Supplemental Material

CBE—Life Sciences Education

Saha *et al*.

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Examining how student identities interact with an immersive field ecology course and its implications for graduate school education.

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Note, Item 4: The main categories are presented in bold and sub-categories are italicized.

Item 1: Table 1: FIRED UP 2022 field program

Date	Location	Goals	Activities am	Activities pm	Special Evening Activities?
	WEEK 1	Arrivals, gear preparation, introductions, safety training	Morning	Afternoon	
17-Jul	Boulder	Arrive		Greetings	Dinner plan
18-Jul	Boulder	Acclimate, prepare	9am - greetings and gear checklists, 10am at REI	4pm Group introductions	Dinner plan with EBIO grads.
19-Jul	Boulder	Acclimate, prepare	gear and preparations	4pm code of conduct at MRS, building respectful community	Chataqua picnic dinner with faculty advisors & lab mates.
20-Jul	MRS	Move to MRS (10 students)	cabin move-in, tours of MRS	4pm Ring of Fire: Journals, intentions	7pm Diego Vázquez evening seminar (public).
21-Jul	MRS	NOLs Training (wilderness first-aid)	NOLs training	NOLs training	
22-Jul	MRS	NOLs Training (wilderness first-aid)	NOLs training	NOLs training	
23-Jul	MRS	Social	free time all day		
24-Jul	MRS	Social	free time	4pm Ring of Fire: Team Artwork (painting group murals without speaking)	
	WEEK 2	Biogeochemistry/Soil, Mammals, how to read Scientific papers, Science communication	Morning activity	Afternoon activities	
25-Jul	MRS	Observing the landscape at a big scale, basic soil & biogeochemistry	Field visit to Gordon Gulch: clear NvsS aspect of hydrology, soil, plants etc.	4pm Ring of Fire: pair for 10 stops along path to grad school	
26-Jul	MRS	How do you measure climate and fluxes?	Intro to LTER instrumentation & NWT Ridge	No meeting, rest and reflect!	7pm Evening seminar by Chris Ray on pikas
27-Jul	MRS	Alpine mammals and how to read a scientific paper	½ = Mammals, pika project ½ = read pika paper	No meeting, rest and reflect!	7pm Evening seminar by Tom Veblen (public)

28-Jul	MRS	Alpine mammals and how to read a scientific paper	½ = Mammals, pika project ½ = read pika paper	4pm Ring of Fire: Imposter Syndrome talk led by VM	
29-Jul	MRS	Large scale network science: NEON (NEON is a network of field research sites, designed by ecologists to provide open data for all)	NEON COMO (C1) site visit (~1.25 hrs.), followed by ~60 minutes of presentation / Q&A by Chau Tran	4pm Ring of Fire: Rose, Thorn, and Bud - what are we pleased/delighted about currently, what is a pain/pressure point, and what are we looking forward to	
30-Jul	MRS		free time all day		
31-Jul	MRS		free time	4pm Ring of Fire: Science Identity (as a growing seedling) - questions on second sheet	
	WEEK 3	Insects, Birds, Art, Science Identity science heroes, flame model	Morning	Afternoon	
1-Aug	MRS	MRS plant pollinator interactions sampling	Plant pollinator interaction observations in the field (MRS, Elk Meadows) afternoon insect identification and data entry. Readings for context Bascompte and Jordano 2007, Resasco et al. 2021	4pm Ring of Fire: "I wish that someone would have told me" - led to talk about process of applying to grad schools --> which led to potential RoF on mentorship guidelines	
2-Aug	MRS	Elk Meadow morning. Conference room afternoon	Plant-pollinator interactions in the field (Elk Meadows); Introduction to network analysis (computer lab)	4pm Ring of Fire social activity, snacks and drinks at Nederland Park	
3-Aug	MRS	Learn how to sketch and use watercolors, think about the importance of close observations	intro to sketching + watercolors, short hikes, importance of close observation	No meeting, rest and reflect!	7pm Evening Seminar - Keith Musselman - Ecosystem resilience in the face of climate change
4-Aug	MRS	Learn how to ID birds visually and through calls and songs, learn about common field	Bird ID, point counts, overview of Boulder Chickadee Study with some hiking to boxes	4pm Ring of Fire: Guest speaker on Science Communication	

