

UC SANTA CRUZ STUDENTS' PARTICIPATION IN RESEARCH AND CREATIVE PROJECTS UNDER FACULTY SUPERVISION 2022 UC Undergraduate Experience Survey (UCUES)

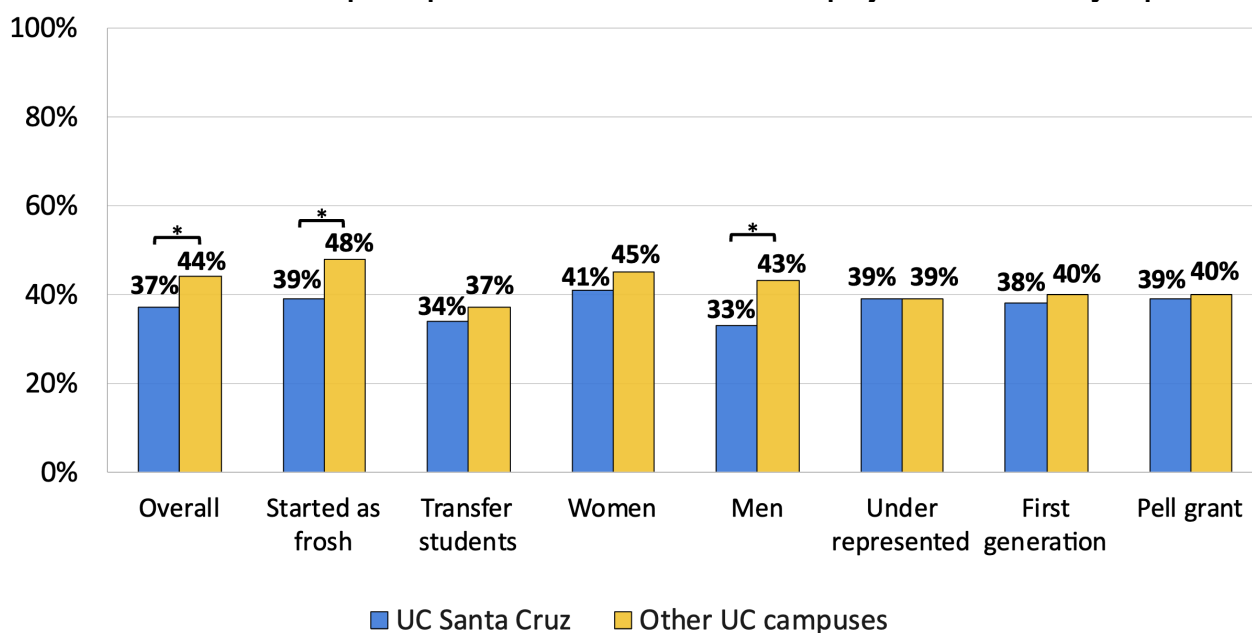
This report presents results from the University of California Undergraduate Experience Survey about participation in research or creative projects, based on the responses of **seniors who were about to graduate** when taking the survey, in spring or summer 2022. Results include comparisons between UC Santa Cruz and other UC campuses combined, as well as based on students' major and background characteristics.

*A **research project** refers to original projects in any discipline or field of study and may include critical analysis of primary or secondary sources, scientific investigations, and developing and testing systems/tools. A **creative project** refers to original projects in any discipline or field of study and may include design of various media forms, performance arts, marketing campaigns, and curating an exhibit.*

KEY FINDINGS

- Overall, **37% of UC Santa Cruz seniors** have engaged in research/creative projects under faculty supervision during their studies at UC Santa Cruz in one or more of the following ways:
 - Assisted faculty in conducting research
 - Assisted faculty with their creative project
 - Conducted own research or creative project outside of regular coursework **under** the guidance or supervision of a faculty member.
- Women (41%) were more likely than men (33%)** to participate in research/creative work.
- About 1 in 4 (23%) graduating seniors** at UC Santa Cruz conducted their own research or creative project outside of regular coursework under the guidance or supervision of a faculty member.
- Among UC Santa Cruz seniors who conducted their own research or creative projects with or without faculty supervision, 51% have presented their results, primarily on campus.

