Evaluating Whether a Learning by Doing Initiative Meets DEI Goals

Sarah Wilson Sokhey
University of Colorado Boulder
sarah.sokhey@colorado.edu

Prepared for the ASPA Teaching & Learning Conference
Baltimore, MD
February 2023*

Abstract

How can we best evaluate if a learning by doing initiative is accomplishing its goals including its priorities in advancing diversity, equity, and inclusion? Drawing on my own previously co-authored published work (Nonnemacher and Wilson Sokhey 2022), I discuss how diversity and inclusion goals inspired the creation of an undergraduate research lab at a large flagship state university. Studio Lab was created to match research mentors with undergraduate students who work as paid research assistants at the University of Colorado Boulder. In 2020 Studio Lab began in the Department of Political Science, in 2021 it expanded to the Division of Social Sciences, and in 2022 it expanded to the College of Arts & Sciences. I present suggestions for those wishing to advance similar initiatives. I then focus on the DEI goals associated with the lab and provide a template for evaluating whether these goals are being met.

Introduction

How can we best evaluate if a learning by doing initiative is accomplishing its goals including its priorities in advancing diversity, equity, and inclusion? In this paper, I develop several concrete suggestions for how to evaluate whether a learning by doing initiative is meeting its objectives. In particular, I focus on whether the program is meeting its objectives in terms of diversity, equity, and inclusion (DEI). DEI goals are receiving a great deal of attention and many programs claim to prioritize DEI, but often have no concrete way of assessing whether these goals are being met.[1]

I apply these metrics to a real world case, the Studio Lab at the University of Colorado Boulder of which I am the creator and director. In Studio Lab, students apply for positions and faculty submit research project proposals. We then match undergraduate students with faculty research projects and pay students to work as research assistants. The lab also hosts social events and training workshops on a wide variety of topics. Our goals include providing practical skills, academic experience, mentorship, and advancing diversity, equity, and inclusion goals on campus. Studio Lab also has the potential to improve student recruitment and retention.

As Studio Lab continues to attract more diverse groups of students and faculty with a wide range of academic interests in the social sciences, it is important to be clear about its goals and develop measures by which to gauge its performance. This paper seeks to provide a model of evaluation that may also be useful for other learning by doing initiatives.

This paper is organized as follows. First, I review the state of racial, ethnic, and gender biases in the discipline and the benefits of undergraduate research labs. Though undergraduate research labs have long been recognized to have educational and professional benefits, much less studied is how these labs can promote diversity and inclusion. Second, I explain

---

1. The first part of this paper is a slightly modified version of Nonnemacher and Wilson Sokhey (2022). The new and unpublished portions of this paper begin with the section, "Expansion of the Studio Lab for Undergraduate Students."

the specific objectives of our lab and how we seek to improve on existing lab models by promoting diversity and inclusion, and describe our experiences in launching our lab in 2020. Third, I offer suggestions for others interested in creating undergraduate research labs at their institutions. I argue that these considerations are urgently needed. Without taking practical steps to advance diversity and inclusion, labs are likely to reinforce existing inequalities. Finally, I present our DEI goals and offer a metric for how we might assess if programs like this are accomplishing their goals.

Diversity and Inclusion in Political Science

Addressing diversity, equity, and inequality is one of the most pressing challenges for academia today because gender, racial, and ethnic bias manifests at all stages of the research process. Djupe, Smith, and Sokhey (Forthcoming) document the institutional factors contributing to significant disparities across gender and race in academic careers in the social sciences. For instance, women are often underrepresented in the publication of journal articles (Teele and Thelen 2017; Saraceno 2020; Djupe, Smith, and Sokhey 2019) and in books (Samuels and Teele 2021). Furthermore, women face several challenges to career advancement in academia. They are under-cited (Chakravartty et al. 2018; Dion, Sumner, and Mitchell 2018) and they are less likely to be promoted to associate and granted tenure (Hesli, Lee, and Mitchell 2012). The COVID-19 pandemic has only increased the need for promoting diversity in political science as it reinforced and intensified existing structural disadvantages women face, especially those who are also parents (Shalaby, Allam, and Buttorff 2021; Breuning et al. 2021).

There is also a significant, and less studied, gap in the inclusion of non-white scholars who are Black, Indigenous, and/or People of Color (BIPOC) (Garcia and Alfaro 2021). Chakravartty et al. (2018) argues that the white-male paradigm is the predominant lens through which academic work is done. As a result, non-white scholars are underrepresented

in publications, citations, and editorial positions. Furthermore, Dupree and Boykin (2021) demonstrates how there are psychological, interpersonal, and structural factors that impede racial equity in academia. These include racial ignorance, stereotype expression, and the under-resourcing of scholars of color. Racial biases intersect with gender biases where women of color face incredible challenges from being hyper-observed and also ignored by the while-male dominated profession of academia (Michelson and Lavariega Monforti 2021).