		methods to collect bird presence data			
5-Aug	MRS	Conduct 5 morning point counts + learn about Indian Peaks Bird Count	Conduct point counts then learn about the Indian Peaks breeding bird survey - discuss ways that the data could be analyzed and then engage in some analyses	4pm Ring of Fire: Lab Guidelines and Mentorship Expectations with ST and JR	
6-Aug	MRS	7 other students arrive	free time all day	~3pm Ice cream social!	
7-Aug	MRS	7 other students arrive	free time	4pm Ring of Fire: "speed-friending" with prompts provided by VM like “what is something you find scary?”, “what is your favorite food?”	
	WEEK 4	- Plants, LTER, data management best practices - Full cohort bonds, Inclusivity Sci Com Goal setting	Morning	Afternoon	
8-Aug	MRS	Reading scientific papers / background on alpine tundra and subalpine tree ecology	Read a paper on alpine veg productivity / subalpine trees	4pm Ring of Fire: Importance of art in science through Haikus (or poetry) on topic of interest in science	
9-Aug	MRS	Plant measuring methods / repeatability, efficiency, accuracy	9 students to alpine veg sampling 9 students to subalpine tree sampling	4pm Ring of Fire: Data management	
10-Aug	MRS	Plant measuring methods / repeatability, efficiency, accuracy	flip groups from previous day: 9 students to alpine veg sampling 9 students to subalpine tree sampling	4pm Ring of Fire: Repeat of imposter syndrome talk with new students	7pm Evening Seminar: Seth Raynor, Museum Studies student in Erin Tripp's lab. Lichen!

11-Aug	MRS	Inclusivity; safe fieldwork	Inclusivity in EBIO science and fieldwork	4pm Ring of Fire: Volleyball at the MRS	
12-Aug	MRS	Pack up and return to Boulder	Pack and go home!		

Item 2: Table 2: FIRED UP Program 2023

Date	Location	Goals	Activities am	Activities pm	Special Evening Activities
6-Aug	Boulder - MRS	Move everyone to the MRS	Tour of MRS and safety briefings, move-in, 12pm group lunch, chill	Ring of Fire: Intentions and Origin stories where students share their expectations/intentions for the program	
7-Aug	MRS	NOLs (Wilderness first-aid) training	NOLs training	NOLs (Wilderness first-aid) training	
8-Aug	MRS	NOLs (Wilderness first-aid) training	NOLs training	NOLs (Wilderness first-aid) training	
9-Aug	MRS	Big picture biogeochem, aspect, soil	Gordon Gulch site visit to observe aspects, biogeochemistry and explore soils. The hike to the Gordon Gulch site is not higher elevation than the MRS and is about a mile, not too strenuous. There is an option to hike longer on this day for some who may choose that option.	Ring of Fire: fun times (Painting group murals without speaking)	Evening seminar 7pm: Dr. Christy McCain

10-Aug	MRS	NEON: (NEON is the National Ecological Observatory Network. Local Domain field manager, Chau Tran, will lead a presentation and a site visit.)	NEON talks 8am-9am	Ring of Fire: prep for grad life	
11-Aug	MRS	LTER visit Niwot Ridge Long-term Ecological Research program which also has a site located at Niwot Ridge above the MRS.	LTER We will drive as far as possible and hike the remainder. This is at the highest elevation (~10-11K feet). Students may choose to opt for a longer or shorter duration hike/visit.	Ring of Fire: Volleyball	
12-Aug	MRS	Social!	FREE TIME	Current EBIO grads lead a discussion related to diversity, equity and inclusion.	**5pm Social event, EBIO grad mixer**
13-Aug	MRS	Using R & datasets	Free time all morning, meeting at noon lead a session getting students familiar with R, a common coding platform	Ring of Fire: learning thru failure	**Evening seminar 5pm: Airy Gonzalez**
14-Aug	MRS	Birds, data, observing, sketching	Bird survey, analyze bird data	Observations, sketching, watercolor	
15-Aug	MRS	Pollinators/ networks	Elk Meadow pollinator surveys, then 12pm lunch with EBIO staff visitors at the Megaron	Networks, data analysis, insect pinning	
16-Aug	MRS	Plant productivity tundra	Tundra sampling with high elevation and lower elevation options	Ring of Fire: Lab guidelines, mentors, and teaching	Evening seminar 7pm: Dr. Toby Hammer
17-Aug	MRS	Concluding	Reflection	Last ring of fire meeting at the Megaron at 10am- reflecting on FIRED UP and outcomes	

Item 3: Interview protocols & questions

FIRED UP Interview Questions

Pre interview correspondence

Before the interviews, we gave students information about their interviewee rights. For example, we clarified that participation in these interviews was not compulsory and that students had the right to opt out of certain questions. Students could choose not to answer any individual question on the survey if they wish not to respond. Students were also informed that FIRED UP instructors and research mentors would not know who chose to participate and who did not. Only de-identified copies of the data were shared with the research team.

