ASA Celebrates Pride Month
While Urging Justice, Equity, Diversity, Inclusion

ALSO:
JSM 2021 to Be Held Virtually
Board Approves Revised Public Statement Process
Registration Is Open!

Key Dates for Participants
July 1
Draft Manuscript Deadline

Key Dates for Attendees
July 15
Regular Registration Deadline

August 8–12, 2021
VIRTUAL CONFERENCE
ww2.amstat.org/meetings/jsm/2021
features

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23  PASTIMES OF STATISTICIANS
    What Does Arshi Arora Like to Do When She Is Not Being a Statistician?
This column focuses on what statisticians do when they are not being statisticians. If you would like to share your pastime with readers, please email Megan Murphy, Amstat News managing editor, at megan@amstat.org.

24  STATS4GOOD
    ASA GivesBack: Volunteering Opportunities and Networking for Students and Early-Career Statisticians
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@peacework.org.

26  STATtrak
    Committee on Career Development Announces Initiative Lineup
STATtrak 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.
A Sense of Humor, Giving Space, Trying to Listen: Advice from 73 Years of Marriage

Herman and Judith Chernoff met at Brown University in 1945 when they were both graduate students in applied mathematics. They married in September 1947. For Judith and Herman, the secret to their 73 years of marriage is simple: “I give him space, and he gives me space,” said Judith. “That’s how we got along.” Herman is a longtime member of the ASA. Read more about this amazing couple in The Harvard Gazette at bit.ly/3brl0Ks.

Rhyme Time

To celebrate last month’s National Limerick Day, Larry Lesser of The University of Texas at El Paso wrote these original statistical limericks:

Lottery Strategy
The lottery numbers you choose
Won’t change your chance to lose,
But if all 6 match
You’ll get much more cash
If you picked what’s picked by few!

Simpson’s Paradox
When categories combine,
Sometimes you will find
What had trended
Now upended:
New correlation sign!

Significance
When doing hypothesis tests,
No threshold value is best.
It’s very contrived
To use point-oh-five
To say if you should be impressed!
Greetings, fellow statisticians. First, I would like to acknowledge that, in April, I was nominated by President Joe Biden to be the next director of the US Census Bureau. I have been deeply moved by and am appreciative for the messages of support I have received. I have not yet been scheduled for a Senate committee hearing. If confirmed, I will serve my country proudly, uphold our nation's Constitution, and do all I can to further the scientific integrity of the Census Bureau and federal statistical system more generally. I am a huge fan of both. In fact, as a young professional statistician, I often dreamed of working at the US Census Bureau—an institution I believe stands at the pinnacle of scientific excellence. I am honored and humbled that I might get a chance to serve in a position of leadership.

If/when I am confirmed, I will have the privilege of serving you, the statistical community, the public, and our nation in a different capacity than I do now. But until then, I will continue to proudly serve as your 2021 ASA president. So, let's turn to the president's corner.

For this issue, I'd like to illustrate how one might flip a research framework to create opportunity through a new perspective. I sometimes do this when working on policy issues as a reality check to the underlying premises of the issue at hand. For context, consider this excerpt from my blog last month:

We as statisticians are in an awesome position to help researchers think through these issues and understand the limitations and strengths of the statistical inferences that flow from rigorous research studies.

About two decades ago, I was asked to review a National Academies (NAS) report, titled *Eliminating Health Disparities: Measurement and Data Needs*. I eagerly anticipated the recommendations for future directions in research and data collection. And the panel report revealed some excellent recommendations. However, I believe the panel missed an opportunity for which I provided commentary: the need to collect data on health care providers and institutions in addition to clients as part of a comprehensive, systemic health disparity assessment.

My thinking was that health disparities are affected by both access to care and the quality of care delivered. And with regard to the latter, the quality of care is a direct outcome of a *two-way interaction* between health care workers/institutions and their clients. Moreover, health care institutions and their staff are naturally influenced by societal constructs such as how racial and ethnic minorities are served in the health system (e.g., with or without health insurance, steering to specific facilities). This even includes how vulnerable populations are portrayed in everyday life.

The NAS report recommendations focused exclusively on collecting better, more accurate, and standardized data on clients—the recipients of health care. Indeed, there was much that could be improved in this regard. In my review, I “flipped the research framework” to consider how health providers and their institutions (and broader society) have a role in health disparities. I thought to myself, “What data could be collected on the health care providers as well as their institutions that could inform health disparities and guide improvements in health care?”

My thinking was influenced by a health care research study in the 1990s. As I recall, it focused on health care providers and concluded a common sense finding: In situations where the health care providers learned and used some Spanish to interact with their Spanish-speaking patients, both client satisfaction and health care outcomes improved compared to care provided by monolingual English-speaking providers.
While most might think, “of course,” and move on, I saw something different. Given the growing demographic diversity of the US population and the blossoming of our multicultural nation, it seemed important to capture data on how society is acculturating to its wonderfully diverse population. Acculturation works both ways in an evolving society, yet the research world focuses on one side of the coin all too often, so to speak. Flipping the research framework to incorporate both the provider and patient could shed light on how culturally relevant interactions between patients and providers could improve health and reduce disparities.

Many times, statistical evaluations focus on a vulnerable group undergoing some program to make them behave differently without really understanding the root causes of the underlying behaviors. With critical thinking and discussion between statisticians and substantive researchers at the design stage, perhaps more inclusive research frameworks can be adopted, leading to enhanced insights and better outcomes.

Alas, my alternative perspective did not warrant a revision to the report, probably because it was considered outside the scope of the charge. I understood and was disappointed, but I still consider it an opportunity loss.

Fast forward to 2021, when I recently gave a keynote at Drexel University’s inaugural Population Health Symposium. The conference theme was the intersection of racism and health. Here, too, I chose to flip the research framework in my speech. Health programs aimed at Blacks, Indigenous people, and people of color (BIPOC) are typically couched in a framework of altering BIPOC client behaviors (e.g., alter dietary intake, strict adherence to prescription regimens). Yet the role of the providers and society more generally is not considered part of an integrated, interactive, two-player system.

Client health outcomes are influenced by the interaction between two sets of players: (1) the persons seeking health care and (2) health providers and their institutions. And let’s not forget greater society, essentially an extension of (2).

Health research to identify and reduce disparities—and structural racism—would be more effective by addressing both players, not just those who are oppressed. You see, everyone is a victim in a structurally racist society. That is why our nation’s reckoning with systemic/institutional racism—including the ongoing justice, equity, diversity, and inclusion (JEDI) efforts of the ASA—is so critical. We all have a role to play and work to do to improve things. Yet our policy research all too often bifurcates programs and research studies into some exclusively focused on providers and others focused only on clients. Moreover, we should recognize and address the role of greater society in reinforcing structural/institutional racism; it is typically ignored altogether.

Yes, statisticians are in an awesome position to offer critical thinking to statistical studies in all fields of research. We can flip the research framework by conversing with the research team and asking questions about the nature of the phenomena being studied, the populations involved and their interactions, as well as the appropriate measures and rationale behind expected outcomes. We can start with a systemic, encompassing framework that recognizes and “treats” all the players involved in an interactive system.

Simply having those conversations with researchers could lead to better framing of questions and ultimately more effective research designs, measures, and insightful inferences. Give it a try sometime!

Robert J. Horton
Highlights of the April 14–16, 2021, ASA Board of Directors Meeting

ASA President Rob Santos called to order the first 2021 meeting of the ASA Board on Wednesday, April 14. The board met via videoconference over a three-day period. The highlights of the board meeting follow.

Actions

The board …

• Updated the ASA’s Activities Conduct Policy and renamed the policy as the ASA Code of Conduct.
• Updated the ASA’s accreditation guidelines to incorporate the Code of Conduct.
• Made editorial appointments for eight ASA journals based on recommendations from search committees and the Committee on Publications. Terms will begin in 2022, but editorial transitions will begin soon.
• Accepted the results of the 2020 audit, another clean audit for ASA. (See Page 8 for details.)
• Changed investment advisers, agreeing to transfer management of the ASA’s assets to Vanguard.
• Set journal prices for 2022.
• Decided the format of JSM 2021 needed to be virtual and set registration prices.
• Simplified the membership category structure to improve efficiency and reduce costs.
• Recommended a change to the ASA bylaws to make the treasurer an elected position on the board. (See Page 7 for details.)
• Revised the process for determining when to take an official position on a policy-related issue based on recommendations from the ASA Committee on Scientific and Public Affairs.

Reports and Discussions

• Associate Executive Director and Director of Operations Steve Porzio summarized the end-of-year financials for 2020. He noted ongoing challenges with variations in revenue sources and indicated that costs will continue to be tightly controlled.
• ASA Treasurer Ruixiao Lu reported on the ASA’s investments. She reviewed the allocation of the ASA’s nearly $21 million among various types of investments as of March 31. Lu also updated the board on the activities of the Investments Committee and Audit Committee.
• Adrian Coles and David Marker, co-chairs of the ASAs Antiracism Task Force, updated the board on the progress of the task force. They reminded the board of the task force membership, the goals of the task force, the timeline for the task force, and the way the task force has organized itself to accomplish its tasks. They shared reports from each of the three subcommittees of the task force, emphasizing that the process is well underway and recommendations would be emerging later in the process.
• ASA President Rob Santos, President-elect Kathy Ensor, and Past President Wendy Martinez updated the board on the strategic initiatives they are planning or that are in progress. Information about them will appear in Amstat News.
• Council of Chapters Representative Anamaria Kazanis reviewed the activities of the council since November. The council discussed challenges faced by the chapters and is considering new approaches to addressing them. They are focusing on improving communication and leadership. Addressing chapter needs as related to current and future JSMs is also important.
Council of Sections Representative Mark Glickman reviewed the activities of the council since November. The council met once and Glickman and Council of Sections Governing Board (COSGB) Chair Sarah Kalicin met with the members of the Committee on Membership Retention and Recruitment. The COSGB is continuing to improve several ongoing programs and is considering a survey regarding the value of section and chapter membership.

ASA Vice President Matilde Sanchez-Kam, chair of the Membership Council, and Mark Otto, vice chair, reported on behalf of the council. For each of the committees in this council, they reported their major accomplishments in 2020, compared them to the previously reported planned activities, and looked ahead to activities for 2021. Issues for the board or staff were noted and will be followed up on.

ASA Executive Director Ron Wasserstein shared a draft paper considering changes to the way the ASA provides value and access to members. The paper defined what a membership model is, described the current ASA membership situation, and proposed new approaches. He asked for board feedback to help determine next steps. Armed with many suggestions, Wasserstein will continue to refine the proposal.

Wasserstein updated the board on activities related to the decision made at the last meeting to join CSAB, an entity involved in accrediting undergraduate data science programs. Everything is proceeding smoothly to merge the ASA into CSAB and the ASA has already had its first opportunity to provide feedback to the data science accreditation criteria.

