Supplementary Information (SI) for Chemistry Education Research and Practice. This journal is © The Royal Society of Chemistry 2024

Sub-theme	Definition	Inclusion/ Exclusion	Example		
How you think					
General Interest in Science	Codes relating to participation in research due to an interest in science or research.		"I just. I really love science, and I always like was interested in research. I like in high school; I didn't really exactly know what it meant but there was always something I wanted to try."		
Disinterest	Codes relating to students expressing a lack of interest in research.		" plus, research. I was never interested in research like that, so I don't think that I would be interested in doing something like that."		
Outcome Driven Interest	Codes relating to participation in research due to interest in learning skills, solving problems, and other affective outcomes.		"I think it like shows you're interested. It shows you're dedicated, and you want to do research and like work in a lab. And I think it just shows important skills. So absolutely that's definitely a bigger, you know why I want to do it. In the first place."		
	Who yo	ou know			
Non-Structural Social Capital	Codes relating to social capital interactions outside of the institutional structure.	Includes codes that are not related to the institutional structure, excludes codes that are related to institutional structure.	"I had a friend. She's a computer science major, and she was talking about courses with research, and she told me a little bit about that."		
Structural Social Capital	Codes relating to social capital interactions relating to institutional structure; overall positive.	Includes codes that are related to the institutional structure, excludes all other social capital related codes.	"I was talking to my adviser, and I told like my academic advisorand I told her I was interested in doing research and grad school in the future. So, she encouraged me to look into research."		
Positive communication about research opportunities	Codes related to communication with students about	Includes codes that mention positive communication.	"I know some professors will offer, you know, 'I have a		

	potential research opportunities, generally positive and resulting in students having an increased understanding of available opportunities.	Excludes codes that specifically mention an individual or negative communication.	research lab', in class."		
Negative communication about research opportunities	Codes related to communication with students about potential research opportunities, generally negative and resulting in a barrier to student URE participation.	Includes codes that mention negative communication. Excludes codes that specifically mention an individual or positive communication.	"I've heard just from people in research that it can take up a lot of your time going back and forth from lab to class."		
Curricular and Programmatic Opportunities	Codes related to curricular and/or programmatic opportunities contributing to URE participation.	Includes codes related to curriculum or program connection to research excludes codes related to extracurricular activities.	"I'm in the Honors college at [university] so they give special research opportunities to our school students versus other students."		
Facing known research barriers	Codes related to student navigation of research barriers.		"Um! A little bit of it was schedule, and then I also felt like sometimes niche interests can kind of hinder you, because sometimes the ones you're interested in either don't have any availability or um.  They're similar to what you want to do. But they're not quite right, so it could be a little bit sure like tricky to figure out exactly what you're interested in."		
What you do Individual barriers to Codes relating to Includes codes relating "So mainly was I was					
doing science	Codes relating to barriers involving individual choice (e.g. social commitments)	Includes codes relating to barriers involving individual choice (e.g. social commitments), excludes codes relating to barriers outside of	"So mainly was I was involved in a lot of extracurricular activities so like organizations, and I was on boards. So,		

		the student control.	having to balance that with classes, and the research project was not beneficial for me."
Structural barriers to doing science	Codes relating to barriers involving institutional structure that are outside of the student control	Includes codes relating to institutional structure, excludes codes relating to barriers within student choice or institutional structure supports.	"Just being overwhelmed with, like my classes and classwork, like just not having enough time to do everything."
Structural supports to doing science	Codes relating to supports coming from institutional structure outside of the student control	Includes codes relating to institutional structural support, excludes codes relating to institutional structure barriers.	"And but what was really special with that like [professor] was so like lenient with me, he was so like forgiving and kind, and like was okay if I didn't show up was or was okay. If I didn't have my work done at certain times, because he knew, and that was kind of something that drove where I went."
	What yo	u dream	
Feelings surrounding research participation	Codes relating to explicit or implicit mentions of feelings derived from research participation, negative or positive.		"like mentally. I guess there can be some cost there, too. It's like if you're doing a lot of work in little time and being stressed, or just like having to be in an environment. That's not very. I don't know fun all the time."
Research has changed how I view my future goals	Codes relating to participation in research changing participant future goals.		"Yes, definitely. I came in as a health Science major and I switch to biochemistry. And I switch to I wanna go to grad school instead of going to Med school because I loved doing research a lot more than I liked the idea of med school."

Research is unrelated	Codes relating to	"I'm in chemistry. And
to career goals	participation in	so that kind. The
	research not	research that we go
	contributing or being	along with that is, it's
	unrelated to student's	probably fairly specific.
	career goals.	I would want to be
		more applied."
Future research-	Codes relating to	"Yeah, I definitely do
specific aspirations	students' desire to	think I will, I just. I
	participate in research	don't know if i'll be like
	in the future.	the kind of like head of
		the lab kind of thing
		like that kind of like
		further, or if it's like a
		researcher and some
		kind of company but
		definitely want to do it
		in the future."
Research as a	Codes relating to	"But also, I participated
steppingstone to the	student aspiration to	on Ph.D. Students
future	use research outcomes	research, my freshman
	to promote their future	year, and I was
	goals.	credited as an aid in his
		publication. So, I've
		been able to put that
		like on my Linkedin on
		job resumes, and it
		shows that I have a bit
		more ofof like an
		ability outside of just
		my degree, because it
		wasn't in my degree
		field. It was in chemical
		engineering, and I'm a
		geology student. So, it
		shows that I'm a little
		bit more extroverted
		than what paper would
		say."