

Undergraduates and Political Science Research: Insights from Research Assistants in a Minority-Serving Institution Lab

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ABSTRACT This study examines undergraduate research experiences at a minority-serving institution (MSI) in a political science laboratory. Students contributed to projects in a collaborative research lab at the University of California Riverside that involves undergraduate and graduate students in projects related to health and politics. Adopting a participatory approach to research, the study's research participants also are coauthors who co-created the research protocols; collected the data; transcribed, coded, and analyzed the data; and wrote up the findings. Our analysis of 12 in-depth interviews with current and former undergraduate research assistants (RAs) found that their work in the lab challenged their perceptions of what research is and what it means to do research; shaped their path to

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pursue graduate studies; developed their social and professional skills; and offered an inclusive and humanizing experience with graduate students and faculty members. Challenges that the RAs mentioned included time management, bureaucratic accounting and payroll procedures, and feelings of self-doubt; the lab's culture of inclusion and independence mitigated some of these challenges. Our findings align with the scholarly literature that suggests collaborative research opportunities can have beneficial outcomes, particularly for students from groups that are underrepresented in doctoral programs.

"I used to think research was just this very individualistic thing that a very few select people would take part in."

~Ezra²

"I [thought] that research was like two old white guys sitting in a lab putting chemicals into a giant Erlenmeyer flask or something."

~Julian

"I always thought research was STEM related. And I always pictured it would be like 'Big Bang Theory.' And it would just be like four people in a lab, just doing experiments for months and months and months."

~Layla

This article's epigraph of quotes from undergraduate students working in a political science lab suggests a general perception of research that is rather narrow. Research seems like it would be lonely, and imagining laboratory research evokes the natural sciences and activities involving experiments. As this study shows, mentored engagement in collaborative political science research opportunities can transform the way that undergraduate students perceive research. It also develops their skills and promotes the possibility of pursuing more advanced research opportunities, including but not limited to those in political science doctoral programs.

The scholarly literature on undergraduate involvement in research identifies multiple benefits for students, both immediate and longer lasting. Concretely, participation in undergraduate research develops students' skills, knowledge, and appreciation for how research is accomplished (Weinschenk 2021). Undergraduate students involved in research early in their college experience are more likely to complete their degree program (Lopatto 2004). Undergraduate research also helps students to clarify or confirm their career plans (including decisions about going to graduate school), increases their confidence in doing science, and enhances their ideas about the nature of science (Sadler et al. 2010; Seymour et al. 2004; Tsui 2007). Research also has found these benefits from undergraduate research experiences (UREs) at Hispanic-Serving Institutions (HSIs) (Rodríguez Amaya et al. 2018), such as the one featured in this study.

There are multiple modes of involving undergraduates in political science research, including by integrating research in undergraduate courses (Bowman and Jennings 2005; Druckman 2015; Huerta 2015; Kelly 2021; Knoll 2016; Rosenthal 1999) and hiring them as research assistants (RAs) (Melusky 2019). Dotterer (2002) found that undergraduate research flourishes when it embraces the collaborative investigative model, which involves collaboration

between a mentor and students. This type of collaboration is valuable to students because of its potential for respecting diversity of talents and learning styles while also providing faculty contact outside of the classroom. Studies have found that engaging in collaborative research can help undergraduate students to gain technical, analytic, and critical-thinking skills and to increase their ability to communicate ideas and thoughts more effectively (Ishiyama 2007). Political science students who participated in collaborative research earned higher scores on a major field aptitude test and also were more likely to be admitted to graduate school within a year of graduating (Ishiyama and Breuning 2003).

Becker, Graham, and Zvobgo (2021) proposed an undergraduate research program conceived as a learning community wherein comfort, collectivity, and collaboration can be preserved. This article offers insights from a collaborative model that embraces the values that they proposed. Structurally, the lab involves a faculty researcher as principal investigator (PI) and a team of both graduate and undergraduate students. It is not our goal to provide a roadmap for how to build a political science laboratory (see, e.g., Becker 2020; Weinschenk 2021). Rather, our contribution is to share the benefits and challenges of collaborative undergraduate research as experienced by undergraduate RAs working in the Dionne Publicly Engaged Research Lab (DPERL) at the University of California Riverside (UCR).