Figure 1. UC Santa Cruz students' participation in research and creative projects under faculty supervision, 2022



PARTICIPATION IN RESEARCH OR CREATIVE PROJECTS

Overall participation in research or creative projects

Overall, 37% of UC Santa Cruz seniors have engaged in research/creative projects under faculty supervision during their studies at UC Santa Cruz in one or more of the following ways:

- Assisted faculty in conducting research
- Assisted faculty with their creative project
- Conducted own research or creative project outside of regular coursework under the guidance or supervision of a faculty member.

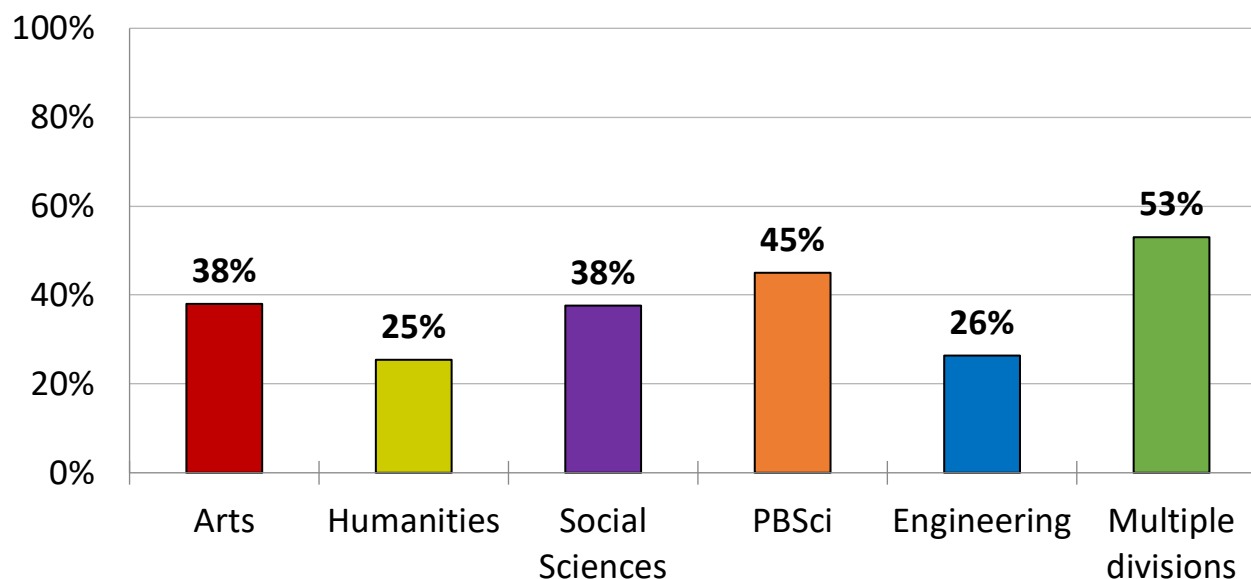
Participation by academic divisions at UC Santa Cruz

Students' participation in research or creative projects varied depending on their major. We conducted comparative analyses of differences across academic divisions. Rates of participation at UC Santa Cruz and other UC campuses or among subpopulations at UC Santa Cruz were compared using chi-squared tests.

Graduating seniors' **overall participation in research or creative projects under faculty supervision** was:

- Significantly higher in PBSci (45%) than in other divisions.
- Significantly higher in the Arts division (38%) and Social Sciences (38%) than in Engineering (26%).
- Significantly higher for students with majors in multiple divisions (53%) than students in Social Sciences, Humanities, or Engineering.

Figure 2. Overall participation in research and/or creative work under faculty supervision, by division at UC Santa Cruz, 2022



PARTICIPATION IN RESEARCH OR CREATIVE PROJECTS BY STUDENT CHARACTERISTICS

UC Santa Cruz compared with other UC campuses

Graduating seniors at UC Santa Cruz were less likely (37%) to have participated in research or creative work than students who started as frosh at other UC campuses (44%).

Students' rates of participation in research or creative work under faculty supervision include:

- Seniors who **started as frosh** at UC Santa Cruz (39%) were less likely than their peers at other UC campuses combined (48%) to participate in research or creative work.
- Seniors who started as **transfer students** at UC Santa Cruz (34%) were similarly likely as students at UC campuses (37%).
- Women at UC Santa Cruz (41%) were similarly likely as women at other UC campuses to have participated in research or creative work (45%).
- Men at UC Santa Cruz (33%) were less likely than men at other UC campuses (43%) to have participated in research or creative work.
- Rates of participation among UC Santa Cruz students who come from underrepresented communities – African American, Hispanic/Latinx/e, Native American, and Pacific Islander students, in this analysis – were the same as students at other UC campuses who come from underrepresented communities (both 39%).