ASA Director of Science Policy Steve Pierson provided his regular report on the ASA’s advocacy efforts. He noted that we have been more focused on the federal statistical agencies in the past few years, but we hope to broaden our focus going forward. He mentioned our work with the 2020 Census in developing quality indicators, efforts to interface with the new administration and the legislature regarding statistical agency budgets, and several other ongoing activities of the science policy office.

ASA Director of Development Amanda Malloy reported on development and fundraising activities and totals for 2020, discussed 2021 plans, and asked the board for feedback and advice, particularly with regards to developing more corporate partnerships. The board provided several suggestions for Malloy to take back to the Development Committee.

The next regular meeting of the board will be August 4–6 via videoconference. The board will hold a budget meeting on June 11.
At its April 2021 meeting, the ASA Board recommended changing the association’s bylaws to make the position of ASA Treasurer an elected position, thereby giving board voting rights to the treasurer. Currently, the treasurer is appointed by the board and does not have a vote. Given the duties and responsibilities of the treasurer, the board sees it as advantageous to have this position be a voting position on the board. Under the proposed changes, the elected treasurer would continue to be a non-voting member of the executive committee.

The board will vote in the late summer on accepting these changes. Per the rules set forth by our constitution and bylaws, the board seeks comments from ASA members on the proposed changes. Please send comments to ASA Executive Director Ron Wasserstein at ron@amstat.org by August 15, 2021.

Constitution, Article VI:
The President, President-Elect, Past President, Vice Presidents, representatives of the Council of Chapters, representatives of the Council of Sections, International Representative, Publication Representative and the Treasurer are the voting Board members. The Secretary is an ex officio member without vote. All voting members of the Board of Directors must be individual members of the Association for the five years preceding the start of their term of office.

Constitution, Article IX
Nominees for the positions of President-Elect, Vice President, and Treasurer are selected by the Committee on Nominations as described in Article V, Section 1 of the Bylaws.

The Secretary is selected according to Article V, Section 2 of the Bylaws.

Constitution, Article X
The Treasurer is elected for a three-year term and is not eligible for immediate re-election to the same office.

Bylaws, Article V, Section 1
Nomination. Each year, the Committee on Nominations will submit at least two candidates for President-Elect and at least two candidates for Vice President. The nomination process will include some means by which the Committee on Nominations ensures that the major employment sectors in which Association members work are represented over time. Every third year, the Committee on Nominations will submit at least two candidates for Treasurer.

For the offices of President-Elect, Vice President, and Treasurer, suggestions for nominations will also be solicited through publication of a notice in a news bulletin.

Bylaws, Article V, Section 5
Delete this section, which currently reads: “The Treasurer is appointed by the Board of Directors. The Treasurer is nominated by the Executive Committee per Article VII.”

Bylaws, Article V, Section 6
Renumber to 5.

The Treasurer is responsible for the duties assigned by the Constitution and Bylaws. The Treasurer serves as a voting member of the Board and as an ex officio member of the Executive Committee without vote.

Bylaws, Article V, Section 7.
Renumber to 6.

Bylaws, Article VII
The Executive Committee is responsible to nominate the Executive Director and to refer this nomination to the Board of Directors for action.

Likewise, the Executive Committee is responsible for nominating the replacement for a vacant position in the office of Vice President or in the office of Treasurer.

Bylaws, Article IX, Section 5b
The Budget Committee consists of the three Vice Presidents and Treasurer.
American Statistical Association

Financial Report
December 31, 2020

Contents

Independent auditor’s report
Financial statements
Statements of financial position 2
Statements of activities 3
Statements of cash flows 4
Notes to financial statements 5-19

Board of Directors
American Statistical Association

Independent Auditor’s Report

Report on the Financial Statements
We have audited the accompanying financial statements of American Statistical Association (the Association), which comprise the statements of financial position as of December 31, 2020 and 2019, the related statements of activities and cash flows for the years then ended, and the related notes to the financial statements.

Management’s Responsibility 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; this includes 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.

Auditor’s Responsibility
Our responsibility is to express an opinion on these financial statements based on our audits. We conducted our audits in accordance with auditing standards generally accepted in the United States of America. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the auditor’s judgment, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the Association’s preparation and fair presentation of the financial statements 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, we express no such opinion. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluating the overall presentation of the financial statements.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

Opinion
In our opinion, the financial statements referred to above present fairly, in all material respects, the financial position of American Statistical Association as of December 31, 2020 and 2019, 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.

Washington, D.C.
April 13, 2021

RSM US LLP
The American Statistical Association (the Association) was founded in 1839 and is a professional association serving statisticians and all individuals interested in the study and/or application of statistics to problems of science and society. The Association fosters education in statistics, and, in general, makes statistics of service to science and policy. The Association has an agreement with a third-party vendor to manage the sales of its educational materials. These sections facilitate professional interchanges and research opportunities in statistics.

Nature of activities:

The American Statistical Association (the Association) was founded in 1839 and is a professional association serving statisticians and all individuals interested in the study and/or application of statistics to problems of science and society. The Association fosters education in statistics, and, in general, makes statistics of service to science and public policy, fosters education in statistics, and, in general, makes statistics of service to science and society. The Association has an agreement with a third-party vendor to manage the sales of its educational materials. These sections facilitate professional interchanges and research opportunities in statistics.
The following schedule presents summarized financial information from the joint venture Technometrics, of activities for the year ending December 31, 2022. Unless the agreement is terminated during the entitlement contingency period, the sale is expected to provide the buyer a 14-month initial entitlement contingency period in order to obtain the necessary permits and approvals. During the entitlement contingency period, the Association is required to perform certain specified activities in order to remain eligible to sell the property. The Association will be reimbursed for its costs by the buyer for all services performed during the entitlement contingency period. The net sale proceeds to the buyer for the property would be approximately $124,719, respectively.

In July 2020, the Association was approached about selling one of its existing parking lots. In October 2020, the Association entered into an agreement to sell one of its existing parking lots for $512,773, 512,773. The sale does not provide the buyer with a 14-month initial entitlement contingency period in order to obtain the necessary permits and approvals. During the entitlement contingency period, the Association will be reimbursed for its costs by the buyer for all services performed during the entitlement contingency period. The net sale proceeds to the buyer for the property would be approximately $512,773.

In August 2020, the Association was approached by a developer about selling one of its existing parking lots. In October 2020, the Association entered into an agreement to sell one of its existing parking lots for $70,773, 219,637. The sale does not provide the buyer with a 14-month initial entitlement contingency period in order to obtain the necessary permits and approvals. During the entitlement contingency period, the Association will be reimbursed for its costs by the buyer for all services performed during the entitlement contingency period. The net sale proceeds to the buyer for the property would be approximately $219,637.

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

Note 3. Investments and Fair Value Measurements

The fair value hierarchy for investments is based on the lowest level input that is significant to the fair value measurement. The fair values are determined using the most recent available trade price where possible. The Association classifies investments at the time of purchase in one of the following categories: Level 1, Level 2, or Level 3, based on the lowest level input that is significant to the measurement.

Level 1: Quoted prices in active markets for identical assets or liabilities in active markets, observable inputs.

Level 2: Inputs other than quoted prices included in Level 1 that are observable for the asset or liability, either directly or indirectly.

Level 3: Unobservable inputs that reflect the Association’s own assumptions about market data inputs.

The Association’s investments are included in the notes to the financial statements. The following table presents fair value hierarchy levels for all investments:

<table>
<thead>
<tr>
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<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>U.S. government bonds (Level 2)</td>
<td>2,667,964</td>
<td>2,667,964</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mutual funds – International fixed income (Level 2)</td>
<td>12,171,126</td>
<td>12,171,126</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mutual funds – US fixed income (Level 2)</td>
<td>7,464,121</td>
<td>7,464,121</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other investments (Level 3)</td>
<td>10,000,000</td>
<td>10,000,000</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>20,203,211</td>
<td>20,203,211</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note 4. Property and Equipment

The carrying amounts of property and equipment consist of the following at December 31, 2020 and 2019:

<table>
<thead>
<tr>
<th>Description</th>
<th>2020</th>
<th>2019</th>
</tr>
</thead>
<tbody>
<tr>
<td>Land</td>
<td>1,316,500</td>
<td>1,316,500</td>
</tr>
<tr>
<td>Buildings</td>
<td>1,300,000</td>
<td>1,300,000</td>
</tr>
<tr>
<td>Furniture and equipment</td>
<td>512,773</td>
<td>512,773</td>
</tr>
<tr>
<td>Vehicles</td>
<td>8,541,220</td>
<td>8,541,220</td>
</tr>
<tr>
<td>Total</td>
<td>8,541,220</td>
<td>8,541,220</td>
</tr>
</tbody>
</table>

Depreciation and amortization expense, which is included in 'Other expenses', for the years ended December 31, 2020 and 2019, was $124,719, respectively.

Note 5. Bonds Payable

The Association has one issue of bonds payable outstanding as of December 31, 2020 and 2019. Bonds payable are presented at amortized cost and are stated at the principal amount due. Interest and dividends amount to $3,250,601 for the years ended December 31, 2020 and 2019, respectively. The Association is required to make semi-annual interest payments on the Bonds on May 1 and November 1, each year. The Bonds are callable on May 1, 2028, by the bondholder with 120 days’ notice. Interest and dividends are calculated at a fixed rate of 3.34% for the years ended December 31, 2020 and 2019.

Note 6. Liquidity

The Association relies on sufficient cash to cover its operating expenses during its annual business cycle. Cash in excess of amounts needed to cover operating expenses is invested in marketable securities and is included in cash and cash equivalents. As of December 31, 2020 and 2019, the Association’s marketable securities are comprised of U.S. government bonds. The Association’s marketable securities are all classified as Level 2 inputs.

Investments in marketable securities are classified in one of the following categories: Level 1, Level 2, or Level 3, based on the lowest level input that is significant to the valuation. The Association’s investments are included in the notes to the financial statements. The following table presents the fair value hierarchy levels for all investments:

<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>U.S. government bonds (Level 2)</td>
<td>1,364,993</td>
<td>1,364,993</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mutual funds – International fixed income (Level 2)</td>
<td>678,186</td>
<td>678,186</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mutual funds – US fixed income (Level 2)</td>
<td>4,151,329</td>
<td>4,151,329</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other investments (Level 3)</td>
<td>4,922,596</td>
<td>4,922,596</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>8,136,004</td>
<td>8,136,004</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note 7. Board Designated Net Assets

Board designated net assets represent funds designated by the Board of Directors for specific purposes. During the years ended December 31, 2020 and 2019, funds were designated as follows:

<table>
<thead>
<tr>
<th>Description</th>
<th>2020</th>
<th>2019</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pride Scholarship -</td>
<td>3,000</td>
<td>3,000</td>
</tr>
<tr>
<td>Aliaga Fund</td>
<td>10,000</td>
<td>10,000</td>
</tr>
<tr>
<td>Chambers Award</td>
<td>23,245</td>
<td>23,245</td>
</tr>
<tr>
<td>Total</td>
<td>36,245</td>
<td>36,245</td>
</tr>
</tbody>
</table>

Note 8. Disclosures by Not-for-Profit Entities for Contributed Nonfinancial Assets

The Association accepts contributions of nonfinancial assets at fair value. A not-for-profit entity also is required to disclose the fair value of assets contributed in the year received. The Association’s fair value of assets contributed is the intrinsic value of the asset as of the date of contribution.