UCR is a public land-grant research university designated as an R1 institution—that is, a doctoral university with very high research activity. Most of UCR's undergraduate students are first-generation and almost half receive a Pell Grant to support their study. *US News & World Report* has ranked UCR the #1 public university every year that it has ranked colleges on a metric of social mobility (Warren 2022). At the same time, the campus is the least funded of the 10 University of California campuses (Zinshteyn 2022). UCR also is a minority-serving institution (MSI), having been designated an HSI and an Asian American and Native American Pacific Islander-Serving Institution. These are special recognitions assigned by the US Department of Education's Higher Education Act for having full-time-equivalent undergraduate student enrollments that are at least 25% Hispanic and at least 10% Asian American and Native American Pacific Islander, respectively. UCR's position on educating students from equity-seeking groups (often phrased as students from underrepresented backgrounds) offers an important impact opportunity. Morales, Grineski, and Collins (2022) noted that UREs can have a positive impact on minority students' aspirations for graduate school. Likewise, UREs have been shown to increase retention and perseverance of at-risk students (Collins et al. 2017).

Since its inception in 2018, DPERL's recruitment, training, and RA work have evolved, generally using the following procedures. From the courses she has taught, the lab's PI recruits students who demonstrate academic aptitude, a strong work ethic, and/or detail orientation. She especially encouraged lab involvement to those who felt comfortable communicating their ideas in class or during office hours. Not all invited students join the lab; however, those who do enroll in a 10-week course to learn about social science research. During this credit-bearing course that meets once weekly, students complete Collaborative Institutional Training Initiative training for social and behavioral research and learn how to carry out research tasks including reviewing scholarly literature, transcribing audio and video files, coding qualitative data, and entering data. After completing the course, RAs interested in continuing with the lab are hired through standard university onboarding procedures for undergraduate students and are paid the starting wage of \$15 per hour.³ Undergraduate RA tasks vary, including transcribing podcast episodes, coding newspaper and journal articles, and reviewing scholarly literature, among other tasks. In bi-weekly memos, they enumerate tasks that they engaged in and record questions or comments to be addressed during lab meetings. DPERL members (including RAs in training) meet every other week for an hour to discuss research projects in progress and recently published research relevant to lab work and to engage in other professional-development activities. DPERL's PI hosts quarterly social events, for which attendance is optional but typically high. The COVID-19 pandemic sometimes required the lab's hybrid meetings to be fully remote.⁴

invited (but not required) to collaborate on this project, the involvement of which carried through from conception to execution. Although we divided the labor on this article, all coauthors had an opportunity to influence data collection, analysis, and write-up.

Our analytical approach is like much of the empirical research on the impact of UREs that has been published in that it primarily relies on interview data (Linn et al. 2015). We examined data collected via interviews with 12 students, all of whom work or worked as undergraduate RAs in DPERL.⁵ Although the coauthors also include graduate students, they were not interviewed because our focus was on the experiences of undergraduate RAs. Respondents were recruited through the lab's Slack channel and via email. Our 100% response rate likely reflects the importance that undergraduate students put on their voice being heard when it comes to understanding their experiences. These 12 students constitute the entirety of undergraduate DPERL RAs who worked sometime between the inception of DPERL in 2018 and 2022, when the interviews were conducted. Most interviews were with current undergraduate students, others were with RAs who were no longer at UCR because they had graduated or transferred. Following informed consent to participate and be recorded, we conducted one-on-one interviews via Zoom, using the audio-recording feature. Three undergraduate coauthors served as interviewers, asking the respondents questions drawn from a prepared guideline. However, the interviewers sought to have the exchanges mirror natural conversations between undergraduates.⁶ Questions included those designed to collect basic demographic information

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Our study draws on 12 interviews conducted with former and current RAs. In our qualitative analysis of the interviews, we found that the benefits of undergraduate students participating in collaborative research included building their research skills, boosting their self-confidence, and providing opportunities to meaningfully interact with faculty members and graduate students. Challenges that lab RAs faced included time management, bureaucratic accounting and payroll procedures, and feelings of self-doubt. The data recount undergraduate RAs' perspectives about how the lab experience reshaped their understanding of what research is and what doing research looks like.

METHODS AND DATA

We adopted a participatory approach to research through which we centered the experiences of undergraduate RAs to inform our priorities and protocols with the aim of better understanding their perceptions of research. In the Cornwall and Jewkes (1995) participatory research framework, we would characterize this project as *collegiate*. In this type of research, researchers and "local people"—in this case, undergraduate RAs—worked "together as colleagues with different skills to offer, in a process of mutual learning where [undergraduate RAs] have control over the process" (Cornwall and Jewkes 1995, 1669). All RAs were

such as a respondent's major, age, graduation year, and graduate-school intentions, as well as more in-depth queries relating to their research experiences. Interviewees were asked about how they joined the lab, DPERL tasks they had completed, any other research experiences they have had, and the benefits and challenges they encountered through their lab experiences. Interview length ranged from 15 to 48 minutes, with an average of 29 minutes.