As is evident, there are clear biases in political science that recent events have only spotlighted. To combat these racial and gender gaps, it is important to improve diversity and inclusion in the discipline. As Cassese, Bos, and Schneider (2014) highlights, women are more likely to discuss gender-related topics in scholarly work. Dion, Sumner, and Mitchell (2018) further show that the more gender diverse a subfield is, the smaller the gender gap in citations with women more likely to cite work from female authors. Dupree and Boykin (2021) argues that one of the sources of racial biases in academia is the lack of resources available to these scholars. If the discipline can improve inclusion and outreach to these communities, it can make progress on closing these gaps and diversifying the discipline. To promote inclusion in the discipline and lift up a diverse community of political scientists, we must invest in our undergraduates from historically underrepresented groups to generate a new, diverse generation of scholars.

The Benefits of Undergraduate Research Labs

Having undergraduates work with faculty on research is widely thought to improve educational outcomes (Becker 2019). Research opportunities improve student retention especially among those most at-risk of dropping out (Gregerman et al. 1998) and generate interest in topics (Russell, Hancock, and McCullough 2007). Research experiences enhance students' understanding of concepts (Ishiyama and Breuning 2003), promotes the ability to think critically, synthesize ideas, learn independently (Becker 2019; Ishiyama 2002), and improves their

success after graduation (Mabrouk 2009; Hathaway, Nagda, and Gregerman 2002). Social science research labs have also been shown to promote learning and produce high-quality data (Becker 2019; Glazier and Bowman 2019; Lei and Chuang 2009; Stover 1979).

Much less explored is how a lab can be an ideal initiative through which to promote diversity and inclusion. While diversity and inclusion are important goals for many universities and colleges, diversity does not automatically translate into inclusion in academic and campus life or success after college (**Tienda13**). A survey of introductory economics students reveals that women and underrepresented racial and ethnic minority students report less relevancy of the course material to their own lives, less belonging, and less belief that economics is something they could be good at (Bayer et al. 2020). Having a more diverse student body and courses on diversity and inclusion are obviously important, but should be part of larger efforts on campus.

Research also shows that students would benefit from diversity experiences outside of the classroom and, in particular, more interpersonal interactions with racial diversity. Bowman (2011) shows that these kinds of diversity experiences improve civic attitudes and behaviors. Based on a quantitative meta-analysis, he concludes that, "Colleges and universities must work not only to maintain a racially diverse student body but also to facilitate meaningful interactions among students from different racial backgrounds" (page 49). If we want to advance diversity and inclusion, classes are not enough.

Undergraduate research labs can advance diversity and inclusion goals by prioritizing the admission and mentoring of underrepresented students. Labs can also foster community through professionalization and socialization events that encourage students to form personal connections with each other and faculty. If some of the lab's substantive research relates to diversity and inclusion, this advances knowledge and interest about these issues and sends a powerful signal about the university's values. Furthermore, without a conscientious focus on diversity and inclusion, labs are likely to exacerbate existing inequalities.

Our Undergraduate Research Lab in 2020

We began with a pilot lab in summer 2019. Six students were recruited from classes taught by Sarah Wilson Sokhey including 2 women and 4 people of color.[2] Students worked together on a project coding news articles and presented their work to the political science department in fall 2019. Based on the results of the pilot, we received departmental and university funding to establish a research lab.

Our lab was officially launched in spring semester 2020.[3] We admit undergraduates as lab members who are matched with faculty projects and paid to work as research assistants. Lab members attend professionalization and socialization events, and are encouraged to present their research at our university and other venues, and to submit their work for publication. We began in-person and transitioned to be fully remote in March 2020 due to the COVID-19 pandemic.

We have several specific objectives:

- Goal 1: Promote diversity and inclusion.

- Goal 2: Develop professional skills including teamwork, presenting research in professional contexts (including conferences within the department, university, and larger community), and publishing the results of research in order to help students be academically successful and competitive in applying for other internships and jobs.

- Goal 3: Foster knowledge about the social sciences including theoretical, empirical, methodological, and policy oriented work.