Note 9. Disclosures for Periodic Announcements

The Association discloses periodic announcements for the years ended December 31, 2020 and 2019, which were comprised of the Association cash and cash equivalents, investments, and other financial assets. The Association discloses periodic announcements in its annual financial statements.
### American Statistical Association
#### Notes to Financial Statements

#### Note 8. Endowment (Continued)

<table>
<thead>
<tr>
<th>Fund</th>
<th>2020</th>
<th>2019</th>
<th>Increase (Decrease)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Karl E. Peace Award</td>
<td>625,098</td>
<td>880,402</td>
<td>(255,304)</td>
</tr>
<tr>
<td>Wilks Memorial</td>
<td>93,896</td>
<td>113,889</td>
<td>(20,993)</td>
</tr>
<tr>
<td>Deming Lecture Fund</td>
<td>53,960</td>
<td>53,960</td>
<td>0</td>
</tr>
<tr>
<td>Youden Award</td>
<td>67,598</td>
<td>67,598</td>
<td>0</td>
</tr>
<tr>
<td>Sirken Award</td>
<td>27,533</td>
<td>27,533</td>
<td>0</td>
</tr>
<tr>
<td>Cox Scholarship</td>
<td>148,246</td>
<td>148,246</td>
<td>0</td>
</tr>
<tr>
<td>Waksberg Award</td>
<td>84,627</td>
<td>84,627</td>
<td>0</td>
</tr>
<tr>
<td>Bernard Harris Fund</td>
<td>46,401</td>
<td>5,000</td>
<td>41,401</td>
</tr>
<tr>
<td>Aliaga Fund</td>
<td>4,992</td>
<td>1,000</td>
<td>3,992</td>
</tr>
</tbody>
</table>

#### Note 9. Endowment

<table>
<thead>
<tr>
<th>Fund</th>
<th>2020</th>
<th>2019</th>
<th>Increase (Decrease)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Karl E. Peace Award</td>
<td>625,098</td>
<td>880,402</td>
<td>(255,304)</td>
</tr>
<tr>
<td>Wilks Memorial</td>
<td>93,896</td>
<td>113,889</td>
<td>(20,993)</td>
</tr>
<tr>
<td>Deming Lecture Fund</td>
<td>53,960</td>
<td>53,960</td>
<td>0</td>
</tr>
<tr>
<td>Youden Award</td>
<td>67,598</td>
<td>67,598</td>
<td>0</td>
</tr>
<tr>
<td>Sirken Award</td>
<td>27,533</td>
<td>27,533</td>
<td>0</td>
</tr>
<tr>
<td>Cox Scholarship</td>
<td>148,246</td>
<td>148,246</td>
<td>0</td>
</tr>
<tr>
<td>Waksberg Award</td>
<td>84,627</td>
<td>84,627</td>
<td>0</td>
</tr>
<tr>
<td>Bernard Harris Fund</td>
<td>46,401</td>
<td>5,000</td>
<td>41,401</td>
</tr>
<tr>
<td>Aliaga Fund</td>
<td>4,992</td>
<td>1,000</td>
<td>3,992</td>
</tr>
</tbody>
</table>

#### Note 10. Expenses by Both Nature and Function (Continued)

<table>
<thead>
<tr>
<th>Category</th>
<th>2020</th>
<th>2019</th>
<th>Increase (Decrease)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Printing/publishing</td>
<td>5,177,083</td>
<td>5,186,096</td>
<td>(9,013)</td>
</tr>
<tr>
<td>Professional services</td>
<td>1,324,172</td>
<td>1,320,587</td>
<td>3,585</td>
</tr>
<tr>
<td>Supplies and equipment</td>
<td>27,051,384</td>
<td>27,051,384</td>
<td>0</td>
</tr>
<tr>
<td>Other expenses</td>
<td>1,299,266</td>
<td>1,299,266</td>
<td>0</td>
</tr>
<tr>
<td>Total expenses</td>
<td>25,784,838</td>
<td>25,784,838</td>
<td>0</td>
</tr>
</tbody>
</table>

#### Note 11. Commitments and Contingencies

The Association entered into certain contracts and agreements with various parties in the ordinary course of business. The following table provides information about payments to be made under these commitments as of December 31, 2020:

<table>
<thead>
<tr>
<th>Commitment</th>
<th>2020</th>
<th>2019</th>
</tr>
</thead>
<tbody>
<tr>
<td>Employment agreements</td>
<td>3,972,703</td>
<td>3,972,703</td>
</tr>
<tr>
<td>Rental agreements</td>
<td>1,146,017</td>
<td>1,146,017</td>
</tr>
<tr>
<td>Legal matters</td>
<td>629,620</td>
<td>629,620</td>
</tr>
<tr>
<td>Hotel space</td>
<td>540,000</td>
<td>540,000</td>
</tr>
<tr>
<td>Other commitments</td>
<td>747,135</td>
<td>747,135</td>
</tr>
</tbody>
</table>

| Total commitments | 6,055,475 | 6,055,475 |

#### Note 12. Exports by Both Nature and Function (Continued)

The financial statements report certain categories of expenses that are attributable to one or more supporting activities. The following table presents expenses by nature and function for the years ended December 31, 2020 and 2019:

<table>
<thead>
<tr>
<th>Category</th>
<th>2020</th>
<th>2019</th>
<th>Increase (Decrease)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Printing/publishing</td>
<td>5,177,083</td>
<td>5,186,096</td>
<td>(9,013)</td>
</tr>
<tr>
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<td>1,320,587</td>
<td>3,585</td>
</tr>
<tr>
<td>Supplies and equipment</td>
<td>27,051,384</td>
<td>27,051,384</td>
<td>0</td>
</tr>
<tr>
<td>Other expenses</td>
<td>1,299,266</td>
<td>1,299,266</td>
<td>0</td>
</tr>
<tr>
<td>Total expenses</td>
<td>25,784,838</td>
<td>25,784,838</td>
<td>0</td>
</tr>
</tbody>
</table>

#### Note 13. Endowment

The Association has a perpetual endowment fund, the American Statistical Association Endowment Fund, which was established in 1995. Contributions of cash and other assets are accepted, and distributions made from the fund are used to support the objects for which the fund was established. The fund is governed by a board of trustees, which consists of the President, two Past Presidents, and one other appointed by the Board of Directors. The fund is invested in accordance with the Association’s investment policy. The Association’s net investment income during the years ended December 31, 2020 and 2019, was $183,623 and $0, respectively.

### American Statistical Association
#### Notes to Financial Statements

#### Note 16. Exports by Both Nature and Function (Continued)

The financial statements report certain categories of expenses that are attributable to one or more supporting activities. The following table presents expenses by nature and function for the years ended December 31, 2020 and 2019:

<table>
<thead>
<tr>
<th>Category</th>
<th>2020</th>
<th>2019</th>
<th>Increase (Decrease)</th>
</tr>
</thead>
<tbody>
<tr>
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<td>27,051,384</td>
<td>0</td>
</tr>
<tr>
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<td>1,299,266</td>
<td>0</td>
</tr>
<tr>
<td>Total expenses</td>
<td>25,784,838</td>
<td>25,784,838</td>
<td>0</td>
</tr>
</tbody>
</table>

#### Note 17. Federal Grants

The Association receives grant funds from federal agencies. Revenue that such grants are recognized when earned. Unearned revenue is a liability. The amount of unearned revenue is presented in the accompanying financial statements. The Association has recognized unearned revenue of $12,000 related to these grants at December 31, 2020.
COMMITTEE SPOTLIGHT

ASA Statistical Partnerships Among Academe, Industry, and Government (SPAIG)

In your own words, what is the purpose of your committee?
Ying Ding: To me, the purpose of our SPAIG committee is to identify and promote initiatives and opportunities for establishing, expanding, and strengthening collaborations or partnerships across multiple entities (academic, industry, and government) in our profession and to acknowledge and recognize those outstanding collaborations that really make significant impacts in advancing research and influencing policy.

Fanni Natanegara: Cross-sector and interdisciplinary partnerships are essential in our statistics profession. The SPAIG Committee consists of nine members representing each of the three sectors: John Kolassa (Rutgers), Julia Lee (Northwestern), Ying Ding (University of Pittsburgh), Michelle Shardell (University of Maryland), William Scott Clark (Eli Lilly), Willis Jensen (W.L. Gore & Associates), Fanni Natanegara (Eli Lilly), Renee Ellis (US Census Bureau), and Michael Lavine (US Army). Our mission is to lead and promote initiatives that foster connectivity and collaborations across the sectors providing education, solving real-world problems, and advancing research.

Why did you accept the position to chair and co-chair the committee?
Ying Ding: I was very fortunate to be appointed by the ASA president-elect back in 2017 to serve on the SPAIG Committee, and then was reappointed in 2020 for my second term. Given my working
experience in both industry and academia, I have seen first-hand the many successful and impactful collaborations that greatly improve current practices or help solve real-world problems, which motivated me to contribute to this committee’s mission.

During my tenure in SPAIG, I learned a lot from working with all the committee members, as well as from communicating with ASA liaisons and officers. At the end of 2020, I was encouraged by Fanni Natanegara (the new chair-elect), who was my previous colleague at Eli Lilly, to serve as the vice chair of the committee. I am grateful for this opportunity, and I look forward to working with the entire committee toward our mission to further promote and advocate strong partnerships and collaborations in our profession.

**Fanni Natanegara:** SPAIG Committee members are appointed by the ASA president-elect for a three-year term and can be reappointed for a second three-year term. This year is my sixth and last year on the SPAIG Committee.

I have learned a lot during my tenure in SPAIG. Being part of the committee offered me a glimpse of the ASA’s influence on our statistics community and beyond. I have witnessed the tremendous growth and impact the committee has on our community through our sponsorships of the annual SPAIG Award and scientific conference sessions and webinars. I am energized by the cumulative work and ideas of our diverse committee members and for giving back to the community.

In the last couple of years, I had the privilege to serve as the vice chair of the committee. And this year, I am grateful for the opportunity to serve as the chair of the committee. I look forward to continuing the committee’s impactful work and identifying new opportunities consistent with our mission to promote and foster statistical partnerships.

