Political polarization distilled using data science

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Despite the pandemic obliterating in-person interaction, Penn undergraduates Emma Arsekin and Janelle Schneider were able to gather and assess large amounts of data for political research, some from

sizeable cross-sections of Pennsylvania's population, and get some valuable insights into political persuasion. As research assistants working for political science professor Daniel Hopkins, the two undergraduates spent the summer taking part in the Penn Undergraduate Research Mentoring Program (PURM) program.

Emma Arsekin, a junior from Houston, Texas, had a robust STEM background upon entering Penn, and was heavily involved in astrophysics research. "I took a hard left turn when I discovered political science research." Now a political science major, Arsekin looked to PURM for an internship that could ease her into social science research. Hopkins' research project, titled "The Racialization of American Politics" caught her eye. The project would allow her to analyze data from surveys in a humanities context, which she had never done before. "I'm interested in political science and history, especially in the Balkans, where my family is from. Racialization in politics is a commonly studied phenomenon in Balkan politics and history, because there is a lot of ethnic tension there."

Hopkins, a political science professor with a secondary appointment at the Annenberg School for Communication, writes extensively on politics and race, demographics, and partisanship, and draws thoughtful conclusions. He is currently writing a book about race and the Affordable Care Act (ACA). Having Arsekin and Schneider as research assistants helped address the "bottleneck" of data Hopkins has compiled, and added valuable visual aids, including a video Arsekin made and a timeline from Schneider. Arsekin was particularly involved in tailoring survey questions surrounding American response to racial justice in the wake of the police killings of George Floyd and Breonna Taylor.

Schneider, a junior political science major from Hudson Valley, New York, had taken a class with Hopkins on data analytics in the fall of her sophomore year. When looking through the internships available through

PURM she saw Hopkins' project and was excited. "He was such a wonderful professor."

For Hopkins, having research assistants with a range of data analytic skills has been "a game changer" in terms of his work. "Whenever I work with undergrad research assistants, I identify the skills they want to build. And one of the things I want them to get out of this is what it means to work together as a research team."

Despite it being an unusual summer, Hopkins found that being separated physically, unable to have lunch together or be in a physical space together, also meant the team didn't have the distractions, and were able to dive into long conversations about the research. "One of my jobs as a supervisor of this kind of work is to motivate and explain why we are doing this, and what is the research rationale. How do you take on complicated research projects, and how would you undertake the project to reduce error?"

The work itself wed large data with humanities and political opinion. Using R language (a powerful tool for looking at large sets of data), Schneider analyzed data from exit polls Hopkins gathered from the 2019 Kentucky gubernatorial election. The study focused on the precise wording when gathering public opinion about a political issue—in this case, the ACA. Voters in Kentucky were asked how they felt about the ACA. The treatment group were also informed that Kentucky's uninsured rate was down 6%. That question intended to look at wording, and how people's views of the ACA change when they are primed for hearing about the benefits provided by the state.

"I took these responses and looked at the treatment and control groups based on a favorability rating of one to four," Schneider explains. "I also broke the responses down by partisanship, and where people got their insurance."

The research team concluded that among Republicans there was greater favorability for the ACA when the 6% figure was brought up. The greatest increase in favorability came from Republicans, followed by independents, with a medium change in favorability. Among Democrats, their favorability measured the same. "We live in a polarized time, and that polarization is rooted in partisanship," Schneider says. "This study highlights the fact that people associate the ACA with [President] Obama. But when we included the 6% drop in uninsured rates, their favorability increased."

Hopkins has been collecting data from Pennsylvania state residents every month. Because of the coronavirus pandemic, the research team put together an ad-hoc study over the summer analyzing a panel of residents to determine if they support extreme policy changes if delivered by experts. The study, "Partisan Polarization and Resistance to Elite Messages" was published this summer. "We used the panel to embed experiments in the surveys to see if Pennsylvanians were more or less likely to support a dramatic public health policy, like closing schools for the year or shuttering businesses," says Arsekin. "We wanted to find out if they were more likely to support those policies if they are advocated by 'elite' sources like public health experts or government officials, and how partisanship plays a role."

The research revealed that in general, when elites urge Pennsylvanians to follow a public health protocol, people showed support. But when the results are disentangled, and the elites are defined as government officials, support goes down. "We didn't find aversion to elitism, but people are distrustful when a politician advocates for a public health initiative," Arsekin says. "It has implications on who should be publicly advocating for these kinds of policies."

"Looking at the social media accounts and press releases of state Republicans and Democrats, and national leaders as well, I looked for a

point where the public health issue of mask wearing became politicized, and created a timeline," says Schneider. "It was interesting to see how an epidemic begins scientifically, and then becomes so political, over wearing a mask."

Arsekin and Schneider had a role in every state of the research process: taking inventory of every question asked, performing metaanalysis, and setting up the next wave of survey questions. "I was extremely surprised to find people were neutral when a public health expert presents information, but very polarized when a government official asks you to do something for public health," says Arskine. "One of the big things that surprised me is how polarized and opinionated people in the state are. The responses about how people would describe [Pennsylvania] Governor [Tom] Wolf blew my mind from both ends of the political spectrum. Everyone had something to say."

Arsekin points out that the timing of this summer PURM internship coincides with an election year, and every election cycle has a spike in partisanship. "As far as whether this administration has done something to fuel such extreme partisanship, it's too early to say. But it is an election year. When my internship ended, Dr. Hopkins had started a related project on media and its effects on political engagement. I started setting up the study where free subscriptions to the *Pittsburgh Post-Gazette* and the *Philadelphia Inquirer* were given out to residents to see if they would become more politically engaged. I left feeling like there is always so much to work on, so much to learn. It was a lot of fun and really refreshing."

Schneider plans on attending law school after she graduates, and her summer spent working with Hopkins and Arsekin model the kind of environment she hopes to find in law.

"Our team had a real sense of collaboration, and I liked that. I'm

interested in the intersection of public policy and public opinion."

A large portion of her work focused on the visuals for Hopkins' forthcoming book on the ACA. "The class I took with [Hopkins], Intro to Data Analytics, was the first exposure I had to survey research and code. Now, the work I did this summer will be included and cited in his book. It's exciting that I was able to make a contribution."

Provided by University of Pennsylvania

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