Table 1. Graduating seniors' overall participation (%) in research and/or creative work under faculty supervision by student background

		Started as frosh	Transfer students	Women	Men	Under-represented	First generation	Pell grant	Overall
UC Santa Cruz	2022	39%	34%	41%	33%	39%	38%	39%	37%
	2020	44%	39%	46%	38%	42%	41%	42%	42%
Other UC campuses	2022	48%	37%	45%	43%	39%	40%	40%	44%
	2020	49%	39%	46%	44%	40%	39%	41%	46%

Note: Orange marks show when UC Santa Cruz is significantly lower than other UC campuses ($p < .05$).

Within UC Santa Cruz

- Transfer students** (34%) who are seniors were similarly likely to participate in research/creative work as were seniors who **started as frosh** (39%).
- Women** (41%) were more likely than **men** (33%) to participate in research/creative work.
- Students who come from **underrepresented communities** (39%) were similarly likely to participate in research/creative work as were other students (36%).
- First-generation students and Pell grant recipients** were as likely to have participated in research/creative projects as their peers.

Within each academic division at UC Santa Cruz

Within academic divisions at UC Santa Cruz, differences in research participation by gender included:

- Within the Social Sciences division, women (44%) were more likely to have participated in research or creative work than were men (27%).
- Within all other divisions, women and men were similarly likely to have participated in research or creative work.

Within divisions, differences based on other characteristics include:

- Among students with majors in multiple divisions, students who have a Pell grant (34%) were less likely than those who were not Pell grant recipients (69%) to have conducted research or creative work.

See Table 2.

Table 2. UC Santa Cruz graduating seniors' overall participation (%) in research and/or creative work under faculty supervision by student background, by academic division

UC Santa Cruz divisions by year		Frosh Admit	Transfer Admit	Women	Men	Under-represented	First Generation	Pell Grant	Overall division
Arts	2022	35%	41%	34%	37%	44%	44%	43%	38%
	2020	46%	38%	51%	32%	5%	52%	45%	43%
Humanities	2022	30%	21%	24%	25%	34%	26%	24%	25%
	2020	26%	38%	31%	32%	27%	33%	35%	32%
Social Sciences	2022	39%	35%	44%	27%	41%	39%	40%	38%
	2020	41%	36%	40%	36%	38%	36%	38%	39%
PBSci	2022	49%	36%	41%	46%	40%	40%	47%	45%
	2020	60%	57%	59%	59%	56%	50%	58%	59%
Engineering	2022	26%	27%	24%	27%	23%	30%	31%	26%
	2020	30%	23%	34%	26%	28%	26%	27%	28%
Multiple divisions	2022	57%	36%	55%	55%	46%	47%	34%	53%
	2020	50%	69%	58%	35%	46%	62%	50%	52%

SPECIFIC ACTIVITIES IN RESEARCH OR CREATIVE PROJECTS

Assisting faculty in conducting research

Across the UC system, relatively more students assist faculty in conducting research than assist with creative projects or conduct their own research or creative projects under faculty supervision.