**How often does the committee meet to plan activities?**

**Fanni Natanegara:** The SPAIG Committee, along with ASA liaisons, meets once a month virtually to discuss and plan for our group activities. Our activities include organizing the annual SPAIG JSM speaker with lunch event and scientific sessions, publishing short articles highlighting a diverse set of collaborative projects and successes, advertising and judging the annual SPAIG Award, cosponsoring webinars with the ASA and other ASA sections, and updating our website to keep ASA members informed about our ongoing activities. The committee also strives to initiate new projects to promote and foster partnerships across the academic, industrial, and government sectors. Our wonderful ASA liaisons—Donna LaLonde (ASA), Mark Otto (US Fish and Wildlife Service), and Matilde Sanchez-Kam (US Food and Drug Administration)—have been critical in providing us insight into the larger ASA initiatives and making connections with other sections relevant to our mission and activities.

At any given time, there could be multiple ongoing projects. Given that there are nine committee members and we all have our day jobs, we often take the approach of divide and conquer based on our interests and availability. Consistent with our mission, we collaborate with each other and ensure diverse representations to tackle each project by forming smaller pods. Depending on the timelines of each project, each pod will meet virtually and communicate as often as they need. We also have an in-person meeting annually at JSM, which we missed last year due to the virtual nature of the conference.
What are some recent or upcoming committee events you would like to highlight?

**Fanni Natanegara:** The committee sponsors the annual SPAIG Award. The award is distinct from other ASA awards in that it recognizes outstanding collaborations between organizations, while also recognizing key individual contributors such as statisticians and subject matter experts involved in the partnership. The nominated partnership must be between organizations from at least two of the three sectors: academe, industry, and government. In addition, the collaboration must have resulted in significant contributions to the statistical field with applications to real-world problems in areas such as health, education, agriculture, astronomy, geography, epidemiology, pharmacology, forensic science, demography, law, finance, and the environment. Statistical contributions from these collaborations include innovative methodologies or initiatives, new technologies, novel analytic and evaluation approaches, publications, statistical workshops, internship programs, and rigorous analysis of real-world data to answer urgent questions.

Nominations are due by March 1 each year. The winners are recognized before the President’s Invited Address at JSM that year. For more information or to ask questions about the nomination process, email ASA Director of Awards, Committees, and Elections Elizabeth Henry at awards@amstat.org.

What are some upcoming events you are most excited about?

**Fanni Natanegara:** Beginning this year, I am excited for the SPAIG Committee to partner with the ASA on the Impact Webinar Series. Statistics: Making an Impact was the theme for JSM 2019 and a challenge to the statistics and data science communities proposed by 2019 ASA President Karen Kafadar. The Impact Webinar Series will explore areas that are ripe for contributions from statisticians and data scientists and where statistics and data science already have had positive effects. This webinar series is free.

I am also excited about our recent collaboration with the ASA Section on Statistics and Data Science Education on the Industry Internships Advising Tips Webinar. From the panel discussion, I learned about the unique and common practices across industry internship programs. From the open floor discussion, I heard the need from our students and their university advisers to be able to search internship projects more readily and prepare for successful applications and interviews. There is more work to do here. This is an opportunity for us to show current and future students the advantages of and tips for pursuing internship programs, along with technical and nontechnical skills needed to be successful in post-academic life.

Past and future announcements and recordings of these webinars can be found on the SPAIG website.

Any additional information or news you’d like to share about the committee with ASA members?

**Fanni Natanegara:** As we plan future Impact webinars, we welcome examples of interdisciplinary teams whose work fits the overarching theme of impact and encourage proposals for work that is in progress or in the exploratory stage. Please share recommendations at bit.ly/3ogcXXj.

In addition to hearing about successful examples of collaborations, we would like to hear about hurdles you have or have yet overcome in your current collaborations. We are open to partnering with you and your organizations or sections on initiatives that foster connectivity and collaboration across the sectors and provide education, solve real-world problems, and advance research.
At its April meeting, the ASA Board approved the process for determining when the ASA should take a position on an issue through a statement, amicus brief, or other means. The process builds on the board’s 2017 set of five questions that has been used to guide discussion for when the ASA should make a public statement on an issue (see bit.ly/3d5dvf9).

Such a process was proposed by the ASA Scientific and Public Affairs Advisory Committee (SPAAC) because its members thought an open and transparent procedure would help demonstrate the ASA’s credibility and help the ASA avoid being overburdened should the rate of requests increase. A draft of the proposed process was published in the March issue (bit.ly/3htkPmK) with a request for comments.

Based on the 13 comments received, SPAAC revised the draft and advanced it to the ASA Board. These constructive comments helped strengthen the process from the one published in March.

In the Scope and Guidance section, a paragraph was added near the beginning to clarify that the proposed process does not apply to letters and calls for comments, the process for which is briefly explained. Text was added to note the bylaws empower the ASA Board to act in a way it believes is in the best interests of the association, without requiring it to poll members for their input. Finally for that section, a step was added to direct that “The Professional Issues and Visibility Council (PI&V) should be notified of a statement in development or consideration by the ASA unit leading the effort.”

In the Process section, the steps were reordered to be chronological and it was stipulated that requesters should specify any conflicts of interest. A timeline for staff to act was also added to ensure sensitivity to timeliness. In addition, once staff have selected the ASA committee or entity to evaluate an outside request, it is stipulated they will also inform PI&V. This is to provide other PI&V committees an opportunity to comment if they choose.

The board also accepted our proposed two additional questions to the original five: (i) Is the ASA particularly well positioned to respond to the issue? and (ii) Does the issue involve an unambiguous violation of accepted norms of practice in statistical science or the ethical principles of the profession? These are questions #1 and #6 in the list of seven in the process.

This new process is now posted at the top of the ASA Board Statements page (bit.ly/2QpjbYo) and ASA letters page (bit.ly/2S1Dzz1).

This is a living document and may be amended as circumstances warrant.
Something for Everyone in May Issue of TAS

Joshua M. Tebbs, The American Statistician Editor

The May 2021 issue of The American Statistician (TAS) is available online and features 13 articles across different sections of the journal. One of the benefits of ASA membership is free access to the online issues of TAS.

Such a process was proposed by the ASA Scientific and The General section has seven articles. The first examines invariance properties and sufficiency for point estimation in general parametric models. The second provides a critical assessment of the use of the slugging percentage metric in baseball. The third article discusses confidence intervals for the exceedance probability as alternatives to confidence intervals for parameters and \( p \)-values. The fourth uses the LASSO to solve the problem of “distributive justice” among creditors in the estate division problem. The fifth treats the problem of estimating a large number of parallel effects in genome-wide association studies and related experiments. The sixth article proposes a Bayesian approach to test for ordering constraints among variances with dependent outcomes. Finally, the seventh article describes intuitive graphical methods to visualize influence functions.

The Interdisciplinary section has one article, which examines 30-day readmission rates in American hospitals, demonstrating patients who receive home health care actually have a higher probability of readmission. Using this as motivation, the authors describe a counterfactual probability metric that leads to necessary and sufficient conditions for sign reversals to occur.

The Statistical Computing and Graphics section also has one article. This article combines two existing recursive Bayesian inference methods to offer computational improvements to estimate any statistical model. This can streamline Bayesian data analysis in a variety of applications involving big data, streaming data, and optimal adaptive design.

There are two articles in the Statistical Practice section. The first revisits the long debate in experimental design between classic randomization and deterministic assignments based on notions of optimality. The authors then seek to provide practical advice about modified designs that harmonize both views. The second article considers the popular NCAA basketball tournament and investigates the infamous 5–12 seeded matchup in which “upsets” commonly occur. The authors offer an analysis of this using simple statistical learning models and existing tests for orderings among multinomial probabilities.

Finally, the Teacher’s Corner section has two articles. The first shows how calculus and probability techniques can be used to obtain Gini’s index and other statistical measures associated with the Lorenz curve, which is commonly used to describe income disparities. The second article examines rank statistics and presents new technical results on the correlations between variables and ranks.

For more information about The American Statistician, visit www.tandfonline.com/toc/utas20/current.
I first joined the ASA in 1999, when I entered graduate school. One of my first interactions was winning the Gertrude Cox Award in 2000, which gave me a boost of confidence and facilitated attending my first JSM (Indianapolis). I shared a hotel room with three fellow graduate students and had my introduction to the wonderful ASA community; I felt like I was being welcomed into the world of statistics.

I have attended nearly every JSM since to learn about new methods and applications and connect with old friends and colleagues. As someone who now straddles several fields, going to JSM feels like going back to my roots.

My involvement with the ASA was really solidified in the late 2000s, when I became involved in the effort to start up the Mental Health Statistics Section (MHSS), which is now thriving. At the time, I was an assistant professor of mental health and trying to find my way as someone with one foot in mental health research and one foot in biostatistics. Finding a community of fellow statisticians who were also working in the field of mental health research helped me see that, yes, I could make a career as a statistician, even with a primary appointment in a non-(bio)statistics department.

The collaborative nature of that early group and its commitment to enhancing the visibility of the role of statistics in mental health research was inspiring. I helped write the charter for the section and became one of the first chairs. Becoming involved in the MHSS has given me a professional identity, as well as close friends and colleagues.

I attend at least six conferences per year (ranging from the Society for Research on Educational Effectiveness to Academy Health to the Society for Prevention Research), but ASA conferences such as JSM and the International Conference on Health Policy Statistics always feel like my professional home.
This quote by Jóhanna Sigurðardóttir, former prime minister of Iceland, captures the motivation for the new American Statistical Association Pride Scholarship and Pride Month Celebration. As stated in the ASA Statement on Justice, Equity, Diversity, and Inclusion, we recognize our mission, “can be realized only by fully embracing justice, equity, diversity, and inclusivity in all of our operations. Individuals embody many traits, so the leadership will work with the members of the ASA to create and sustain responsive, flourishing, and safe environments that support individual needs, stimulate intellectual growth, and promote professional advancement for all.”

The creation of the ASA Pride Scholarship is one action demonstrating the ASAs commitment to this stated goal.

Looking back to 2020, the President’s Corner in the June issue of *Amstat News* presented an interview with Jack Miller, then chair of the ASA LGBTQ+ Advocacy Committee, and Suzanne Thornton, who was chairing a presidential initiative working group. The following excerpts from that interview provide the context for current efforts.
Wendy: Jack, you are the chair of the ASA LGBTQ+ Advocacy Committee. I understand the name of the committee just changed. Why was it important to change the name?

Jack: I am the current chair of the ASA LGBTQ+ Advocacy Committee. Wendy, you’re correct about the name change—that was just approved by the ASA Board of Directors in November 2019. When I joined the ASA in 1997, the name was the ASA Gay and Lesbian Concerns Committee. A few years ago, the name was changed to the ASA LGBT Concerns Committee. It was important for us to update the name to be more inclusive (LGBTQ+, but we aim to include all members of sexual and gender minorities). It was also important for the committee’s name to be reflective of our charges:

• To support research on statistical issues associated with sexual orientation and gender identity
• To work to promote equal opportunity in employment and education for all statisticians, regardless of sexual orientation or gender identity

These charges are framed in a positive light, so “advocacy” fits much better than “concerns.”