In spring 2020, we invited applications from undergraduate students and asked faculty and PhD students in the political science department to submit proposals for projects on which students could work. Nineteen students were accepted out of 21 applicants including

---

2. Three students applied independently to the Undergraduate Research Opportunity Program (UROP) and received funding of $3,000. The faculty member received a team grant from UROP which partially financed the hiring of 3 additional students. Additional funds were provided from the political science department making it possible to pay each of the 6 students $3,000 for their summer work.

3. The lab website is www.colorado.edu/research/studiolab.

9 women and 3 people of color[4]. The admitted students were assigned to 5 different research projects including work on a human rights dataset, climate change, immigration policy, and trade liberalization. Two events were held in person before the pandemic required the lab to be fully remote.

Whenever possible, we assigned 2 or more students to a single project to promote teamwork and a better research output. For instance, one group of students was updating a human rights dataset enabling them to check for intercoder reliability. In other cases, students were coding the text of news articles and/or compiling news articles and primary and secondary sources. Students were paid an hourly minimum wage and were given a guideline of working about 5 hours a week.

Based on diversity in admissions and feedback from faculty, graduate students, and undergraduate students, the lab accomplished its objectives reasonably well in spring 2020 despite the challenges of the pandemic. Faculty and graduate students working with the lab overwhelmingly reported that they were happy with the quality of research assistance. Only 1 faculty member was not satisfied with the quality of research assistance.

Six students responded to an anonymous survey after spring 2020. In their positive feedback, students said that,

- "I was able to understand better how research projects are conducted."

- "It made me learn that there is much more quantitative methods than I originally thought."

- "I believe that even just being around others who were conducting research gave me a greater idea of how academic research is conducted and the work associated with it. Additionally, the quantitative/qualitative dichotomy was helpful."

- "It was super fun!"

Suggestions for improvement included the following:

---

4. We do not ask applicants about race, ethnicity, country of origin, or gender in the applications which makes this statement an estimate based on our own observations about who was part of the lab. We are also not currently asking about financial circumstances or whether a student is a first generation college student.

- "I think more joint events (of course, COVID makes things a little more difficult) where members and faculty discuss their research process and what undergrad researchers are doing. I believe hearing how others are conducting their research would have been helpful, even if the projects were quite different."

- "Face to face lab was certainly better. It seemed more connected and organized. I am not sure if this is unique to me, but it seemed that when things went remote, the whole process was a little deflated. Communication with my professor and other undergrad researcher all but ended when summer began."

- "I am not sure if this was my fault or not, but...the [lab] essentially ended when the school year did. I was told those involved in the project I was working on would have a meeting relatively quickly after the school year ended and I never received another communication. I, obviously, could have emailed and do regret I did not. Even still, it seemed strange to me that it did end in that way."

As the comments reflect, communication and community building suffered from the transition to being remote.

In fall 2020, in an effort to better promote diversity and inclusion, we recruited more broadly and asked if students had a work study award. As a result, 103 students applied. One faculty member narrowed down the top 40 candidates; another faculty member and two Ph.D. students helped choose the final acceptances. The main criteria for admittance was enthusiasm and how well the students' research interests fit with proposed projects. Twenty-three students were accepted including 16 women, 5 people of color, and 3 international students.[5] We accepted 20 students as "honorable mentions" and invited them to attend lab events.

We had 13 project proposals of which only 2 were denied because of concerns that they did not sufficiently promote "learning by doing". The accepted projects included 2 doctoral projects and topics covering COVID-19 in Bolivia, COVID-19 in Russia, diplomatic relations, European Union legislative activity, policy diffusion, statistical software in undergraduate research methods, climate change and indigenous communities, Qatar's immigration policy, misinformation in the United States, human rights, and media in the Middle East. The

---

5. We are very grateful to David Brown, Srinivas Parinandi, Andy Philips and Alex Siegel who contributed their own research funds to hire 7 students more than we otherwise could have.

research assignments included collecting news articles and primary and secondary sources, coding reports, and scraping websites.

Although we would have preferred to be in person, the remote format in fall 2020 appeared to work well. Students and faculty had regular communication, attended remote events, and many students returned to work with the lab in spring 2021 when the lab was still fully remote. Our events in fall 2020 included two sessions on academic and professional writing facilitated by Dr. Levente Szentkiralyi, a session on publishing in two departmental journals for undergraduate authors, and a session with Dr. Betsy Sinclair (Washington University St. Louis) about civic engagement. Attendance ranged from 2 to 15 students.