[1] Pre-FIRED UP Interviews Questions

- How did you get interested in ecology / evolutionary biology?
- What did you consider as important in choosing a graduate program? How did you choose this graduate program?
- How did you find out about FIRED Up?
- Are you excited about this field research program? Why?
- What, if anything, do you hope to gain from this field research program?
- What concerns, if any, do you have upon entering this field research program?
- What, if anything, do you want to contribute to the FIRED-Up program?
- Based on your communications and experiences with FIRED Up so far, what future experiences are you most excited about?

[2] **Mid-FIRED UP Interview Questions**

Week 2-3 (half hour interviews + observations) - ask students to bring field notes journal (ADD daily REFLECTIONS on field activities)

- How are you doing so far?
- What have you enjoyed?
- What are you looking forward to?
- Have you had any issues or challenges you would be willing to discuss?

- How connected do you feel to the other graduate students? Do you feel that these connections will be helpful during your work within the EBIO graduate program?
- What skills or knowledge have you gained during this experience?
- Do you feel these will be helpful in your work within the EBIO graduate program?
- Is there anything you've captured in your journal over the last two weeks that you'd like to share with me?
    - Look at the reflections you've written about the field activities. In these, you had a chance to reflect on how the field experiences impact your own learning. Can you tell me about what you have gained from the field experiences in FIRED UP?

[3] **Post FIRED UP Interview Questions**

- How was your experience in this field research program?
- What was the most valuable experience you gained? What was the least valuable experience?
- Who was most influential during your time at FIRED Up and how?
- Describe components of the program that increased your sense of belonging to this cohort. What about the… field / social / etc. components?
- How did the physical location (the MRS) impact your experience?
- How connected do you feel to the other graduate students?
    - Is that connection different from what you felt earlier?
- How connected do you feel to the faculty?
    - Do you feel these will be helpful in your work within the EBIO graduate program?
    - If your advisor was present/not present, would you have felt pressure to engage?
- How connected do you feel to the other researchers?
    - Do you feel these will be helpful in your work within the EBIO graduate program?
- What skills or knowledge have you gained during this experience, if any?
    - Describe the components of the program that were most helpful in developing this skills / knowledge.
    - Do you feel these will be helpful in your work within the EBIO graduate program?
- Is there anything that you captured in your field notes in the last four weeks that you'd like to share with me?
    - Look at the reflections you've written about the field activities. In these, you had a chance to reflect on how the field experiences impact your own learning. Can you tell me about what you have gained from the field experiences in FIRED UP?
- Are you excited about entering the graduate program?
- What are you hoping to gain from engaging in this graduate program?
- What concerns, if any, do you have about entering the graduate program?
- What suggestions do you have to improve this program for the next cohort of students?

Item 4: Codebook and Specific examples. Main codes in each category (pre-FIRED UP, mid- FIRED UP, post-FIRED UP) appear in bold and subcodes are italicized. For example, *academia and environmental justice* are sub-codes under **career goals**. The bold phrases in the example quotes are key in why those examples represent the specific codes.

Name	Description	Example Quotes
Pre-FIRED UP Codes		
Connections to Earth (aesthetics, attachments)	Anything that pertains to beauty.	I've always loved bugs, just because they're, **they're neat, and they're pretty,** they do a lot of cool things, especially for a kid to get interested in.
Affective aspect	The affective domain includes feelings, emotions, attitudes, motivations, and values. In the context of FIRED UP, refers to feelings that participants mention/describe during the interview.	I'm looking forward to learning the research station schedule. I'm a **little worried,** obviously, about I mean, it's [like] a long time to be up there without like, knowing anyone super well, or having not my telephone service or whatever.
Career goals	Career goals describe when participants discuss why or how they chose EBIO, what kind of experiences enabled them to pick this program, and what they hope to achieve for their career related to participating in this program. Typical career aspirations include those around environmental advocacy, interest in a specific ecology or evolutionary biology field, or personal agency (learning and identity).	To do research, for knowledge's sake, rather than a short-term goal for humanity, I think that it's more important for me.