Wendy: Suzanne, you are the chair of the working group related to LGBTQ+ concerns that is now focused on my 2020 presidential initiative. How has this group evolved, and where is the group going? What do you hope to accomplish?

Suzanne: I am leading the LGTBQ Inclusion and Diversity (LID) Working Group at the ASA. This group grew after Emma, Wendy, I, and others presented on LGBTQ inclusivity at consecutive WSDS conferences. With each presentation, we received supportive feedback from attendees who were eager to help us further the outreach of our work. This support has grown into what is now the LID Working Group and a steadily expanding network of LGBTQ+ statisticians and allies. (If you would like to get in touch with us and/or be added to our mailing list [maximum one email per month], please reach out to me or Donna LaLonde.) [Note: the work is ongoing, so please reach out to Donna at donnal@amstat.org if you are interested in being involved.]

We are organized into three overlapping subcommittees. The first is focused on fostering supportive and inclusive environments for LGBTQ+ and other minority groups within statistics; the second focuses on creating opportunities for success and leadership for LGBTQ+ statisticians, specifically; and the third increases LGBTQ+ representation within our field. We have a modest but dedicated group of people working on these tasks, but always welcome more, so please contact Donna or me if any of these topics are of interest to you.

Cooperating with Jack and the rest of the LGBTQ+ Advocacy Committee, LID is working toward developing ally training, bridging connections with other minority-focused statistical groups, creating scholarship opportunities, and developing a virtual network with an accessible online presence, among other things.

Now, a year later, the ASA has the Pride Scholarship, which celebrates the diverse backgrounds of LGBTQ+ individuals and their allies and showcases the invaluable contributions and perspectives they bring to the ASA, statistics, and data science. However, your help is needed.

In collaboration with members of the working group and the LGBTQ+ Advocacy Committee, the ASA will celebrate Pride Month while working to endow the scholarship. The celebration will kick off with a book reading by award-winning author Nicole Dennis Benn on June 10 at 6:00 p.m. ET. Benn’s book, *Patsy*, has been named Best Book of the Year by Kirkus Reviews, *TIME, NPR, People, The Washington Post, Apple Books, O, The Oprah Magazine, The Guardian, Good Housekeeping, BuzzFeed*, and *ELLE*. For details about this and other Pride Month events, visit *bit.ly/ASAPrideEvents.*
Real-world data (RWD) can come from a variety of sources, including claims, electronic health records, biobanks, genomics tests, and imaging modalities. Increasingly, it is coming from digital data through electronic health and mobile health modalities. Recent events have pushed innovation in the use of RWD to maximize the value of real-world evidence (RWE) in an era of big data, data science, and artificial intelligence (AI).

Given the COVID-19 pandemic, digital innovation, patient preference assessments, and electronic patient-reported outcomes are likely to see increased use. RWE is also increasingly used to help identify patients for randomized clinical trials (RCTs), optimize RCT design, and help optimize evidence packages to accelerate the approval and reimbursement processes.

A panel was held during the 2020 International Chinese Statistical Association’s Applied Statistics Symposium with the goal of providing insights into the current trends and future outlook for RWE. What follows is a summary of the key topics discussed.

**Technology: Health Innovations**

With respect to RWD, people most commonly recognize insurance claims or electronic medical records. Often used for health services research, they are administrative byproducts of care delivery repurposed for research. In addition to commonly used RWD such as pharmacy claims and EMR, there are other data sources that can be leveraged, including chart reviews, registries, patient-reported outcomes (PROs), biobanks, genomics tests, and imaging modalities. Specific database needs are driven by what study questions investigators aim to address, with each type of data providing unique value.

The study design and statistical methods considered should be those that best address the study objectives. One should consider if the approach should be descriptive, causal-comparative, quasi-experimental, or experimental, as well as the appropriate cohort, whether a prospective or retrospective observational study. Further, one should ask if case-control, cross-sectional, or case report/series should be used. What is the optimal statistical approach? Is there a role for meta-analytic or predictive modeling methods?

Electronic health records (EHR) data-linkage with claim databases, registries, PROs, and surveys are seen more frequently to address specific research questions. Increasingly, it is possible to link these sources of data to increase the richness of what they can provide. We are beginning to figure out how to use genomics, wearables, consumer data, and even social media as new data sources.

RWE is being widely used to gain an understanding of patient populations and subpopulations, as well as the patient journey and when and how treatments are used and any resulting gaps in care. Using this knowledge, RWE can be leveraged across the lifecycle of drug development, including planning and early development, as well as business and commercial activities, including market access, health technology assessments (HTAs), contracting, or tenders.

RWD can serve a crucial role in helping payors understand the financial impact of new treatments for their specific cost structures and in their populations. It can also help bridge the efficacy-effectiveness divide when seeking to understand how new treatments’ clinical trial results generalize to their populations. HTAs routinely seek to estimate the incremental economic impacts to a health care system or insurer using models employing RCT data. Direct measurement, however, of the achieved cost burden and experienced cost-effectiveness for a given health care system is assessed using data from a real-world environment.

Anyone who has worked with RWD knows much of the work is in preparing the data and deriving meaningful variables. Companies have found success in employing AI to enhance data anomaly detection, standardization, and quality checking at this pre-processing stage. Rigor and transparency around how data is then transformed and in how machine
learning (ML) is applied will help increase trust and understanding of where and how to employ ML effectively. Improved data linkage and interoperability will be needed to provide the real-time feedback loops in RWD necessary to unleash the potential of AI for clinical decision-making.

The key to data access and linkage is interoperability. No single health system has all the data, and there is an increased tendency to do federated analysis to deal with privacy issues. The difficult part is that not all analytics are adapted or suited to federated analysis. We need a shared system based on trust. For example, what SAS learned during the support for the opioid crisis in Massachusetts was that laws are sometimes required—Chapter 55 was put into place to interconnect multiple databases into law and that helped inform state policy and a program to manage overdose-based mortality.

Technology is already entering the health care industry robustly. Starting to integrate information from wearables and diagnostic devices has the potential to significantly increase the reliability and comprehensiveness of electronic health records. For example, Apple has its health app and the Apple Watch, and Google is adding Fitbit to its holdings. Moreover, we see new ways of doing business with many stakeholders looking for ways to partner that will help encourage greater value for patients. There are many startups and other organizations working on this, but having groups collaborating on data sharing, quality, transparency, and collaboration can help bring structure and order to these innovations.

**Applications: RCTs and RWE**

RWE and RCT data complement each other. RCT data is generated within a controlled experiment to tease out the incremental benefit of a therapy in a defined setting. RWD is necessary to understand what happens when therapies are deployed in real life. It permits understanding effectiveness in a broader range of patient types, in a larger group than is achievable in an RCT setting. Thus, it complements the internal validity of RCTs with the external validity of RWD. We think by using the two side-by-side, one can better translate the clinical-trial-to-real-world divide, as well as contextualize the representativeness of trial data populations in a broader real-world context.

While RWD can be incredibly rich and varied, it can also be messy and challenging to tease out a signal from background noise. Mining this data, whether with old-fashioned data mining techniques or incorporating AI tools, can be quite challenging. AI is just a tool of data mining. The latest deep reinforcement learning and graph neural network developments show great potential to mine the data with good depth. Cutting-edge changes occur rapidly in technology spaces. However, devices of many types are being developed to help patients better track their health and, if shared, can provide additional richness.

For now, RWE complements RCTs. The holy grail is to not just extend medication indications and labels, but to also get an approval for new medications using RWE sources, as it has the potential to be cheaper and to better account for real-world practice than conducting an RCT. We can have a better understanding of efficacy and effectiveness of medicines in patients with this approach.

It would be ideal to create a feedback loop where “patients like this get treated this way/that way” for clinical decision support that optimizes the outcomes. For this, we would need to define clear goals such as quality of life or cost-effectiveness.

Synthetic control arms and RCTs with real-world data sources are also intriguing. SAS can support...
these applications, but to do so requires partnership between many stakeholders. Focusing on fundamentals such as data sharing, quality, transparency, standardized processes, and imputation methods for use of RWE would increase confidence in its usage.

The quality and availability of RWD are improving exponentially, providing more reliable data for analysis and generating RWE. In addition, advances in statistical algorithms continue to improve our ability to leverage RWE for the inferential statistics and hypothesis testing required by regulatory agencies around the world.

**Outlook: Aftermath of the Pandemic**

The COVID-19 pandemic has accelerated drug development and trial and manufacturing processes at our major customers, and RWD is being captured actively in many countries. Scientific breakthroughs in the future should be faster if we leverage this experience to tackle regulatory processes, incorporate new data sources, and leverage emerging analytics and technology infrastructure. There is a push for greater racial diversity in the patient populations studied and analyzed for COVID-19, but this has not been the case in many historical trials.

We know many people don’t live in areas with access to clinical trials, and social determinants of health are key drivers of treatment success. We must pay attention to and eliminate biases from our data sources and models. Secondary data collected for other purposes can introduce collection bias. For example, using claims data already means you are working with a subset of patients who are working. Heightened awareness of this bias in data is a good thing for the future of RWE.

The pandemic has spurred dramatic changes to market access conditions for patients that will have lasting positive effects. For example, to help boost adherence with better access, patients were increasingly allowed to get 90-day prescriptions, use mail-order and home delivery, experience lower out-of-pocket costs at the register for insulin and COVID-19–related health care, and gain improved access to telemedicine and chronic care medications.

In terms of predictions in the aftermath of the pandemic, the health care markets will increasingly find ways to use the available RWE to shape the way markets work, but not without limits. There will be a blurring of the distinction between retrospective and prospective data gathering, both with respect to different RWD types and in linking RWD to RCT data. Innovation in integrated data collection and comprehensive evidence generation will be used to gain insight into the real world, to inform stakeholders’ understanding, and to improve patients’ lives. The confidence in data quality and increase in data sharing, integration, and transparency will mean greater uptake of RWE. Automating access to RWD to gain RWE will continue to drive our decision-making from intuition to insight.

However, there may be both surprises and disappointments in our future, despite the hope to gain more accurate and reliable results using AI and algorithms. Thus, explainable AI may be important to understand and interpret the results, as well as provide forecasts. We are in early days of using AI for medicine; data standards are still being defined, governance of models could be improved, and users may not understand and trust the results. From this perspective, the failure rate of AI projects can be high. AI requires a combination of disciplines: science, engineering, statistics, math, and biology. Some even say data science is an art due to its exploratory nature and need to convince humans.

Ultimately, AI projects should focus on business value, not AI value. Life is not an AI reality talent show. AI solutions should be no-brainers for end users to incorporate as part of their workflow and not be standalone solutions. Thus, fit-for-purpose data, sound methodologies, and impactful applications go hand-in-hand when dealing with RWD and big data.

*Editor’s Note: The views expressed are the authors’ own and do not necessarily represent those of their employers.*


Who are you, and what is your statistics position?

