM sessions by semaphore, but the plan raised red flags *(might have to think about that one a minute).*

04
At first, they thought the whole tree was involved, but it turned out only to be a stem and leaf plot.

03
I can state categorically that I hate data that are classified into a fixed number of distinct groups.
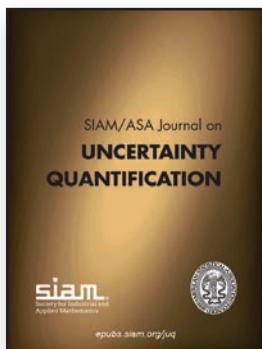
02
The Pythagorean theorem was named after the famous Greek mathematician Theorem.

And the #01 bad statistics pun? I like working on the variance or the standard deviation, but when it comes to measuring spread, I am most at home on the range.

Editors-in-Chief

Peter Challenor
University of Exeter

Sebastian Reich
Universität Potsdam

Publishes research articles presenting significant mathematical, statistical, algorithmic, and application advances in uncertainty quantification and related fields such as sensitivity analysis, model validation, model calibration, data assimilation, and code verification. The journal also solicits papers describing new ideas that could lead to significant progress in methodology for uncertainty quantification as well as review articles on particular aspects. The journal is dedicated to nurturing synergistic interactions between the mathematical, statistical, computational, and applications communities involved in uncertainty quantification and related areas.

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