Students overwhelmingly reported good experiences in fall 2020 although their feedback was not anonymous suggesting there might be pressure to give positive responses. Sixteen of our 21 lab members responded to the end of semester check-in. Their favorite remote events were the two sessions on writing. Some students indicated, very understandably, that they were not interested in the remote events because of "Zoom fatigue". Nonetheless, 68 percent of those responding said they were definitely or somewhat interested in the events. One student wrote that "I really enjoyed the experiment. I feel the warmth of the professors and get along well with my team members. We meet every week, and I look forward to sharing something. That was the happiest thing during the epidemic." When asked if they learned more about social science research, 81 percent answered "definitely yes" and 19 percent answered "somewhat yes".[6]

In spring 2021, seventeen of our lab members continued working with the lab. Of those who left, three students had completed their work after 2 semesters with the lab and one student graduated. No one indicated that they left because of a bad experience. We admitted 5 new students and accepted 2 new research projects including ones addressing citizenship and civil war. As such, our projects spanned 5 regions of the world and included work

6. In future check-ins, we plan on asking questions about how well personal connections were fostered and whether we are effectively promoting diversity and inclusion.

on American politics, comparative politics, political theory, international relations, public policy, methodology, and pedagogy.

Although our experiences are early and necessarily based on limited observations, we think our lab has a good start in promoting diversity and inclusion. In spring 2021, we scheduled 9 events for student presentations. The first event was 3 women presenting their work updating a quantitative human rights dataset including analysis generated using R. Our second event included 2 women and 1 person of color presenting their data collection about Syrian migration policy shocks. Our third event had 3 women presenting who all emphasized the importance of including computer programming and coding skills in introductory political science methods courses. Given that our institution is predominantly white and that women are underrepresented in methodological fields, we find this tremendously encouraging.

Suggestions for Labs to Promote Diversity and Inclusion

Instructors should also "learn by doing": we must start taking practical steps to be more diverse and inclusive if that is indeed our goal. Our lab model can be adopted even with limited resources. We started with 1 faculty member recruiting a group of students and have used a limited budget to expand this to a lab-based model. Our main financial cost is paying students for their work. Where budgets are especially limited, employing work study students may make this more feasible. The administrative work includes recruiting students and faculty, making acceptance decisions, matching students and faculty, organizing events, and regularly checking-in with participants. We hope that this example provides a roadmap for others and advances the discussion about how to meet the urgent need for more diversity and inclusion on our campuses.

Without taking practical steps to promote diversity and inclusion, there is every reason to believe that labs will only replicate existing inequalities. We draw on the expertise of those who have long studied and written about diversity and inclusion. Based on our experiences

and advice we have received, we have several suggestions.

Recruit broadly. We strongly suggest recruiting broadly both for students and for faculty proposals. We do not require applicants to be political science majors, we hold events to recruit students, and we ask faculty to reach out to students both individually and through class announcements. We are grateful for advice received at the APSA teaching conference in fall 2020 to emphasize the opportunity to develop non-academic professional skills in order to get a more diverse set of applicants. Moving forward, we will ask if students are part of an alliance organization at our university which includes programs intended for underrepresented groups of students.[7]

Use Work Study. In recruiting students broadly, it is important to consider the role of work study positions. Consider reserving some positions in a lab for students who have received work study awards. These students have already completed a FAFSA form which has determined a financial need. Hiring work study students also allows for a cost effective way to include more students who would not otherwise have this opportunity. Many work study positions do not include educational opportunities that combine socialization and professionalization events and which prioritize diversity and inclusion. To include work study students, it is important to remember how and when these students are finding positions.

Make Applying Easier. Undergraduate research labs should make it easy for students to apply and should prioritize enthusiasm over previous experience. One of the disadvantages of initiatives like the Undergraduate Research Opportunity Program (UROP) is that it places the burden on students to seek out faculty. Existing research strongly suggests this will benefit already privileged students rather than drawing in underrepresented or first-generation college students who, for a variety of reasons, may be less likely to know about such programs and are less likely to approach faculty, especially at a large research university. We intentionally designed our lab to make it easier for students who are enthusiastic and eager for this kind of experience to apply even if they lack clear research interests or personal

---

7. We are very grateful to Dr. Celeste Montoya for making this suggestion.

connections with faculty. In recruiting, we suggest emphasizing that this opportunity does not require experience.

Recruit Diverse Faculty & Provide Mentor Training. It is important to get as diverse a group of faculty as possible and faculty with different specializations and areas of expertise. To this end, in fall 2021 we included a call for faculty research projects that address issues related to diversity and inclusion.[8] Additionally, faculty should be trained in mentoring practices that promote diversity and inclusion. Brown and Montoya (2020) write that, "Mentoring, however, does not shield these groups from inherent biases in these structures and can itself perpetuate oppression" and advocate for a "more intersectional and action-oriented model of mentorship that moves beyond an emphasis on survival and toward empowerment and transformation" (page 784). In fall 2021, we introduced a series of training sessions for faculty participating in the lab to give them concrete ways to be better mentors who more effectively promote diversity, equity, and inclusion. This is especially important because underrepresented faculty are often burdened by working as "universal donors of mentorship" who are disproportionately tasked with advising certain students (Brown and Montoya 2020; Jimenez et al. 2019). We want to expand knowledge about better mentoring.