We transcribed these interview recordings using Otter.ai's speech-to-text transcription platform, through which the audio was played and Otter.ai produced a rough transcript. After downloading the rough transcript, a transcriber made additional edits to identify the "Interviewer" and the "Respondent" in each interview, as well as to correct mistaken auto-transcriptions or misspellings and to insert non-text notes (e.g., "[laughs]"). Once this step was complete, someone other than the original transcriber reviewed the transcription by listening to the audio to validate the transcript or to make additional changes before it was coded. A typed transcript averaged slightly less than 12 pages.⁷

We used both inductive and deductive coding to process the transcripts. First, we coded the transcripts using an inductive-coding approach based on questions from the interview guide. For example, we coded respondents' ages, majors, and research tasks

as well as their perceived benefits and challenges of being a lab RA. New themes emerged in our review of transcripts including, for example, the difficulty of time management, how participation in the lab gave RAs a sense of independence, and perceptions of the lab's culture as inclusive and humanizing. Peer reviewers proposed additional themes, including first-generation college experiences and remote work. Together, these emergent themes informed our deductive coding, in which coders re-reviewed the interview transcripts. All coding information was highlighted in the transcripts using a comment feature and then recorded in a shared spreadsheet. Coders also collected in a separate document representative quotations from the transcripts that illustrated the themes.

RESULTS

The 12 RAs interviewed were between 18 and 22 years old, six of whom had recently completed their freshman year in college. Most RAs had spent nine months working in the lab, although two had spent more than a year as a DPERL RA. Six RAs were political

three RAs—Ezra, Joshua, and Julian—invoked their first-generation status when discussing the benefits of lab research experience. Before starting as RAs, they were “anxious” and “intimidated,” even “terrified of research.” Collaborative research labs can offer first-generation students resources and career advice through faculty mentorship and positive peer relationships. DPERL RA Joshua noted that first-generation students are encouraged to “seek help and ask questions.” Julian remarked that his work in DPERL and for another faculty member helped him to learn about the “hidden curriculum” in academia.

All RAs who were interviewed had positive sentiments about doing research, even though some initially doubted their capacity as researchers. Starting with language similar to that invoked by Ezra, Joshua, and Julian, Melody said the lab “...was scary at first but it's been super fun.” Zachary and Samantha spoke about how they were initially “nervous” but that their discomfort dissipated after the first lab meeting. In suggesting advice for future RAs, Layla spoke about how to overcome self-doubt by reflecting on one's invitation to the lab: “You were picked to do this because a

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science majors, three were public policy majors, and another was a political science and public policy double major; the remaining two RAs were mathematics and undeclared-psychology majors, respectively. Of the 12 RAs interviewed, three reported having had previous UREs and nine reported their intention to pursue a graduate degree.

When asked about their perceptions regarding research before joining DPERL, most respondents suggested that they pictured research as related to STEM disciplines. Similar to the sentiments shared in the epigraph, Mila explained how DPERL had changed the way she perceived research by stating: “I knew that humanities has research, but I didn't really know what it looks like.” Ezra spoke about his expectation that research required a long duration

professor or someone else really admired you for your work and think that you're a good fit or a good asset to the team. So don't constantly keep doubting yourself. That's the mistake I made.”

The RAs cited various benefits of working in DPERL. The most common responses included learning more about research and research methods and improving self-confidence. Of the nine students who explicitly answered a question that asked them to reflect on their self-confidence, all but one said the experience boosted it. Layla noted that the lab experience increased her confidence in her research skills (e.g., transcription, coding, writing, and working collaboratively) as well as in speaking about health and politics with family members who work in healthcare. Mila spoke about how the lab experience made her feel more

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of work: “I thought [research] was this ghostly thing that would just absorb time.” Multiple RAs noted how their work doing political science research in DPERL had changed their perception about what research looks like and where, how, and by whom it is done. For example, in comparing which sources were permitted in a course research assignment and the type of work Tariq did in the lab, he noted how research did not have to be inaccessible—particularly for first-generation college students. He stated: “There's this gap between political scientists and researchers, and us, first gens and...you know, people who are barely getting into research, and I feel like when you're pushed to just go to those very dense articles and stuff, it just separates you even more from being informed.”