I am Arshi Arora, and I work as a research biostatistician in the department of epidemiology and biostatistics at Memorial Sloan Kettering Cancer Center. I am interested in integrating genomics and statistics to unravel new clinical and biological findings that impact patient care. I am especially interested in analyzing output of cutting-edge technologies like flow cytometry, copy number data, etc., that determine treatment decisions. At present, I am pursuing statistical analysis of pharmacodynamics in the realm of immunotherapy to understand biomarkers that might be associated with drug response.

My goal as a biostatistician is to make my work more accessible. I love sharing results via plots and other forms of visualizations to explain various trends in the data set.

Tell us about what you like to do for fun when you are not being a statistician.

When I am not dabbling in cancer genomics, the right hemisphere of my brain is into ceramics, biking, and DIY crafts. I also co-host a podcast on computational biology called “Computationally Yours”! I consider myself a minimalist and follow an intense reduce, reuse, and recycle waste regimen.

What drew you to these hobbies, and what keeps you interested?

Computationally Yours was started in times of the current pandemic in April 2020 with one of my closest friends, Sabah Kadri, who works as a director of bioinformatics at Lurie Children’s Hospital of Chicago and is an assistant professor of pathology at Northwestern University. We both overlapped at Carnegie Mellon University in Pittsburgh and share a love for science, books, and Bollywood dance.

As scientists, it was frustrating to see when scientific misinformation was becoming common in the news and, thus, we decided to do something about it. The idea for the podcast was pre-pandemic, but the pandemic definitely catalyzed the motivation to do something now.

Our mission here at Computationally Yours is to be a voice of science, especially for topics related to computational biology, biostatistics, and beyond. We talk about what we know and interview experts about topics we are passionate about and think the audience will really enjoy. We have covered myriad topics—clinical trials 101, the Human Genome Project, contact tracing, and climate change. And we look forward to covering many more!

As women in STEM, we are very excited to talk about different topics in science and how interdisciplinary yet unique they are. Stay tuned for one of our episodes in the pipeline with Jaya Satagopan covering five burning questions to ask a statistician. (shameless plug!)

My love for ceramics started when I decided to try a “paint your own pot” activity at one of the local art stores, and the rest is history. I started with a beginner wheel throwing class and went on to more advanced ones at 92Y in New York City.

To me, sitting at the potter’s wheel and molding clay into a vessel is extremely meditative and calming. I enjoy all the processes, from shaping up a piece to trimming it (when the clay is dried into a leather consistency, trim the excess clay to get the piece into your desired shape), glazing (adding color to your piece and getting ready to bake it where clay turns into glass), and admiring how it turns out (sheepish smile)!

I still have the first cylindrical piece I made. It was imperfect, yet I cherished it as it was something that could hold liquid and stand on its own. That said, there was definitely a growing and learning curve from that crooked cylinder to a more finished teapot! I had some amazing instructors who taught me so much about different pottery techniques and gave words of encouragement when I wasn’t delicate or patient enough.
STATS4GOOD

ASA GivesBack: Volunteering Opportunities and Networking for Students and Early-Career Statisticians

The American Statistical Association has a long history of community service. One of the founding principles of this column is to highlight activities of the ASA and its members using statistical science to help people build stronger communities and a better world. This month, I feature ASA GivesBack.

This two-pronged philanthropic initiative includes fundraising and volunteerism, organizing one event per year in each area. Launched by the ASA Development Committee early last year, the program focuses on early-career statisticians and data scientists to foster a lifetime of philanthropy and community involvement. ASA GivesBack brings intentionality, organizational strength, and networking to philanthropic efforts by the ASA and its members.

I spoke with ASA Director of Strategic Initiatives and Outreach Donna LaLonde to get the 411. GivesBack offers many opportunities to get involved. It supports ASA Giving Day activities, including giving through community service. A monthly virtual happy hour helps people connect through social media to develop networks with other statisticians and data scientists. Volunteer projects are in development.

A distinctive feature is the important roles played by people just getting started in their careers. The American Statistical Association’s ongoing commitment to community service is one of the most important commitments we have as a professional society.
GivesBack is both for and led by students and early-career professionals. Many of the events and activities focus on early-career members, including a JSM session on virtual networking—a useful skill during the pandemic that will remain valuable in the post-COVID new normal. More than 90 people attended the 2020 session, with participants across the country and even around the world. Topics at the session included working remotely, virtual interviewing, and effective use of social media.

ASA GivesBack also hosted Visualize Your World (bit.ly/3bx1M7n), a seven-week summer program for K–12 students with the goal of developing an interest in statistics through data visualization. Each week, a prompt was given to set a theme such as nature, tracking screen time (maybe something all of us could use), and colors and shapes. Students’ work was hand drawn art or created by code. A winner, selected from the submissions each week in each age group, received an ASA goody bag and their visualization was placed on the GivesBack Facebook page. Visualize Your World is returning this summer with more activities to encourage an interest in statistics.

The ASA GivesBack team would like to hear your ideas for events, networking opportunities, and other activities. Visiting the group’s Facebook (www.facebook.com/asagivesback2020) is a great way to learn about the initiative and offer ideas. The program is also in need of a new leadership team, whose term runs from one JSM to the next. The team organizes fundraising and volunteer events, networking activities, and a JSM session. In addition to the chair—who serves on the ASA Development Committee—and a co-chair, the team includes membership, fundraising, and volunteer event leads; a social media lead; and three members at large. With the entire leadership made of students and early-career professionals, it’s a great opportunity to grow your involvement in the ASA and make connections while doing good in the community. Applications for the ASA GivesBack leadership team are being accepted at bit.ly/2SUPOCV through July 1.

The American Statistical Association’s ongoing commitment to community service is one of the most important commitments we have as a professional society. It’s a practice the ASA fosters in so many ways, from ASA GivesBack to chapter activities to publicly available resources and even this column. There are opportunities for every interest and background, all joined by our shared commitment to the greater good through statistical science. Finding your own way to help is an immensely rich and rewarding experience. Join us in helping the ASA Give Back! ■
The ASA Committee on Career Development (ASA CCD) provides support for and information about careers in statistics. ASA CCD hosts events at the Joint Statistical Meetings and offers webinars and office hours. Additionally, the committee’s website includes resources for professional development and mentoring.

ASA CCD has planned the following virtual initiatives for 2021 with the goal of encouraging interaction and connection among participants and the statistical community. All ASA CCD events are free.

**JSM Virtual Guided Networking Session**
The ASA CCD will again host the JSM Virtual Guided Networking Session with the goal of helping students and early-career statisticians prepare for virtual JSM 2021. This networking social aims to provide a friendly environment for students and early-career statisticians to practice meeting and greeting volunteer mid- to late-career professionals from academia, industry, and government.

Jeri Mulrow and Patricia Hu will be the featured speakers for this networking event. Mulrow is the vice president and director of statistical and evaluation sciences at Westat. She recently served as the principal deputy director for the Bureau of Justice Statistics and was previously the deputy division director for the National Center for Science and Engineering Statistics at the National Science Foundation.

Hu is the director of the Bureau of Transportation Statistics. Previously, she was the director of the Center for Transportation Analysis at Oak Ridge National Laboratory.

The 2020 JSM Virtual Guided Networking Session featured ASA President Rob Santos, Emma Benn of Mount Sinai, and Karen Price of Eli Lilly and focused on networking using social media, interviewing virtually, and working remotely. Santos offered advice about staging your virtual interview space, Benn discussed the benefits of having a professional virtual presence and networking via social media, and Price revealed tricks for maximizing your remote working skills.

**Career Path Webinar Series**
ASA CCD launched its first webinar series, Along Your Career Path in Statistics and Data Science, with “Early Data Science Careers and the Job Search Process” in April. More than 60 people attended. A panel of representatives from industry, academia, and the government spoke about possible career paths in statistics and data science and provided tips for the job search and application process. Panelists included Nancy Murray, a statistician at the US Centers for Disease Control and Prevention and biostatistics PhD candidate at Emory University;
Won Chang, assistant professor at the University of Cincinnati; and Diane (Di) Michelson of JMP. The panel was moderated by Ruth Hummel and hosted by ASA Director of Strategic Initiatives and Outreach Donna LaLonde.

Each panelist expressed what they appreciate about their type of work and why they chose the path they did. Michelson enjoys variety and wanted to be in industry so she could do something different every day. Murray enjoys a mix of coding and communication in her day-to-day work and appreciates the work-life balance working for a government agency gives her. Chang appreciates a flexible schedule and being able to figure out one’s own best direction, which she gets working in academia. Each commented that there are many types of careers in data science and statisticians and data scientists learn methods that can be applied to numerous areas. A common theme among all three was the importance of communication in their work.

Details and further takeaways from the first webinar can be found at bit.ly/3w6vZCb.

The next webinar in the series, “Career Next-Steps and Promotions” will take place June 11 at 1 p.m. EDT and feature Bo Li, professor and chair of the department of statistics at the University of Illinois at Urbana-Champaign; Adrian Coles, senior research scientist at Eli Lilly; and Elizabeth Mannshardt, associate director of the Information Access and Analytic Services Division at the US Environmental Protection Agency. Topics will include how to best position yourself for advancement, how to broach the subject of promotion, how to brand yourself and network, and how to leverage opportunities outside your organization. LaLonde will moderate.

Register at bit.ly/3yfc99F. A recording of the webinar will be available on the ASA CCD website.

**Technology Adoptions: Online Portfolio**

Another ASA CCD initiative is to provide resources in technology adoptions for expanding your online portfolio via resources such as Netlify for blog hosting, Hugo for blog site generation, R blogdown for blog content, and RStudio and GitHub for pulling it all together. Look for an introduction to Git and ideas for how to use a blog to communicate technical ability.

If you are interested in contributing to the CCD’s portfolio initiative, contact CCD Chair Claire McKay Bowen at CBowen@urban.org.

If you have ideas for career development opportunities or are interested in serving on the ASA CCD in 2022, contact Bowen or Mannshardt, CCD vice chair, at mannshardt@stat.ncsu.edu.
JSM 2021 to Be Held Virtually
Long List of Featured Speakers, Lectures Just One Highlight

JSM 2021 will be delivered online through a custom platform. The platform will provide easy access to sessions and virtual opportunities to network and engage throughout the meeting. Synchronous participation will help you get the most out of your virtual experience—including sessions with live chat, polling, and other features. However, to accommodate all schedules, most sessions will be recorded and available on demand through the end of August.

Visit the JSM website at www2.amstat.org/meetings/jsm/2021 to learn more and view the online program. Register by June 15 for early bird rates.

FEATURED SPEAKERS

ASA President’s Invited Address
Vivienne Ming, Socos Labs
Messy Human Problems
Monday, August 9, 3:30 p.m.

Deming Lecture
Ivan S.F Chan, AbbVie
Deming Spirit in Action: Quality, Statistics, and Innovation in Vaccine Development
Tuesday, August 10, 3:30 p.m.