Communicate Clearly. Cox (2019) explains that assignments need to be explicit about tasks in order to be effective. A lab is uniquely poised to provide support for clear faculty communication with students by encouraging and requiring regular check-ins and lab events. Communication is especially important if one is admitting students who are enthusiastic but lack experience. We should not assume students already understand the lingo and the often unspoken norms of our field.

Build Community. Allen-Ramdial and Campbell (2014) note that institutional culture may include shared values and beliefs that respect diversity, but this may not align well with the institutional climate which affects a student's sense of belonging. Social events and lab-specific training events have the potential to improve climate for historically underrep-

---

8. We are grateful to Dr. Celeste Montoya for making this suggestion.

resented students. This includes promoting students presenting and publishing. A lab can build community and mentor students making them aware of further opportunities outside of the classroom. The lab should be a stepping stone to future success.

Pursue Systematic Assessment. To date, our assessment is based largely on feedback from faculty and students in the first two semesters of our lab. This is insufficient for building a long-term program that effectively promotes diversity and inclusion. In fall 2021, our lab includes a research project with an undergraduate student research assistant working on developing more systematic assessment tools including better exit surveys and suggestions for a review by those who are experienced in diversity and inclusion issues.

The preliminary evidence suggests that our undergraduate research lab model can improve on previous efforts. We hope others will consider creating labs that prioritize diversity and inclusion so that initiatives to improve higher education do not perpetuate existing inequalities. Our students deserve no less.

Expansion of Studio Lab

We started in the political science department, expanded to the division of the social sciences, and then expanded to the College of Arts Sciences. This expansion has been possible because of internal university support and increased support for initiatives that prioritize experiential learning for undergraduate students and initiatives that prioritize DEI goals.

To date, all of the funds for Studio Lab have come from within the University of Colorado Boulder. In summer 2019, the initiative in the political science department was first funded by UROP team grant and UROP individual student awards. In spring 2020, the expansion from an individual faculty member effort to the department was then funded by a "learning by doing" initiative within the department. In fall 2021, the expansion to the division of social sciences was funded by a divisional dean's discretionary funds. We are tremendously

grateful to the former divisional dean of the social sciences, David Brown, for this financial support.

In fall 2022, because there was growing interest in the Studio Lab for Undergraduate Research, we used this divisional money and a remaining financial commitment from the political science department to expand to the College of Arts & Sciences. Other internal sources of support include funds from the International Affairs department and the Institute of Behavioral Science, both at the University of Colorado Boulder. The director of Studio Lab currently receives as summer "2/9ths" of their salary in return for running the lab. A major concern is institutionalizing Studio Lab to ensure its long-term survival. We currently only have guaranteed funding through the end of the 2023 academic year.

DEI Goals & Evaluating Whether We Are Meeting out DEI Goals

Studio Lab prioritizes diversity, equity, and inclusion in building an undergraduate research lab and fully supports anti-racist efforts including the statement on anti-racism made by the Department of Political Science at the University of Colorado Boulder.[9]

Our specific list of DEI related goals include:

- Broad recruitment for student and faculty applications

- Admitting a diverse group of students

- Admitting a diverse group of faculty

- Including a diverse array of research projects including a wide variety of topics, disciplines, methodological approaches, and DEI related research

- Promoting a positive climate in Studio Lab (a climate which is pro-DEI and anti-racist)

- Improved faculty-student connections

- Improved student retention

---

9. See: https://www.colorado.edu/polisci/political-science-department-statement-anti-racism

- Improved student performance

Table 1 provides these goals in a table which can be used as a template for commenting on currents efforts and ways to improve in these areas that might be useful for other programs. Tables 2a and 2b shows the same table with comments about Studio Lab at the University of Colorado Boulder. Our metrics for success include admitting and supporting a diverse group of faculty and students and whether the Studio Lab experience helps with students' connections, retention, and achievements after (and hopefully because of) their involvement with Studio Lab.

Sources of data for evaluating whether we are meeting our DEI goals include an evaluation of how broadly we are recruiting, how diverse our participating students are, how diverse our participating research mentors (faculty and Ph.D. students) are, how diverse the types of research represented are, exit surveys and focus groups with faculty, exit surveys and focus groups from students, and outside evaluators. This includes the discussion above about the experiences of Studio Lab students.