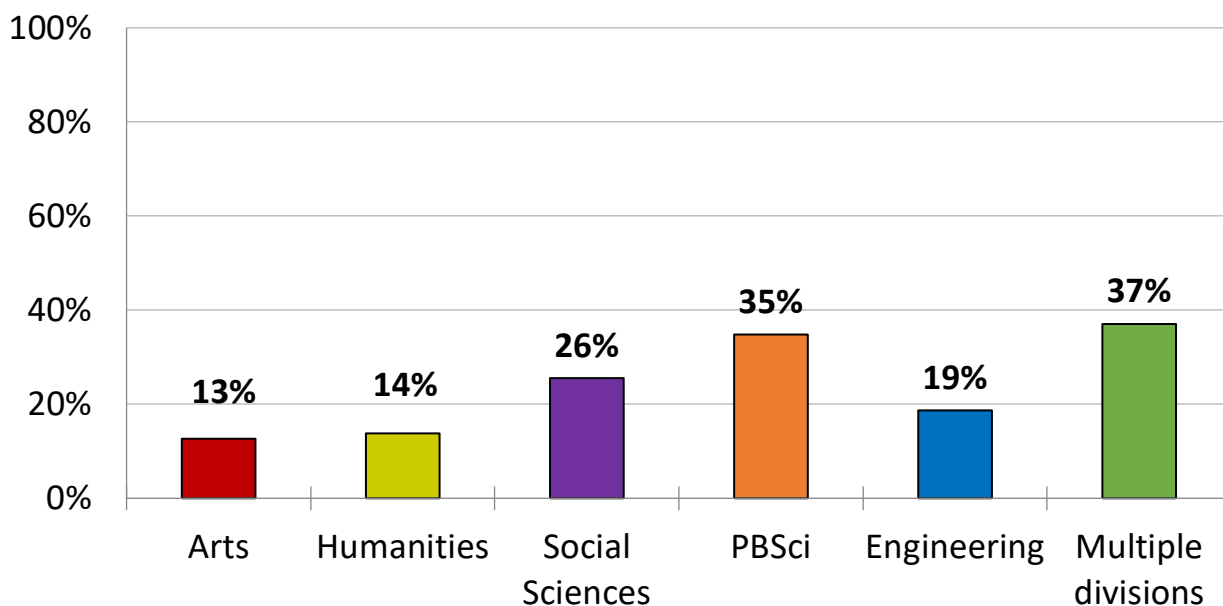
- UC Santa Cruz graduating seniors assist faculty in research at significantly lower rates (25%) than do seniors at other UC campuses (33%).

Rates of **assisting faculty in conducting research at UC Santa Cruz** were:

- Higher in PBSci (35%) than in all other divisions.
- Higher for students with majors in multiple divisions (37%) than in Engineering, Humanities, and Arts.
- Higher in Social Sciences (26%) than in Arts (13%).

See Figure 3.

Figure 3. Experience assisting faculty in research, by division at UC Santa Cruz, 2022



Assisting faculty with a creative project

UC Santa Cruz students (13%) and their UC peers (15%) had similar rates of assisting faculty with a creative project.

At UC Santa Cruz student rates of assisting faculty with a creative project were:

- Higher among students in the Arts division (23%) than among students in Social Sciences (14%), Engineering (13%), majors in multiple divisions (13%), PBSci (11%), or Humanities (5%).

Conducting own research or creative project under faculty supervision

About 1 in 4 graduating seniors at UC Santa Cruz (23%) and other UC campuses (26%) conducted their own research or creative project outside of regular coursework under the guidance or supervision of faculty.

At UC Santa Cruz, rates of conducting own research or creative project under the guidance or supervision of faculty were higher in PBSci (28%) and the Arts division (23%) than in Engineering (17%) or Humanities (14%). See Table 3.

Table 3. Types of participation in research and/or creative work under faculty supervision, by major (division)

		Arts Division (n=80)	Huma- nities (n=58)	Social Sciences (n=327)	PBSci (n=205)	Engi- neering (n=182)	Multiple divisions (n=54)	Overall at UC Santa Cruz (n=907)	Overall at other UC campuses (n=12305)
Overall participation	2022	38%	25%	38%	45%	26%	53%	37%	44%
	2020	43%	32%	39%	59%	28%	52%	42%	46%
Assisted in research	2022	13%	14%	26%	35%	19%	37%	25%	33%
	2020	7%	12%	28%	54%	23%	35%	31%	37%
Assisted with creative projects	2022	23%	5%	14%	11%	13%	13%	13%	15%
	2020	20%	8%	8%	11%	8%	17%	10%	11%
Conducted own under guidance or supervision	2022	23%	14%	22%	28%	17%	38%	23%	26%
	2020	34%	26%	22%	33%	14%	26%	25%	25%

Note: Orange marks show when UC Santa Cruz is significantly lower than other UC campuses ($p < .05$).

Conducting own research or creative project without faculty supervision

UC Santa Cruz students (30%) reported **significantly higher rates** of conducting their own research or creative project outside of regular coursework without the guidance or supervision of a faculty member than graduating seniors at other UC campuses (21%).

Graduating seniors' rates of conducting their **own research or creative project** without the guidance of faculty were significantly higher in the Arts division (53%) than in Engineering (36%), which was in turn significantly higher than in PBSci (20%). See Table 4.