ASA President’s Address
Robert Santos, Urban Institute
Thoughts on the Role of ‘Self’ in a Statistics Career
Tuesday, August 10, 5:15 p.m.

COPSS Distinguished Achievement Award and Lectureship
Wing Hung Wong, Stanford University
Understanding Human Trait Variation from the Gene Regulatory Systems Perspective
Wednesday, August 11, 5:15 p.m.

F. N. David Award
Alicia Carriquiry, Iowa State University
Statistics in the Pursuit of Justice: A More Principled Strategy to Analyze Forensic Evidence
Thursday, August 12, 12:00 p.m.

LECTURES

IMS Presidential Address
Regina Liu, Rutgers University
Proactive and All-Encompassing Statistics
Monday, August 9, 5:15 p.m.

Lawrence D. Brown PhD Student Award Session
Wednesday, August 11, 10:00 a.m.

Inference in Interpretable Latent Factor Regression Models
Xin Bing, Cornell University
Ilmun Kim, University of Cambridge
Minimax Optimality of Permutation Tests
Virtual Conference
JSM 2021
Statistics, Data, and the Stories They Tell
August 8–12, 2021

Meetings

MORE ONLINE
Professional Development
short courses and workshops will be offered as distance learning presentations throughout the rest of this year and into 2022. Announcements will be sent when these are scheduled.

Follow #JSM2021 and tag @Amstat News on social media.

INTRODUCTORY OVERVIEW LECTURES

Julia for Statistics and Data Science
Cecile Ane, University of Wisconsin
Claudia Solis-Лemus, University of Wisconsin
Douglas Bates, University of Wisconsin

Advances in the Statistical Understanding of Random Forests and Related Methods and Their Use in Inference
Giles J. Hooker, Cornell
Lucas Mentch, University of Pittsburgh

Fairness in Machine Learning
Sherri Rose, Stanford University

Spatial Models for Massive Data Set
Sudipto Banerjee, University of California at Los Angeles

Yichen Zhang, New York University Stern School of Business
First-Order Newton-Type Estimator for Distributed Estimation and Inference

Le Cam Lecture
Jianqing Fan, Princeton University
Understanding Spectral Embedding
Thursday, August 12, 10:00 a.m.

Medallion Lecture I
Philippe Rigollet, MIT
Statistical Optimal Transport
Monday, August 9, 1:30 p.m.

Medallion Lecture II
Robert Nowak, University of Wisconsin-Madison
Nonparametric Statistics and the Design of Experiments in Machine Learning
Tuesday, August 10, 1:30 p.m.

Medallion Lecture III
Nancy Zhang, University of Pennsylvania
Transfer Learning in Single-Cell Genomics
Thursday, August 12, 12:00 p.m.

Medallion Lecture IV
Axel Munk, University of Göttingen
Empirical Optimal Transport: Inference, Algorithms, Applications
Wednesday, August 11, 1:30 p.m.

Wald Lecture I and II
Jennifer Chayes, University of California, Berkeley
Modeling and Estimating Large Sparse Networks
Tuesday, August 10, 3:30 p.m.
Thursday, August 12, 4:00 p.m.
The US Army Wilks Award for 2020 was presented to Paul M. Ellner recently during a virtual ceremony at Aberdeen Proving Ground in Maryland. Ellner was honored for developing and applying tailored statistical methodologies in reliability growth planning, tracking, and projection used by the US Department of Defense (DoD) and associated contractors for complex weapon system development programs.

Ellner holds his US Army Wilks Award.

In a career spanning six decades, Ellner served as analyst, supervisor, and—most recently—senior technologist at the Combat Capabilities Development Command Data and Analysis Center. His work in recent methodological initiatives successfully addressed challenges posed by constraints in testing schedules, test resource limitations, and variations introduced across testing environments, helping the Army and DoD improve readiness and decrease costs. Ellner’s models and methodology are routinely requested by key analysts, engineering centers, and product offices across the Army and DoD, with hundreds of requests to date.

Ellner earned his PhD in mathematics from Rensselaer Polytechnic Institute. He has been an exceptional work mentor, promoting advances in Army statistical methodology and applications to junior co-workers, and has served on committees for doctoral candidates at the University of Maryland. He is the principal author of the Army Materiel Systems Analysis Activity Reliability Growth Methodology Guide and a major contributor to DoD’s MIL-HDBK-189C, Reliability Growth Management. He has authored numerous technical reports and open literature articles that serve as a standard for statistical reliability analysis in DoD. Ellner is also the recipient of the 2001 General Powers Test and Evaluation Lifetime Achievement Award and 2008 ASA Section on Statistics in Defense and National Security Distinguished Achievement Award.

This US Army Wilks Award was established in 1981 to commemorate the career of Samuel S. Wilks and his service to the Army. It is given periodically to a deserving individual who has made substantial contributions in research and/or the application of statistical methodology affecting the practice of statistics in the Army.

The 2022 Waksberg Award is going to Roderick Little, who will give the Waksberg Invited Address at the Statistics Canada 2022 Symposium and write a paper planned for publication in the December 2022 issue of Survey Methodology.

The award includes an honorarium made possible by a grant from Westat.

Survey Methodology (bit.ly/33LmLmD) established in 2001 an annual invited paper series in honor of Joseph Waksberg to recognize his contributions to survey statistics and methodology. Each year, a prominent survey statistician is chosen to write a paper that reviews the development and current state of an important topic in survey statistics and methodology and reflects the mixture of theory and practice that characterized Waksberg’s work.

Waksberg was a giant in survey sampling for nearly seven decades, beginning at the US Census Bureau in 1940 and moving to Westat in 1973, where he served as chair of the board from 1990 until his death in 2006.

The author of the 2022 Waksberg paper was selected by a four-person committee—Jack Gambino, Jean Opsomer (chair), Giovanna Ranalli, and Elizabeth Stuart—appointed by Survey Methodology and the American Statistical Association.

Joseph Romano, a longtime ASA member, was recently named 2021 LGBTQ+ Scientist of the Year in recognition of outstanding contributions to his field.

Romano, a professor of statistics and economics at Stanford, was presented the award by Out to Innovate, formerly called the National Organization of Gay and Lesbian Scientists and Technical Professionals.

The award announcement credits Romano with contributing to fields ranging from econometrics to climate science.

“Romano has developed many new statistical tools, such as subsampling and the stationary bootstrap. The breadth and importance of Romano’s work are described in his letters of support, submitted by scholars across the United States and Europe,” the announcement said.

His supporters also note that Romano, as an open and out gay man, has been an inspiration to many LGBTQ+ students at Stanford.

Read more about the award and Romano on the Stanford news website, stanford.io/3flnblc.
Data from official statistics is the direct or indirect basis for an enormous number of important decisions. Yet, as many ASA members know, the producers of official statistics must continually fight for resources and other support. With the proliferation in recent years of alternative data sources and techniques (often put under the umbrella of “big data”), some policymakers have even called into question the need for official statistics, not realizing in how many cases official statistics serve as an essential benchmark for other data sources. In addition, the Foundations for Evidence-Based Policymaking Act of 2018 and recommendations of the congressionally chartered Commission on Evidence-Based Policy point to a need for the producers of official statistics to rethink methods and strategies, including the broader use of administrative data.

Recognizing the possibilities and challenges for official statistics, the ASA created the Links Lecture Award in 2017 to focus on this area. The award was created in honor of three statisticians whose careers have been critical links in the forward movement of official statistics: Constance Citro, Robert Groves, and Fritz Scheuren.

Each year, a distinguished person is selected to give a lecture dealing with forward-looking issues such as 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.

A key aspect of this award is the awardee’s lecture, which is an opportunity to share his or her vision for innovating official statistics with a broad audience. In normal times, the lecture is presented in Washington, DC, to directly engage with the federal statistical community. The 2021 award lecture will be the fourth in the series. Earlier awardees include Frauke Kreuter (University of Maryland/Michigan Joint Program in Survey Methodology), Bruce Meyer (The University of Chicago), and Daniel Goroff (Alfred P. Sloan Foundation/National Science Foundation).

The ASA committee charged with selecting the 2021 awardee is seeking nominations of candidates who have contributed to the advancement of official statistics and who have a compelling vision for further progress, as well as the ability to share their vision through an inspiring and engaging lecture. The committee asks for a nominating letter, a supporting letter, and a current CV. Self-nomination is allowed. The closing date for nominations is July 1. See www.amstat.org/ASA/Your-Career/Awards/Links-Lecture-Award.aspx for details.

The award comes with a modest honorarium and reimbursement for travel expenses. The lecture will take place in the autumn at a time agreeable to the speaker.
Detroit, Ann Arbor Chapters Give Statistical Awards at Science and Engineering Fair

Karry Roberts, ASA Detroit Chapter Secretary

From March 7–9, members of the Detroit and Ann Arbor chapters reviewed projects at the Michigan Science & Engineering Fair for ASA awards meant to encourage the practice and profession of statistics.

This year’s judging team included Lance Heilbrun, Karry Roberts, Bern DeBacker, Frank Murdock, Robert Podolsky, David Corliss, Nahid Keshavarzi, Jennie Jester, and Anamaria Kazanis, who is a Council of Chapters representative to the ASA Board of Directors.

The team developed a scorecard and split the projects up for initial review. Then, they reviewed the highest scoring projects as a team in a Zoom meeting to decide on the award winners. Judging criteria included study design, graphical displays, data visualization, use of basic statistical methods, interpretation, and discussion of limitations.

This year’s award winners were selected from 52 projects by Michigan high-school students who qualified for the state level of the competition. This science fair judging event is a long-standing annual joint chapter activity for the Detroit and Ann Arbor chapters, though all four Michigan chapters are invited to participate. Both chapters contributed funds to support monetary awards for the students whose projects showed the best use of statistics.