Looking Ahead

Institutionalized undergraduate research lab settings have the potential to diversify the kinds of students who are likely to work directly with faculty, Ph.D. students, and professional researchers at a research-oriented university. Such labs are not necessarily common at large research-oriented universities (Ishiyama 2019). This makes it all the more important for these kinds of universities to consider their adoption.

Currently the DEI focus for Studio Lab is getting diverse groups of students and research mentors involved. Longer term, there are reasons to think that this might improve the experiences of historically underrepresented students on campus. It will, however, be difficult to show a causal link between participating in Studio Lab and student retention and performance. One of the main reasons for this is the selection effect of the type of students

who apply and who are already likely to do better in college.

One area in which Studio Lab did not work well in the 2022-2023 academic year–which is still on-going at the time of writing–is the retention of first year undergraduate students. We had 11 student choose to leave Studio Lab mid-year for a variety of reasons. Eight of these 11 students were first-year undergraduates. This limited data suggests that sophomores and juniors may be better suited to participating in Studio Lab. It may be that the first year of college, particularly for some historically underrepresented groups, is not the best time to take on a research assistant position.

Finally, We would welcome suggestions about DEI goals that we have overlooked, strategies or approaches that would better enable us to reach these goals, and the best approach for evaluating whether our DEI goals are being met. We would further welcome suggestions about sources of funding including external grants that could support these efforts. There is currently a lot of institutional support for DEI efforts, but this momentum may not last. Our goal is to lay a firm foundation for Studio Lab to continue. In political science and many other disciplines, these kinds of opportunities have the potential to improves students' learning, experiences, and achievement.

Tables

	Comments: Current Efforts & Ways to Improve
Broad Recruitment for Student & Faculty Applications 1. Reaching out to existing camps groups that work with historically underrepresented groups of students 2. Advertising widely 3. Emphasizing enthusiasm over experience 4. Faculty encouraging students in their classes to apply	
Diverse Group of Students (especially historically underrepresented) 1. Racial Diversity 2. Ethnic diversity 3. Gender diversity 4. LGBTQ+ diversity 5. Other kinds of diversity	
Diverse Group of Faculty (especially historically underrepresented) 1. Racial Diversity 2. Ethnic diversity 3. Gender diversity 4. LGBTQ+ diversity 5. Other kinds of diversity *Be careful NOT to rely disproportionately on historically underrepresented faculty members who may already have a disproportionate service and/ or mentoring load.*	
Diverse Types of Research 1. Topics 2. Disciplines 3. Methods 4. DEI specific research	
Climate of Studio Lab 1. Attendance at events 2. Types of events 3. Types of faculty-student interactions 4. Retention within Studio Lab	
Improved Faculty-Student Connections 1. Self-reported connections from students 2. Self-reported connections from faculty	
Improved Student Retention at Institution 1. Institutional data if possible	
Improved Student Performance 1. Self-reported skills 2. Internships or jobs after Studio Lab experience	

Table 1: Template for DEI Goals & Metric for Evaluation

	Comments: Current Efforts & Ways to Improve
Broad Recruitment for Student & Faculty Applications 1. Reaching out to existing campus groups that work with historically underrepresented groups of students 2. Advertising widely 3. Emphasizing enthusiasm over experience 4. Emphasize more than academic training in recruitment 5. Faculty encouraging students in their classes to apply	At the University of Colorado Boulder, we advertise through the Leeds Alliance programs and the Miramontes Arts & Sciences Program (MASP) to advertise and recruit applications from historically underrepresented groups of students.
Diverse Group of Students (especially historically underrepresented) 1. Racial Diversity 2. Ethnic diversity 3. Gender diversity 4. LGBTQ+ diversity 5. Other kinds of diversity	Here, broad recruitment and application evaluation practices are key. Recruitment efforts are described above. Initially, the applications were largely or entirely vetted by Sarah Wilson Sokhey alone. We recruit a faculty committee of 3-4 members to evaluate applications with guidelines for reviewing applications that are meant to help promote DEI goals. 62 students as of January 2023 We think there are 43 women, 17 men, and 2 non-binary students. We estimate that there are 21 people of color among the students based on our own observation (not officially collected data).
Diverse Group of Research Mentors (especially historically underrepresented) 1. Racial Diversity 2. Ethnic diversity 3. Gender diversity 4. LGBTQ+ diversity 5. Other kinds of diversity *Be careful NOT to rely disproportionately on historically underrepresented faculty members who may already have a disproportionate service and/or mentoring load.*	We work to recruit broadly for applications from units and departments from across the College and Arts & Sciences. We recruit a faculty committee of 3-4 members to evaluate applications with guidelines for reviewing applications that are meant to help promote DEI goals. We do not currently pay faculty or otherwise compensate them for their participation in the program. We cover the cost of paying the undergraduate research assistants. We ask research mentors to attend 2-3 events each semester. 42 research mentors as of January 2023 We have 31 faculty, 7 full time researchers at the Institute of Behavioral Science, and 4 Ph.D. students. We estimate that there are 8 people of color among the research mentors (not officially collected data). We think there are 27 women and 15 men.