Academia	Interest in academic positions, research, gaining knowledge as a profession/vocation.	I have an idea o**f [like] terminology how to Google to [like] figure out methods and Google Scholar is like, you never know, where my research is going to be, like, I don't have any set in stone. Like, I don't have anything really in terms of like, I mean, I have an idea of what I'm gonna do. But like, it could evolve, it probably will evolve.** I mean, it looks like this now, but in the future, it may, like, maybe I end up studying bio accumulation with mercury and throughout an ecosystem, and then suddenly, as a biochemist, it would be really nice to have some sort of, like, understanding of like, broader methods, you know.
Environmental Justice	Interest in creating a sustainable world and addressing environmental issues as a profession/vocation.	I also think like, if I am to stay in academia, I would **want to find a way to have [like] a part of my job** that's more in [like] a **community engagement or [like] more [sort] of applied restoration…** It's like working with some sort of like, both **human and environmental communities** and [wherever, like], wherever I'm living or something like that. I think I'd be a little bit more upset if I like strictly stayed in academics
Constraints	Constraints, in the context of pre-interviews, refer to anticipated challenges or difficulties. For example, for some, the food, weather and health situations were anticipated challenges.	I have some **negatives experience** like concerning my documentation from moving on, but that has nothing to do with FIRED UP. It's just bureaucracy at its best.
Identity	Any aspect that adds value to participants' experiences in how they view the world around or that which students find personally meaningful and valuable that allows them to express affiliation with a group or identity.	want to do this, but I need clarity of what I'm going to do so definitely, I believe this FIRED UP program will give me the clarity of what I'm going to do ..give me the skills necessary for, [you know], as an effective researcher…. as an independent researcher, so, so those are the things I thought came through the program.
Science identity	How an individual seeks to be and views them self as a scientist	..to care for the environment and for nature has been a **huge part of my identity** since I was really little.
Social identity	How an individual seeks to interact with the people/groups around them and expresses affiliation with those groups/identities.	My initial interest in sciences, being able to inform communities, and informed legislation. But on top of that, I came to love toxicology and biology and chemistry, and being able to be a part of that scientific community to move things forward, and just nerding out on biochemical mechanisms.
Interdisciplinarity	Interdisciplinarity can be defined as relating to multiple branches of knowledge.	There are a lot of **people in the department that I'm interested in learning from,** who have really fascinating science work, but also either **like existing in other disciplines or like existing in a more human sphere of things or like within the context of the community.**

Interest	the state of wanting to know or learn about a subject area.	I wanted to study biology. And during the undergraduate degree, I started having a growing interest in like natural sciences
Developing Individual Interest	Denotes an agentic control by the individual to learn or grow their interest in a particular subject area.	I wasn't a great student in high school. And I took an environmental science class, so maybe that's the root of everything.
Pursued opportunities	Denotes an agentic control by the individual to learn or grow their interest in a particular subject area by pursuing opportunities that allow those interests to grow further.	I have worked in the past and like social behavior and community ecology, and I really love that **but was also important to me to find a lab that was like, interested in a mix of more sort of like, theoretical questions and more sort of like applied and like world relevant things**
Experiences Triggered Interest	Interest in a particular subject area/topic that grew/developed through a particular interaction either through coursework, an extra-curricular experience or personal interaction with a teacher/mentor.	I worked in a bird Lab, which was studying the migration patterns of red knots. And that led me go to Seabrook islands in South Carolina for the data collection part of it and what's better, like, I could just do work, like walking the beach looking at birds. So yeah, then I found, that's where my interests lie, basically,
Course	Interest developed through a specific course in school or in an undergraduate classroom.	I had **a course with a professor** who I really liked. And he taught the course material well. And up until then, I kind of didn't know what I wanted to do. And then I was like, wow, I really love this. So set me on my path from there.
Extra-curricular experience	Refers to field work, conservation experience that enables the development of interest.	I didn't like the culture of the office; outreach, education. And like ACA accredited, zoos and aquariums is not a sustainable job. And neither was wildlife rehabilitation. And it was very government heavy and, and stuff like that. And a lot of it was very technical work. Whereas, like, **the undergraduate research, like I was always learning, and I was always interacting, and like, it felt like every area of my skill set could grow and was growing.**
Personal Interaction	Interest developed through interaction with a course instructor or a subject expert.	But then when I got into the classroom, and I realized that like, **my professors were actual people who like, studied these things for a living and who like went outside to do their work and like looked at organisms and handled birds and like, asked questions** about the Environment and Conservation and stuff all day. It was like, like, this is it.
Sustained interest	Refers to interest that has continued to grow through time and is persistent.	I got interested, if these organisms, could interact with the environment and interact with the other organisms present in the environment…. then human being could depend on…. on this would be great now, I call them great, you know, **great organisms, then there's something spectacular**

