![ADSA Data Science Community Newsletter]

Data Science Community Newsletter features journalism, research papers and tools/software for January 13, 2022.

Please let us (Micaela Parker, Catherine Cramer, Brad Stenger, Laura Norén) know if you have something to add to next week's newsletter. We are grateful for the generous financial support from the Academic Data Science Alliance

ANNOUNCEMENT — NEW PULSE SURVEYS

For 2022, we are focusing on the "community" aspect of the Data Science Community Newsletter by getting to know readers better through *short* 1-3 question surveys.

Results will be published in the following issue.

Survey: Post-pandemic how many days do you plan to spend on campus during the academic term?

SPONSORED CONTENT

LONG COVID RESEARCH — A MASS DISABLING EVENT?

In a Jan 10th **preprint** on bioRxiv, researchers primarily from **Yale**, **Stanford**, and **Mount Sinai School of Medicine** used a mouse model to investigate the link between "mild" SARS-CoV-2 infections and the neurological symptoms reported by patients with long COVID (LCoV). They found evidence of "impaired hippocampal neurogenesis, decreased oligodendrocytes and myelin loss" in the mouse model at 1 week post-infection persisting until at least seven weeks. "Neurological symptoms are emerging as relatively common sequelae of SARS-CoV-2 infection, with persistent cognitive impairment affecting approximately one in four COVID-19 survivors (Nasserie et al., 2021). While more common in individuals who had experienced severe COVID requiring hospitalization, even those with mild symptoms in the acute phase may experience lasting cognitive dysfunction (Becker et al., 2021; Nasserie et al., 2021)." It is unclear if these new findings will have any impact on disease mitigation efforts. One symptom impacting even those who have not been infected with SaRS-CoV-2 is emotional fatigue.

A **separate study** among Israelis investigated whether vaccination (**Pfizer/BioNTech**) might offer protection against developing LCoV. The study found that 35% of those who had tested positive for SARS-CoV-2 had symptoms that persisted for weeks or months, including "fatigue (22%), headache (20%), and weakness in arms or legs (13%)." A single dose of the vaccine offered no meaningful reduction in LCoV symptoms compared to being unvaccinated, but two doses offered a "54-82% reduction in reporting symptoms among those fully vaccinated for seven of the ten most commonly reported symptoms." Reductions in symptomology in this study were primarily in people over 60 years old.

The CDC published a **research brief** showing that there is a substantially increased risk of developing Type I diabetes for kids following a COVID infection.

Katie Bach, **writing** for the **Brookings Institution** spelled out the back of envelope impact LCoV could already be having on the US labor force. Using studies on LC incidence rates from the **National Health System** in the UK, she estimated that, "31 million working-age Americans— more than one in seven—may have experienced, or be experiencing, lingering COVID-19

symptoms". With 70% of LCoV sufferers sick for at least 3 months and 33% sick for at least a year, that would explain why at least 1.1 million Americans are on the sidelines of the labor force.

The relative lack of discussion of LCoV as a "mass disabling" event can be chalked up to a combination of a long-standing aversion to directly addressing disabilities at all, the need to put out fires around current covid patients/cases/testing, and the nascent status of research on LCoV. But LCoV needs to take a prominent place in the discussions about how we proceed from here. What kind of economic support will be available to LCoV patients and their families?

COVID'S GENETIC TREE IS JUST DIFFERENT
Elsewhere in COVID news, genetic epidemiologists like **Adam Kucharski** who are keeping tabs on the way SaRS-CoV-2 mutates are showing (with great charts, **antigenic turnover trees!**) that it doesn't evolve the way flu and cold viruses do. New mutations do not primarily arise from the most dominant strain. The Omicron variant did not emerge from the Delta variant. No real conclusion here, just more evidence that SaRS-CoV-2 is not the damn flu.

Featured Jobs
See the ADSA Jobs Page for more opportunities.

THE UNIVERSITY OF
CHICAGO
Preceptor in Data Science, University of Chicago - Data Science Institute. Chicago, IL.

PRICE FIXING CASE FILED AGAINST 16 TOP US UNIVERSITIES
The **allegations** against 16 top US universities are that, through the **568 Presidents Group**, the schools colluded to determine financial aid packages for needy applicants in ways that undercut the applicants' ability to see a range of financial aid packages. The group's membership includes: **Amherst College**, **Boston College**, **Caltech**, **Claremont McKenna**, **Columbia**, **Cornell**, **Dartmouth**, **Davidson**, **Georgetown**, **Grinnell**, **Johns Hopkins**, **MIT**, **Middlebury**, **Northwestern**, **Pomona**, **Rice**, **Swarthmore**, **Notre Dame**, **Wellesley**, **Williams**, and **Yale**. This Group coalesced in the 1990s after a similar anti-collusion case to work out how colleges and universities could standardize the formulae they use to assess need-based aid without violating federal law.