Table 4. Research and/or creative work WITHOUT faculty supervision, by major (division)

		Arts Division (n=80)	Huma- nities (n=58)	Social Sciences (n=326)	PBSci (n=204)	Engi- neering (n=179)	Multiple divisions (n=54)	Overall at UC Santa Cruz (n=903)	Overall at other UC campuses (n=12230)
Conducted own WITHOUT supervision	2022	53%	40%	24%	20%	36%	34%	30%	21%
	2020	63%	40%	20%	21%	30%	31%	28%	20%

Note: Blue marks show when UC Santa Cruz is significantly higher than other UC campuses ($p < .05$).

RECEIVING COURSE CREDIT OR PAY WHEN ASSISTING FACULTY

Students reported whether or not they received credit or pay as a result of participation in faculty's projects. When assisting faculty with **research**, UC Santa Cruz students (54%) were less likely to receive course credit without pay than were students at other UC campuses (63%).

UC Santa Cruz students were similarly likely to receive course credit with pay, pay without course credit, or neither course credit nor pay, as students at other UC campuses. See Table 5.

Table 5. Occurrence of course credit or pay when students assisted faculty in conducting research

		UC Santa Cruz (n=220)	Other UC campuses (n=4015)
Course credit without pay	2022	54%	63%
	2020	60%	68%
Course credit with pay	2022	9%	10%
	2020	10%	6%
Pay without course credit	2022	29%	26%
	2020	21%	22%
Volunteer without course credit or pay	2022	39%	41%
	2020	47%	42%

Note: Blue marks show when UC Santa Cruz is significantly higher than other UC campuses ($p < .05$), and orange marks show when UC Santa Cruz is significantly lower ($p < .05$).

Table 6. Occurrence of course credit or pay when students assisted faculty with creative projects

		UC Santa Cruz (n=111)	Other UC campuses (n=1798)
Course credit without pay	2022	50%	52%
	2020	50%	58%
Course credit with pay	2022	7%	9%
	2020	9%	6%
Pay without course credit	2022	16%	15%
	2020	17%	12%
Volunteer without course credit or pay	2022	39%	40%
	2020	40%	40%

Note: Orange marks show when UC Santa Cruz is significantly lower than other UC campuses ($p < .05$).

PRESENTATION OF RESEARCH OR CREATIVE WORK

Students reported whether they presented their work if they had conducted their own research or creative project outside of their regular coursework (with or without faculty supervision).

UCUES question: "If you communicated or shared the results of your research or creative project, please indicate how you did this [select all that apply] Through presenting/ exhibiting/ performing it on campus" and/or [...] outside of campus, such as at a regional, national and/or international conference or competition".

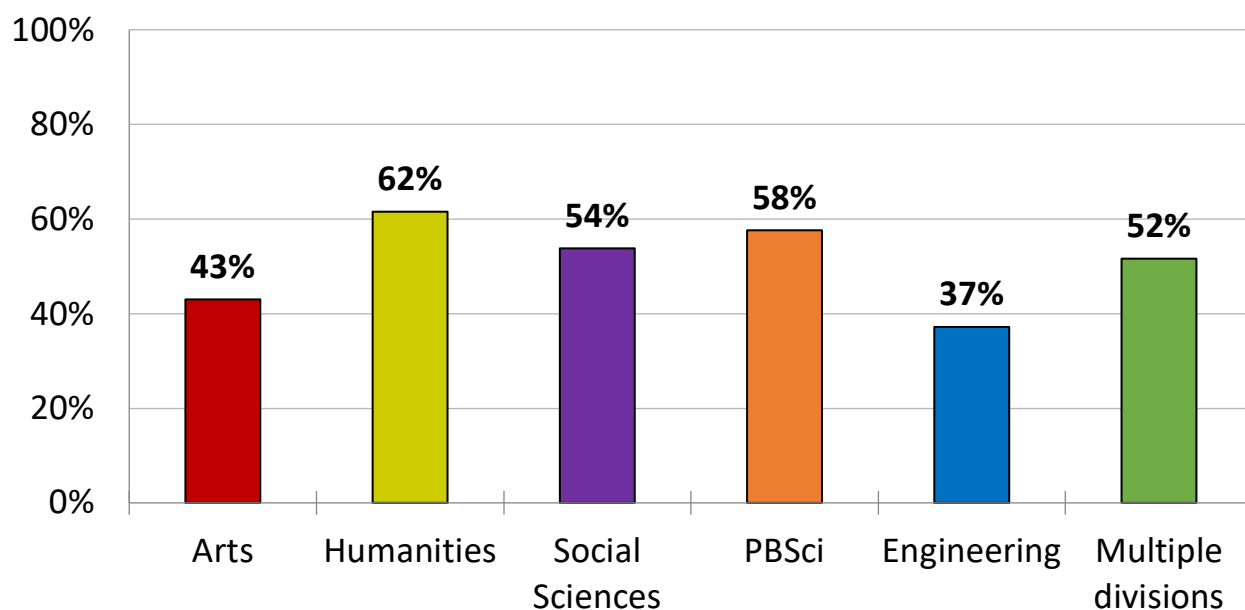
Presenting own results in any location (on-campus or off-campus)