<table>
<thead>
<tr>
<th>Student</th>
<th>Project Title</th>
<th>School</th>
<th>City (in Michigan)</th>
<th>Teacher</th>
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<tbody>
<tr>
<td>Amav Nikam</td>
<td>“Development &amp; Statistical Validation of an Integrated Stock Trading Algorithm”</td>
<td>Salem High School</td>
<td>Canton</td>
<td>Marcia Lizzio</td>
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<tr>
<td>Aaryan Chandra &amp; Mick Gordinier</td>
<td>“Strategic Analysis of Streak Shooting in the NBA”</td>
<td>West Bloomfield High School</td>
<td>West Bloomfield</td>
<td>Nicholas Fraylick</td>
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<td>Alexander De Mattei</td>
<td>“Effects of Bacterial Diet on Reproductive Aging in C. elegans”</td>
<td>Mount Pleasant High School</td>
<td>Mount Pleasant</td>
<td>Jordan Krell</td>
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<td>Malak Elayyan</td>
<td>“Comparing the Effectiveness of Online and Virtual Learning”</td>
<td>Dearborn Center for Math, Science, &amp; Technology</td>
<td>Dearborn Heights</td>
<td>Jennifer Gursline</td>
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<td>Jibraan Rahman</td>
<td>“Improving Our Drinking H2O-Effectiveness of 6 Key Processes and Applications”</td>
<td>Canton High School</td>
<td>Canton</td>
<td>Heather Duff</td>
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<tr>
<td>Zeinab Zeik</td>
<td>“Effects of Different Intermittent Fasting Regimens of Weight and Fatness”</td>
<td>Dearborn Center for Math, Science, &amp; Technology</td>
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<tbody>
<tr>
<td>Ali Alomari</td>
<td>“Optimizing Pandemic-Related Shutdowns”</td>
<td>Detroit Country Day Upper School</td>
<td>Beverly Hills</td>
<td>John Dougherty</td>
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<tr>
<td>Tatiana Blanton</td>
<td>“Effects of Ice Crevasse Structure on Melt Rate”</td>
<td>Dearborn Center for Math, Science, &amp; Technology</td>
<td>Dearborn Heights</td>
<td>Jennifer Gursline</td>
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<tr>
<td>Charlie Chen</td>
<td>“The Effects of High Eccentricity Orbits on Solar Systems”</td>
<td>Detroit Country Day Upper School</td>
<td>Beverly Hills</td>
<td>Patricia Hanlan</td>
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<td>Ashwin Mahendran</td>
<td>“Automated Dental X-Ray Analysis”</td>
<td>Dakota High School</td>
<td>Macomb</td>
<td>Jonathan Jones</td>
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<tr>
<td>Jett Miller</td>
<td>“Early Forest Fire Detection”</td>
<td>Saginaw Arts &amp; Sciences Academy</td>
<td>Saginaw</td>
<td>Matthew Miller</td>
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<tr>
<td>Adam Sun</td>
<td>“Efficient Monocular Depth Estimation with Fully Convolutional Neural Networks”</td>
<td>Detroit Country Day Upper School</td>
<td>Beverly Hills</td>
<td>Rami Baroody</td>
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<tr>
<td>Amanda Xu</td>
<td>“How Do Fruit Flies Sense Cold?”</td>
<td>Huron High School</td>
<td>Ann Arbor</td>
<td>Andrew Collins</td>
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<tr>
<td>Gary Xu</td>
<td>“Properties of Stellar Binaries”</td>
<td>Troy High School</td>
<td>Troy</td>
<td>Rebecca Brewer</td>
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<tr>
<td>Margaret Yang</td>
<td>“Engineering Multi-Enzyme Whole-Cell Biocatalysts for Biofuel Production”</td>
<td>Cranbrook Kingswood Upper School</td>
<td>West Bloomfield</td>
<td>Stephanie Kokoszka</td>
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Detroit, Ann Arbor Chapters Give Statistical Awards at Science and Engineering Fair

Karry Roberts, ASA Detroit Chapter Secretary
Arizona Chapter Holds Third DataFest Competition

The Arizona Chapter held its third DataFest competition and first with all three public universities in the state participating.

The planning committee included members from all three schools: Yi Zheng (co-chair), Yunpeng Zhao, and Jennifer Broatch of Arizona State University (ASU); Derek Sonderegger of Northern Arizona University; and Hao Helen Zhang of the University of Arizona.

As with many schools, planning began in 2019 for a 2020 DataFest, but plans were postponed due to the pandemic until the weekend of March 19, 2021, for a virtual version. For this, Zheng and Sonderegger became the key tech experts who configured the technology to support the event.

The committee tried to maintain as much similarity with a live event as possible. This included having a Zoom VIP breakout room at the beginning of Friday night for the event hosts to meet in with speakers for the opening ceremonies, an early virtual session for tech help and check-in, a general Zoom meeting for the general addresses and data unveiling, and individual breakout rooms for each team in which mentors could visit. Slack was also highly recommended for teams to use for collaboration.

The competition completion rate for teams was similar to that for live competitions, with 12 teams presenting this year.

The virtual opening night made for challenging coordination and validation of teams. In retrospect, having a better way to get students to form good working teams was needed. On the other hand, we were able to improve the mentoring aspect of the competition.

Sonderegger, along with Rodney Jee (DataFest co-chair) and ASU graduate student Diana Gonzalez, devised a new, more formalized mentoring process. Mentors were assigned to a subset of teams for which they did rounds during their shift. Each day, mentors were provided with a set of prompts they could use to initiate discussion with students.

This seemed to improve upon previous mentoring experiences. In the post-event satisfaction survey, the majority of students scored mentor satisfaction very high. In addition to the scores, the survey question about what students liked most received encouraging comments such as “mentors popping in and out” and “interaction between team members and mentors.”

The use of Zoom also scored very high, while the use of Slack was not nearly as high, though not low. Getting the most neutral reaction was the opening ceremony, while the team collaboration and data analysis elements were marked as most enjoyed/loved.

This chapter event served to bring members (such as Bart Hobijn of ASU who served as a judge and Shiwei Lan of ASU who served as a mentor) into activity from an otherwise dormant year.

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Survey Research Methods
The Survey Research Methods Section (SRMS) announces the following winners of the 2021 Student Paper Award and 2021 Student Travel Award.

2021 JSM GSS/SRMS/SSS Student Paper Award Winners

- Sheridan Grant (University of Washington) “Measuring Informativeness of Ratings in the Absence of a Gold Standard”
- Neha Agarwala (University of Maryland Baltimore County) “Individual and Community-Level Risks for COVID-19 Mortality in the US”
- Claire Kelling (Virginia Tech) “A Two-Stage Cox Process Model for Police Use of Force with Spatial and Nonspatial Covariates”
- Yutao Liu (Columbia University) “Inference from Non-Random Samples Using Bayesian Machine Learning”

2021 JSM GSS/SRMS/SSS Student Paper Award Honorable Mentions

- Yuzhou Chen (Southern Methodist University) “Understanding Power Grid Network Vulnerability Through the Stochastic Lens of Network Motif Evolution”
- Zhenbang Wang (George Mason University) “Estimation in Exponential Family Regression Based on Linked Data Contaminated by Mismatch Error”

2021 JSM SRMS Student Travel Award Winner

- Paul Parker (University of Missouri)

Biopharmaceutical Section Mentoring Program

Networking can be challenging, but it is beneficial. Meeting others in our profession can help us quickly learn the ropes, improve our careers, and contribute to the statistical profession. Finding a mentor has its challenges and, keeping that in mind, the section has created a mentoring program based on the mentoring blueprint created by the Committee on Applied Statisticians. More than 100 people have participated in the mentoring program since its launch in 2014.

The goal of this program is to help members further enrich their professional experience through achieving personal and professional goals. A constructive mentorship relationship can take many forms and may occur at any stage of one’s career, with benefits for both the mentor and the mentee.

The section will provide hands-on resources for mentors and mentees to facilitate their interactions. Information related to the mentoring activities and additional resources for mentors and mentees is available at http://community.amstat.org/biop/aboutus/sub-committees/mentoring.

Both potential mentors and mentees should email their contact information to biopharmmentoring@gmail.com with the subject “Biopharmaceutical Section Mentoring Program.”
Qiuyi (“Queenie”) Wu
University of Rochester
“Naive Dictionary on Musical Corpora: From Knowledge Representation to Pattern Recognition”

This presentation was based on [my] master’s degree thesis back in 2018, supervised by my adviser, Dr. Fokoué, who is a passionate, enthusiastic, and brilliant scholar. Inspired by clearly identified strong analogies between the building blocks of music and literature, I sought to utilize statistical machine learning concepts, methods, and tools for the analysis of these two human experiences. The statistical analysis of literary documents had been developed by text mining like topic modeling.

I transformed the music notes into matrices for statistical analysis and data mining. Specifically, each song was regarded and treated as a text document consisting of a bag of “musical words.” One way to represent these musical words is to segment the song into several parts based on the duration of each measure. Then, the words in each song turn out to be a series of notes in one measure. I employed the created matrices in topic modeling to detect the potential connections between musicians and latent topics.

I presented this work in many conferences already, and the most recent ones are JSM 2020 and the follow-up virtual meetup in February 2021 organized by Data Science DC and ASA TAIG. Every time, the audience was intrigued and fascinated by the underlying thought-provoking idea of a homomorphism between music and literature. Along this journey of music, I am fortunate to have made a lot of friends and talents in both statistical and musical fields, who are generous enough to offer me their ideas and [comments] that can possibly push this research forward.

During JSM 2020, ASA Text Analysis Interest Group (TAIG) award committee members systematically evaluated a large body of research in the growing field of text analysis (e.g., text mining, natural language processing, computational linguistics, web scraping, sentiment analysis, topic modeling, GAN text generation, automated translation). Subsequently, awards were presented to Qiuyi Wu and Enshuo Hsu.

Wu and Hsu were invited to elaborate and follow up on their prize-winning research this year at the Data Science DC (DSDC) Meetup, which has more than 13,000 registered members. In their own words, they tell about their research here.
Enshuo ("David") Hsu
The University of Texas Medical Branch
“Combination of Optical Character Recognition and Natural Language Processing to Identify Patients with Sleep Apnea in Electronic Health Record (HER) Data”

Using open-source tools and internet resources, I put together an image preprocessing module, an OCR engine (for processing text in images), and a deep learning–based text classifier to build a functional system. I was fortunate to be able to present the preliminary works at JSM 2020. Afterward, I continued to develop the data pipeline by examining different NLP models, including the state-of-the-art BERT model. I improved the image preprocessing and model evaluation processes and also collaborated with faculty in The University of Texas Health Science Center at Houston School of Biomedical Informatics for methodological insights. It was a pleasure to participate and share my updates in the April 2021 virtual meetup.

I presented the latest results in publication-ready tables and figures. It was a nice experience having face-to-face discussions within a community that is interested in and has some degree of familiarity with NLP. I collected helpful feedback, including alternative options of optical character recognition (OCR) engines, data pipeline management comments, and language model training suggestions. I look forward to future events from TAIG!

TAIG members are looking forward to the upcoming JSM 2021 contest, as well as new members, volunteers, and initiatives going forward. Contact the TAIG Executive Committee at asataig@gmail.com with questions.

Editor’s Note: The views expressed are the authors’ and do not necessarily represent those of their organizations.
Professional Opportunity listings may not exceed 65 words, plus equal opportunity information. The deadline for their receipt is the 20th of the month two months prior to when the ad is to be published (e.g., May 20 for the July issue). Ads will be published in the next available issue following receipt.

Listings are shown alphabetically by state, followed by international listings. Vacancy listings may include the institutional name and address or be identified by number, as desired.

Professional Opportunities vacancies also will be published on the ASA's website (www.amstat.org). Vacancy listings will appear on the website for the entire calendar month. Ads may not be placed for publication in the magazine only; all ads will be published both electronically and in print.

These listings and additional information about the 65-word ads can be found at www2.amstat.org/ads.

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Sent in by Roger Johnson
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