Notably absent from the 568 Presidents Group are **Harvard** and **Stanford**, both of which offer full-tuition scholarships to low- and middle-income families. Stanford **waives tuition** for families making $150,000 or less and also waives room and board fees for those making $75,000 or less. Financial aid is **similar** at Harvard, though they expect some family contribution starting at $65,000 in household income.

This case may not make much of a difference, but it certainly made a surprising headline.

INTERNATIONAL SCIENTIFIC COLLABORATION VS NATIONAL SECURITY
Following several prominent trials of research scientists (**Charles Lieber** — charged; **Anming Hu** — cleared) who attracted the attention of the **FBI** for their research collaborations involving foreign governments (e.g. China), the **White House Office of Science and Technology Policy** has issued **guidelines** about how academics should disclose relationships with foreign bodies going

forward. Academic institutions that have reviewed the guidelines note that for a document intended to provide clarity, it fails to offer "any guidance on the specific research affiliations that pose a risk to national security and might prevent a scientist from obtaining federal funding."

Featured Events
See the [ADSA Events Page](#) for more details and more opportunities.

Call for Nominations: [Future Leaders Summit 2022](#)
Attendance fully funded.
Dates: Nominations due 21 Jan 2022; Event 6-7 April 2022.
Eligibility: US-based grad students and postdocs with research on responsible data science and AI.

COLUMBIA GRAD STUDENTS REACH TENTATIVE BARGAINING AGREEMENT
New York State's Comptroller **Thomas DiNapoli** sent a short but **[pointedly worded letter](#)** to **Columbia University's** President, **Lee Bollinger**, asking him to please address the then 7-week long graduate student strike. Another three weeks went by — which included the end of year holidays — and on 7 Jan 2022, the Columbia students **[announced](#)** a tentative agreement is in the works. Details are still being negotiated and will be released later this month.

For context, the **[$31,140 stipend](#)** for Columbia grad students is **[less than](#)** 40% of the Area Median Income for New York City. For foreign-born grad students — usually about 35% of a graduate student population — it's generally illegal to work in off-campus jobs to supplement income.

We have said it before and will repeat: expect more labor organizing among academics.

FACULTY FIGHTING FOR SAFE TEACHING
The incredible transmissibility of the Omicron variant coupled with a prevailing yet questionable narrative that it is "mild" has led to tension between faculty at the **University of Louisville**, who are being **[threatened with disciplinary action](#)** for teaching remotely. Within the **University of North Carolina System**, **North Carolina State University** has been having **[thoughtful-but-frustrating](#)** faculty Senate meetings as the Student Health representatives report that their office is about to fall over due to too many students testing positive. As far as we can tell, the vast majority of campuses are plowing ahead with in-person expectations for this semester. Some are granting one-off requests for remote teaching or deliberately looking the other way.

SMALLER INCOMING UNDERGRADUATE COHORTS
Applications from high school students were **[down between 4 and 10 percent for the 2020 year](#)**, mostly among underserved student populations.

To counter this trend, many schools, including those in the **University of California System** system have dropped SAT/ACT requirements. The UC system schools are also **broadening the scope** of high school courses that will meet their academic expectations for incoming freshmen. Data science and statistics classes can satisfy math requirements, for example.

NEW YEAR, NEW YOU — ACADEMIA STYLE
There are three distinct types of academics emerging from this pandemic — those who want to leave academia (Type A: Resignation the dream and Type A': Resignation the nightmare), those who just want to survive (Are we there yet?), and those who are using all of their quarantime to write/research more (Overachievers).

Here are tweets sent by all 3+ types:

Overachievers: **Writing a Book Proposal is Easy: A Tweet Thread** by **Laura Portwood-Stacer**

Are we there yet?: **Professor in Florida tired of getting no protection against COVID** by **Michelle Nolan**, a viewpoint **endorsed** by **Twitter's** Twitter account
Resignation the dream: **New semester, updated resignation letter** by **Anthony K Webster**. See also: **Corvin Greene**

Resignation the nightmare: **"How many applications does it take to admit defeat?"** by **Jacob Ari Labendz** as well as "extra time on tenure clock **may not be enough**" by **Emiko Blalock**. See also: **Doc Elovitz** and this long thread started by **Lavanya Murali** and co-signed by over 100, most of whom have left academia.

DATACENTERS ARE ENERGY HOGS
"Datacenters now consume anywhere from 2 percent to 5 percent of global energy," with a huge growth trajectory. There were half a million data centers in 2012; in 2020 that number was up 16x to 8 million. The **Treehouse project**, a collaboration between **Microsoft Research**, **MIT**, **Columbia University**, the **University of Michigan**, and the **University of Washington**, aims to make data centers more energy-aware by turning their attention to the software. "In essence, the Treehouse effort seeks to treat energy like a first-class datacenter resource, alongside compute, storage, and networking."