Although there was no interview question that explicitly asked RAs whether they identified as first-generation college students,

confident in speaking to professors; when her interviewer clarified whether she meant professors in her major, she broadened the scope and stated, “Any of them.”

A benefit frequently mentioned in RA interviews was having positive experiences with faculty members, graduate students, and other undergraduate students. RAs credited DPERL with helping them to improve social skills by providing opportunities to make new friends, become closer to existing friends, and become comfortable communicating with their graduate-student teaching assistants and the faculty. Julieta spoke about how working in the lab made faculty members and graduate students feel “approachable.” Tariq appreciated working with graduate students because he found it “interesting to see how the graduate students research and [the] problems they were tackling.” Ezra remarked how before working in the lab, he perceived research as

unattainable because he lacked connections to research networks that he imagined took years on campus to build and that he—a transfer student—simply did not have that time.

Many DPERL students already had plans to attend graduate school, and some RAs mentioned that their experience working in the lab shaped their graduate-school plans. For example, Joshua said that the lab better prepared him for graduate school “because you never feel quite ready until you get that experience....So DPERL really did change my perception about grad school because it provided me that [confidence] in applying to grad school...I felt much more prepared.” Julieta stated that DPERL reoriented her preparation for graduate school: “Rather than just going because I wasn’t sure what I wanted to do, I’m applying to grad school because I know what kind of research I want to do, what I want to do with that research, and what kind of institutions I want to be working in....I feel a lot more guided.” Ezra attributed the lab with expanding his future goals, stating: “I didn’t know I was going to be interested in a PhD; I thought just the Masters was going to be the most for me.” Julian already knew before joining DPERL that he wanted to earn a PhD and remarked how his lab experience developed his interests, making them more concrete and illuminating “the unspoken assumptions needed to succeed in...academia.”

The primary challenges that RAs mentioned in their interviews included time management, bureaucratic difficulties with university accounting and payroll staff, and the sense of self-doubt. Among these challenges, time management was mentioned most often. Julieta discussed “being spread too thin” because students were juggling club meetings, class and exam preparation, and lab tasks, as well as their social life. Samantha described struggling to fit her DPERL assignments into her schedule and needing some time to adjust. Nevertheless, Samantha and Marisa both reported that the lab experience helped them to learn how to better manage their time. Specifically, Samantha explained how the lab workload sometimes required several hours to be blocked out of her day to complete a certain task. She learned how to adapt her busy schedule for that time slot. The challenges with human resources mentioned by Julian reflected the bureaucratic paperwork required in hiring and the annual rehiring process, which led to lapses in his ability to work and the payment of wages. Although it was not mentioned frequently in the interviews, the PI encountered multiple issues in timely onboarding and payment of RAs during the period of this study. Regarding self-doubt, Melody said that she had a “...fear of being completely inadequate, and failure.” Melody’s feelings are consistent with the other interviews that noted RAs’ anxieties about working in the lab.

In addition to the challenges that RAs mentioned explicitly during their interview, much of the DPERL RA experience described in this article overlapped with campus closures due to the COVID-19 pandemic, which brought its own challenges. Most notable was a lack of motivation associated with remote work. Tariq, whose entire experience as an RA was during campus closure, lamented that he felt the pandemic made him less productive with his work in the lab: he is “definitely a better student when things are in person.” Layla remarked how remote work can be “super tedious” and how she looked forward to returning to campus for in-person lab meetings—even characterizing a circle of RAs working on their computers as “super, super fun.” Much of the work can be conducted remotely because lab members are all fluent with the remote collaboration tools that

the lab uses (e.g., Slack, Zoom, and Google Drive). Julieta, an RA who worked primarily during campus closure, noted that she “loved [lab] being online.” She found it interesting and “super cool” that graduate students would sign in to Zoom meetings from distant time zones.

Our data provide insight into how RAs could overcome challenges. Samantha noted the lab’s culture of inclusion and independence as beneficial. She spoke about connecting with other people in the lab: “I like the connections [and] the people...it’s pretty great to have...fellow lab members [even if] we’re not necessarily all friends, but we’re all connected because of something.” DPERL researchers could look to one another for community. Julian explained how connecting with fellow lab members made “the whole experience more humanizing, especially in an era where we’re looked at...judged based on the quality of our work, like the amount that we produce. And so it just really humanizes the entire experience in itself, just like everyone’s achievements and our small accomplishments and activities.”