		about them, they can find out, you know, and so that was how the interest started.
Mentor	Descriptions of the influence or role of prior mentors.	So, I had a lot of support throughout this **from my undergrad professors, who are like the most fantastic mentors and people,** and I'm very grateful to them.
Place	Connections to place, geography, mountains.	I **love Boulder** and it's a great area. For me personally, like a runner skier or hiker, it's a great spot. So, I know, I can thrive here, on a personal level, I knew that my work life would be progressive and good.
Relatability & Community	Community refers to the sense of belonging that FIRED UP students hope to find in their cohort.	I believe, you should have a really **good working relationship and have a great supporting community.** And so, when I was looking into grad programs, that was a major consideration where I was really thinking, who is going to really fit well with the mentoring style that I know I need.
Self-efficacy	Refers to an individual's belief in his or her capacity to execute behaviors necessary to produce specific performance attainments	I feel more prepared to initiate the fall semester.
Negative SE	People with negative self-efficacy tend to have low belief in their capacity towards success.	I j**ust kept messing up repeatedly**, repeatedly in front of my lab professor and is the kind of thing where it just like, compounded where I would mess up one lab and then the next week, I'd be nervous inside mess up the next one.
Positive SE	People with positive self-efficacy tend to have positive belief in their capacity towards success.	I guess when I started looking at collections, **I never knew that this is a thing you can do in your life. And then it's something that you read in novels done by people in the 18th and 19th century, mostly white folks.** And it's like, how are we different from you? But **now you realize that you can do it**

Skills	The skills students expect to gain during FIRED UP.	I think this would work for me well, and like, having the ability to like, **learn a bunch of different methodologies** and things beforehand, and like, learn enough wilderness safety, like, just as an example for like what we're doing with the NOLs training. Like, that's, I think, so imperative for PhD students who could be leading, you know, undergrads or field labs, or like field techs and stuff into the field.
Communication	Skills such as communicating with or connecting with mentors, peers, or others affiliated with grad school.	I'm going to become a better researcher, you know, because **I believe there is no research without communication, you have to communicate, there must be a medium through which a researcher communicates** to his to his audience that, oh, this is what I'm doing. And this is going to affect society. So, participating in this program, you know, is going to give me this, this, should I say, this competence, this competence as a researcher to for a better communication, and is, for me, it's most excited for me, because it's going to make me to become a better researcher.
Science	Skills such as critical thinking, problem solving etc. that students are keen to develop as they start seeing themselves as a scientist.	And I think this would work for me well, and like, **having the ability to like, learn a bunch of different methodologies** and things beforehand,
Social Skills- Inclusivity	Skills such as intentionality and inclusivity that enable community building.	I am really like, I'm excited about this program and about the ad. I know, like, part of the goal is sort of like student retention and like making people feel comfortable. And those are pretty important goals to me. So hopefully, **I can contribute something.**
Mid- FIRED UP Codes		
Transformative Challenges	Challenges faced by participants during FIRED UP either enabled them to develop community connections (e.g., with peers or FIRED UP leaders) or detracted from community building.	I've noticed this with a few other people, some of us who are trying to finish up like our master's stuff, there's not a lot of, there's a few hours scheduled downtime, but because of this, I feel like this is an intense program. I'm too tired at night to finish any of it. And I don't want to be left out from the cohort activities. Because everybody hangs out after dinner. And so, I haven't, I should probably be a little more disciplined with my free time. But I'm just exhausted mentally, from the day and physically.
Constraints	General limitations that FIRED UP participants experienced that enabled them to bond or detracted from bonding.	I was hearing everyone .... I don't know who specifically talked about the problems she was facing. And so, I was looking at this kind of stuff earlier in the day, and I thought it would be helpful advice. I told the whole thing international students about the Chase Bank thing and stuff like that.