Among UC Santa Cruz seniors who conducted their own research or creative projects with or without faculty supervision, **51%** have presented their results, primarily on campus.

Division-specific rates of students presenting their results (in any location, whether on or off campus) were:

- Lower among students in Engineering (37%) than among students in Humanities (62%), PBSci (58%), Social Sciences (54%), or majors in multiple divisions (52%).

Figure 4. Proportion of students who presented results of own research or creative project (either on or off campus) among those who engaged in such projects, 2022



Presenting own results on campus or off campus

Rates of presenting own results on campus were higher in PBSci (50%) than in Engineering (34%).

Rates of presenting results off campus were:

- Higher in PBSci (24%) than among students in Social Sciences (10%), Arts (9%), majors in multiple divisions (7%), or Engineering (5%). See Table 7.

Table 7. Proportion of students who presented own research or creative work on or off campus among those who engaged in such projects

		Arts Division (n=45)	Huma- nities (n=26)	Social Sciences (n=145)	PBSci (n=92)	Engine ering (n=78)	Multiple divisions (n=31)	Overall at UC Santa Cruz (n=418)	Overall at other UC campuses (n=5738)
Overall (combined)	2022	43%	62%	54%	58%	37%	52%	51%	54%
	2020	63%	56%	65%	71%	40%	78%	65%	63%
On campus	2022	38%	54%	47%	50%	34%	48%	44%	48%
	2020	54%	50%	57%	64%	33%	70%	55%	56%
Off campus	2022	9%	14%	10%	24%	5%	7%	12%	13%
	2020	12%	5%	12%	26%	9%	15%	15%	19%

Note: Orange marks show when UC Santa Cruz is significantly lower than other UC campuses ($p < .05$).

PUBLICATION OF RESEARCH OR CREATIVE WORK

Students reported whether they published their work if they had engaged in their own research or creative project (with or without faculty supervision).

Among students who conducted their own research or creative project, **30%** published their results in some way.

Graduating seniors at UC Santa Cruz vs other UC campuses:

- UC Santa Cruz students (9%) were less likely than students at other UC campuses to publish in a peer-reviewed journal (13%).

Among graduating seniors at UC Santa Cruz, differences by division included:

- For **overall publishing**: Arts Division students (40%) were more likely than Social Sciences students (25%).
- For publishing in a **peer-reviewed journal**: PBSci (18%) and Social Sciences (7%) students had the highest rates on campus.
- For publishing in a **campus or student journal**: Students from all divisions were similarly likely to publish in a campus or student journal.
- For publishing in an **electronic forum** or other public arena: Arts Division students (34%) and Humanities (23%) had the highest rates on campus; Arts students were more likely than Social Sciences or PBSci students.

Table 8. Proportion of students who published their research or creative work among those who engaged in such projects

		Arts Division (n=45)	Humanities (n=26)	Social Sciences (n=145)	PBSci (n=91)	Engineering (n=78)	Multiple divisions (n=31)	Overall at UC Santa Cruz (n=418)	Overall at other UC campuses (n=5738)
Overall (combined)	2022	40%	31%	25%	31%	29%	38%	30%	29%
	2020	50%	31%	34%	26%	38%	36%	35%	37%
In a peer-reviewed professional journal	2022	0%	0%	7%	18%	6%	16%	9%	13%
	2020	5%	3%	11%	11%	6%	0%	8%	12%
In a campus or student journal	2022	10%	12%	5%	8%	7%	6%	7%	7%
	2020	9%	16%	6%	4%	0%	12%	6%	9%
In an electronic forum or other public arena	2022	34%	23%	17%	11%	19%	18%	18%	14%
	2020	44%	19%	22%	15%	33%	24%	22%	23%

Note: Orange marks show when UC Santa Cruz is significantly lower than other UC campuses ($p < .05$).