Whereas the connections and companionship offered by fellow lab members proved valuable to undergraduate RAs, the opportunity to work independently on tasks also was mentioned as a rewarding experience. Angela stated that the “good mix of independence” with a helpful support system was a “really great way to experience researching and being in a lab for the first time.” Julian—who had graduated by the time of the interview and was set to begin a PhD program in political science—noted that independent and self-motivated work prepares undergraduates for graduate school because “that’s what graduate school is: a bunch of independent work.” Samantha mentioned that although many tasks involve independent work, the lab environment keeps students from being isolated: “At the end of the day, we do have to come together as a team and talk about the things that we’re working on.”

CONCLUSION

This article reports on UREs at an MSI in a social science field without clear disciplinary conventions for involving undergraduate students in research laboratories. We found that undergraduate involvement in collaborative research can broaden students’ understanding of research, build their social and professional skills, and possibly influence their path to graduate studies—even as it also challenges their ability to manage their time.

We note that there are some study limitations and potential concerns. First, our analysis was limited to the perspectives of undergraduate students who worked as RAs, and it does not involve comparison to those without research experience. Future research seeking to measure the impact of UREs in a mentored lab model would benefit from a longitudinal research design that randomizes entry into the lab over a staggered period or another research design that independently could attribute the outcomes we report to the lab experience. Second, some readers may be concerned that interview responses were not balanced by offering equally positive and negative reflections, with positive effects being more prevalent in the responses. However, this is consistent with a review of studies of UREs that found that undergraduates give high ratings to research experiences (Linn et al. 2015).

Third, lab recruitment may have introduced bias. Our recruitment strategy may have overlooked talented, hardworking students who either were not enrolled in the PI’s courses, were enrolled but had other constraints limiting their ability to perform

at a high level, or were enrolled but reticent to speak with their professor. Becker et al. (2021) advised faculty members to disseminate lab-recruitment announcements in a comprehensive way that also is inclusive, yielding a diverse lab membership. DPERL is a diverse lab, with women-identifying students outnumbering men-identifying students and with students from different racial, ethnic, and socioeconomic backgrounds.

The lab's diversity largely reflects the campus in which it is embedded. Unfortunately, UCR offers little financial support for undergraduate research in the social sciences and humanities. Without more investment, there likely will be missed opportunities for undergraduate students to learn more about research and potential paths to pursue doctoral studies. The scholarship on teaching and learning highlights the significant investment of time and effort necessary for UREs to have a meaningful impact (Hernandez et al. 2018; Linn et al. 2015). Nevertheless, UCR's high proportion of first-generation, low-income, and other students from equity-seeking groups makes it fertile ground to support collaborative research experiences because the literature has shown to benefit students from these backgrounds (Carpi et al. 2017). Our study documented UREs as having bolstered students' self-confidence in accomplishing academic tasks, approaching professors and graduate students, and befriending other RAs. Research has found that these factors contribute to broader academic success outcomes for minority students (Crisp, Taggart, and Nora 2015).

SUPPLEMENTARY MATERIALS

To view supplementary material for this article, please visit <http://doi.org/10.1017/S1049096523000215>.

CONFLICTS OF INTEREST

The authors declare that there are no ethical issues or conflicts of interest in this research. ■

NOTES

- Coauthors used a consensus process informed by Liboiron et al. (2017) to determine author order.
- The names of all interview participants are pseudonyms. The online appendix lists them with their age, major, year of graduation, and length of time working in the lab.
- The PI draws on her research funds, including external grants, to support this labor.
- Because some DPERL RAs are not residents of California, the lab's use of cloud computing and hybrid meetings (i.e., some RAs in person, some connecting remotely) predated the onset of the COVID-19 pandemic.
- The research described herein followed Protocol #HS 22-125 for human-subjects research submitted to the Office of Research Integrity at UCR.
- The lab's graduate students and PI could have conducted these interviews and, in some cases, were more experienced interviewers. However, we wanted to maximize the respondents' ability to speak freely, especially because some questions could yield critical responses, and we wanted to capture these critiques in the data.
- In compliance with Institutional Review Board protocol, identifying information was removed from the transcripts. After publication of this article, interview transcripts using pseudonyms and the coding spreadsheet will be posted to a publicly accessible data repository.

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