Table 2a: Studio Lab Progress on DEI Goals & Metric for Evaluation

Diverse Types of Research 1. Topics 2. Methods 3. Disciplines 4. DEI related research	We have 11 units in the College of Arts & Sciences represented. Methods used in the research projects proposed by faculty include qualitative and quantitative approaches. Some students are engaged in field research (interviewing community members) and transcription) while others are collecting data or coding sources. Twelve of our 41 projects address issues that are DEI related in that they are relevant to historically underrepresented groups.
Climate of Studio Lab 1. Attendance at events 2. Types of events 3. Types of faculty-student interactions	In fall 2022, we had about 50 students. Attendance was about 30 students our first welcome event and dropped to less than 10 students for many subsequent events. In spring 2023, we have 70 students. With about 20 students attending our first spring semester event. Research mentors occasionally join, but not often.
Improved Faculty-Student Connections 1. Self-reported connections from students 2. Self-reported connections from faculty	We have some exit interview data from students to speak to this. We need consistent exit interviews over time.
Improved Student Retention 1. University data if possible	Currently we have no data about student retention. In any case, it will be very hard to conclude that Studio Lab has a causal effect on retention. Students who are already more likely to do well are also probably more likely to apply to Studio Lab.
Improved Student Performance 1. Self-reported skills 2. Internships or jobs after Studio Lab experience	Currently we have limited data about skills and activities after participating in Studio Lab in part because the lab is still relatively new. We should be very careful to take into account selections effects. Students who might already ne higher achievers are more likely to have applied to Studio Lab. It would be hard to say that Studio Lab has a causal effect on student performance.

Table 2b: Studio Lab Progress on DEI Goals & Metric for Evaluation

References

Allen-Ramdial, Stacy-Ann A., and Andrew G. Campbell. 2014. Reimagining the pipeline: advancing stem diversity, persistence, and success. *BioScience* 64 (7): 612–618. ISSN: 7.

Bayer, Amanda, Syon P. Bhanot, Erin T. Bronchetti, and Stephen A. O'Connell. 2020. Diagnosing the learning environment for diverse students in introductory economics: an analysis of relevance, belonging, and growth mindsets. *AEA Papers and Proceedings* 110 (1): 294–298.

Becker, Megan. 2019. Importing the Laboratory Model to the Social Sciences: Prospects for Improving Mentoring of Undergraduate Researchers. *Journal of Political Science Education* 16, no. 2 (June): 212–224.

Bowman, Nicholas A. 2011. Promoting participation in a diverse democracy: a meta-analysis of college diversity experiences and civic engagement. *Review of Educational Research* 81 (1): 29–68.

Breuning, Marijke, Christina Fattore, Jennifer Ramos, and Jamie Scalera. 2021. The Great Equalizer? Gender, Parenting, and Scholarly Productivity During the Global Pandemic. *PS: Political Science & Politics* 54 (3): 427–431.

Brown, Nadia, and Celeste Montoya. 2020. Intersectional mentorship: a model for empowerment and transformation. *PS,* 784–787.

Cassese, Erin C., Angela L. Bos, and Monica C. Schneider. 2014. Whose American Government? A Quantitative Analysis of Gender and Authorship in American Politics Texts. *Journal of Political Science Education* 10 (3): 253–272.

Chakravartty, Paula, Rachel Kuo, Victoria Grubbs, and Charlton McIlwain. 2018. #CommunicationSoWhite. *Journal of Communication* 68 (2): 254–266.

Cox, Gloria C. 2019. A Special Section for Majors: Why the Answer May Not Be Undergraduate Research. *Journal of Political Science Education* 15, no. 3 (July): 387–391.

Dion, Michelle L., Jane Lawrence Sumner, and Sara McLaughlin Mitchell. 2018. Gendered Citation Patterns across Political Science and Social Science Methodology Fields. *Political Analysis* 26 (3): 312–327.