DON'T BLAME GOOGLE, BLAME SELF-SELECTING REPUBLICANS...
...for political filter bubbles/echo chambers. That's according to **new research** led by **Ronald Robertson** of **Stanford** with heavy participation from **David Lazer's Northeastern** lab (and alum **Katya Olgyanova** now at **Rutgers**) that was able to investigate the **Google Search** results users saw and the results on which they clicked. The authors write, "the search engine is not pushing strong partisans into 'filter bubbles', but strong Republicans are asymmetrically selecting into 'echo chambers'." A similar result could not be replicated for strong Democrats.

AMERICA'S TOP RESEARCH UNIVERSITIES IN THE SOCIAL SCIENCES
A bit **click baity**, I know, but if you don't want to click - larger departments were over represented here because the measurement looked at total expenditures for research and development. There was no rebalancing expenditures on a per capita basis nor any measures of productivity or impact (as controversial as those are). Unsurprisingly, **University of Michigan** was a strong performer with **Harvard**, **Arizona State University**, **New York University**, **University of California, Berkeley**, **Indiana University**, and **University of North Carolina** also showing up well.

WHAT LED AT&T TO AUTOMATE CALL SWITCHING?

The transformation began in the late-1910s and wasn't finished until 1978. Very cool **history of technology paper** by **James Feigenbaum** and **Daniel Gross** is out. Consider adding it to your syllabi!

NEW PROGRAMS, FOLLOW THE MONEY
Click through to access **a structured spreadsheet** of New Programs and money moving around in academic data science.

DATA VISUALIZATION OF THE WEEK
The Conversation; Trish Greenhalgh, Jose-Luis Jimenez, Shelly Miller, Zhe Peng from January 11, 2022
"Here's where (and how) you are most likely to catch COVID – new study"

Type and level of group activity	Low occupancy			High occupancy		
	Outdoor and well ventilated	Indoor and well ventilated	Poorly ventilated	Outdoor and well ventilated	Indoor and well ventilated	Poorly ventilated
Wear face coverings, contact for short time						
Silent	<0.001%	0.026%	0.16%	0.001%	0.091%	0.55%
Speaking	0.002%	0.13%	0.78%	0.005%	0.45%	2.7%
Shouting, singing	0.009%	0.78%	4.6%	0.033%	2.7%	15%
Heavy exercise	0.022%	1.6%	10%	0.077%	6.2%	32%
Wear face coverings, contact for prolonged time						
Silent	0.003%	0.26%	1.6%	0.011%	0.91%	5.3%
Speaking	0.016%	1.3%	7.5%	0.055%	4.5%	24%
Shouting, singing	0.094%	7.5%	37%	0.33%	24%	81%
Heavy exercise	0.22%	17%	67%	0.76%	47%	98%
No face coverings, contact for short time						
Silent	0.001%	0.074%	0.45%	0.003%	0.26%	1.6%
Speaking	0.004%	0.37%	2.2%	0.016%	1.3%	7.5%
Shouting, singing	0.027%	2.2%	13%	0.094%	7.5%	37%
Heavy exercise	0.062%	5.1%	27%	0.22%	17%	67%
No face coverings, contact for prolonged time						
Silent	0.009%	0.74%	4.4%	0.031%	2.6%	14%
Speaking	0.045%	3.7%	20%	0.16%	12%	54%
Shouting, singing	0.27%	20%	74%	0.93%	54%	>99%
Heavy exercise	0.62%	41%	96%	2.2%	84%	>99%

Deadlines
Conferences
[Jeff Bigham is] helping out with the Human-Centered NLP "theme" track at NAACL
"the deadline is January 15th, so not a lot of time, but hoping to get some human-centered submissions!

Tools & Resources
Broaden your scientific audience with video animation
Nature, Career Column, Alvina Lai from December 28, 2021
"To make my research more accessible, I decided to take advantage of a resource that much of the world already uses: YouTube."
New publication: Data Science in the Library
Research Information, Library News from January 5, 2022

"*Data Science in the Library: Tools and Strategies for Supporting Data-Driven Research and Instruction*, from Facet Publishing, brings together an international group of librarians and faculty to consider the opportunities afforded by data science for research libraries. Using practical examples, each chapter focuses on data science instruction, reproducible research, establishing data science services and key data science partnerships."

[Best Paper Awards in Computer Science](#)

Jeff Huang from January 5, 2022

This is a collection of best paper awards from the main conferences in each computer science subfield, starting from 1996. This data was entered by hand from sources found online (many of them no longer available)"