Djupe, Paul, Amy Erica Smith, and Anand Edward Sokhey. 2019. Explaining Gender in the Journals: How Submission Practices Affect Publication Patterns in Political Science. *PS: Political Science & Politics* 52 (1): 71–77.

———. Forthcoming. *The Knowledge Polity: Teaching and Research in the Social Sciences.* Oxford University Press.

Dupree, Cydney H., and C. Malik Boykin. 2021. Racial Inequality in Academia: Systemic Origins, Modern Challenges, and Policy Recommendations. *Policy Insights from the Behavioral and Brain Sciences* 8 (1): 11–18.

Garcia, Matthew Mendez, and Ange-Marie Hancock Alfaro. 2021. Where Do We Begin? Preliminary Thoughts on Racial and Ethnic Diversity Within Political Science. *PS: Political Science & Politics* 54 (1): 141–143.

Glazier, Rebecca A., and Warigia M. Bowman. 2019. Teaching Through Community-Based Research: Undergraduate and Graduate Collaboration on the 2016 Little Rock Congregations Study. *Journal of Political Science Education* 0, no. 0 (July): 1–19.

Gregerman, Sandra R., Jennifer S. Lerner, William von Hippel, John Jonides, and Biren A. Nagda. 1998. Undergraduate Student-Faculty Research Partnerships Affect Student Retention. *The Review of Higher Education* 22, no. 1 (September): 55–72.

Hathaway, Russel S, A Nagda, and Sandra R Gregerman. 2002. The Relationship of Undergraduate Research Participation to Graduate and Professional Education Pursuit: An Empirical Study. *Journal of College Student Development* 43 (5): 19.

Hesli, Vicki L., Jae Mook Lee, and Sara McLaughlin Mitchell. 2012. Predicting Rank Attainment in Political Science: What Else Besides Publications Affects Promotion? *PS: Political Science & Politics* 45 (03): 475–492.

Ishiyama, John. 2002. Does Early Participation in Undergraduate Research. *College Student Journal* 36 (3): 385.

———. 2019. What kinds of departments promote undergraduate research in political science? *Journal of Political Science education* 17 (3): 371–384.

Ishiyama, John, and Marijke Breuning. 2003. Does participation in undergraduate research affect political science students? *Politics & Policy* 31 (1): 163–180.

Jimenez, Miguel F., Theresa M. Laverty, Sara Bombaci, Kate Wilkins, Drew E. Bennett, and Liba Pejchat. 2019. Underrepresented faculty play a disproportionate role in advancing diversity and inclusion. *Nature Ecology & Evolution,* 1030–1033.

Lei, Simon A., and Ning-Kuang Chuang. 2009. Undergraduate Research Assistantship: A Comparison of Benefits and Costs from Faculty and Students' Perspectives. *Education* 130 (2): 232–240.

Mabrouk, Patricia Ann. 2009. Survey Study Investigating the Significance of Conference Participation to Undergraduate Research Students. *Journal of Chemical Education* 86, no. 11 (November): 1335.

Michelson, Melissa R., and Jessica L. Lavariega Monforti. 2021. Elusive Inclusion: Persistent Challenges Facing Women of Color in Political Science. *PS: Political Science & Politics* 54 (1): 152–157.

Nonnemacher, Jeffrey, and Sarah Wilson Sokhey. 2022. Learning by doing: using an undergraduate research lab to promote diversity and inclusion. *PS: Political Science & Politics* 55 (2): 413–418.

Russell, Susan H., Mary P. Hancock, and James McCullough. 2007. Benefits of Undergraduate Research Experiences. *Science* 316, no. 5824 (April): 548–549.

Samuels, David J, and Dawn Langan Teele. 2021. New Medium, Same Story? Gender Gaps in Book Publishing. *PS: Political Science & Politics,* 10.

Saraceno, Joseph. 2020. Disparities in a Flagship Political Science Journal? Analyzing Publication Patterns in the *Journal of Politics* , 1939–2019. *The Journal of Politics* 82 (4): e45–e55.

Shalaby, Marwa, Nermin Allam, and Gail J. Buttorff. 2021. Leveling the Field: Gender Inequity in Academia During COVID-19. *PS: Political Science & Politics,* 1–7.

Stover, William J. 1979. Learning Through Doing: "Undergraduate Political Science Education and Social Science Research". *Teaching Political Science; Washington, D.C., etc.* 7, no. 1 (October): 33–50.

Teele, Dawn Langan, and Kathleen Thelen. 2017. Gender in the Journals: Publication Patterns in Political Science. *PS: Political Science & Politics* 50 (02): 433–447.