Health Issues	Issues around physical health during the program or access to support for getting aspects related to health set up prior to starting grad school.	I [sort of] took a gap year, but at the same time, I was doing some internship, but not [serious] academic work. And then I went back to Malaysia, and I fell sick. So yeah, I **had chronic sinus infection for six months was already doing anything.** And so, I felt really bad. I felt that I wasn't productive enough in my life. And that, I don't know if I'm ready to do grad school, or if I can come back to the scientific community to do science.
Imposter Syndrome	Shared concerns about navigating graduate school while questioning belonging, feeling alienated, or doubting self-worth in the grad school context.	some people who are like really, in the works of writing paper, like have a master's, and have a lot more work done than I do. And I get that. And I know that it shouldn't intimidate me or make me feel like I'm not doing enough. But generally, **I think something I always have a hard time with or did in undergrad that like has been hard for me to unlearn.**
Vulnerability	Expressing the personalities/ideas that the participants felt less confident about or that they felt revealed aspects of themselves that left them emotionally exposed.	it helps **with insecurity without any problem**, but that's just me. I hope their support system for me is like friends. And I think they will be. I hope they will be I feel like when I meet friends, I [like] tend to hang on to them tightly.
Core Values	Principles or beliefs that determined how participants interacted during the program. These were further categorized depending on what aspects influenced the interactions	I think all of us are very happy to have found people who dig biology or life in general and outdoor scene.
Accepting	Being open to respecting others' thoughts and ideas.	And I feel happy to feel like I know them and to get the sense that they want to talk to me, respect my opinion, and make me laugh and smile.
Connection to nature	Connecting over beauty of the landscape, or the mountains, connections to places.	It's beautiful. I'm just looking forward to also doing field work up here.
Affect	emotions around how the students feel such as being authentic and their true self	I mean, if you'd like to be in an ecology program, you have to be kind of a certain type of person, like outdoorsy, so I feel like just as it has been with this group here, we're gonna **have a lot of shared interests.**
Skills	Skills that participants identified as developing during FIRED UP	It's also funny to think of everyone as scientists and potential collaborators, just because we've been so goofy the last few days, but that's what it is, too. They're potential collaborators. I don't know. It makes science seem more human,

Communication	Learning about how to communicate clearly and effectively. This arises especially regarding descriptions of communication interactions with peers, leaders, and others involved with FIRED UP	**I've learned so much from the people in my cohort.** I've learned stuff from the professors and people too, but definitely the people in my cohort when you're just walking around, and someone's like, oh, like, let's go look at Pine drops. They're this super unique plant that never comes like I know what a pine drop was before this, or just the infinite knowledge of everything that's natural world. And everybody's so humble and excited. And it's great. It's just amazing.
Interdisciplinarity	Learning skills around collaboration, seeing value in learning about different subject areas, and using knowledge/skill from different disciplines to accomplish scientific goals.	I have got to know the sort of dynamics of the forest here, the different forest types, the different plants, the different plant species we have here, which is very different from me. And the fungi. I've been [like] collecting them trying to identify don't find. So that's part of it, but also getting to truly realize that I mean, I am in an ecology and evolutionary biology program. I'm going to have to do **ecological stuff, bio statistical analysis**
Positive SE	People with positive self-efficacy tend to have a positive sense of being able to succeed in accomplishing specific tasks (mostly related to graduate school).	R is very valuable. And I feel like a lot of people start grad school with our experience. And [**so] I already have it, but if people don't have it, I feel like it needs to be built in here.**
Reflections	Reflecting on past experiences with regard to skill development and questioning their effectiveness in a positive way that enables students to identify whether there is a better, or more efficient, way of doing it in the future.	who are going straight from undergrad to grad school needs some of the topics that we are covering. But **I don't feel like it's been necessarily helpful for me at all.**
Science Skills	Learning skills such as problem solving, collecting data through different methodologies, or performing common scientific tasks. Also coded when students express that they are keen to develop specific skills as they start seeing themselves as a scientist.	that's kind of terms of hard skills. I feel like I've just become, b**ecause of the people around me, better than a naturalist, because of the professors around me better, or at least understanding methodologies for science better, and maybe understanding the life of a grad student**. I don't know if that's a skill or not.
Social Skills: Inclusivity	Skills such as intentionality and inclusivity that enable community building and inclusion of others.	I used **to be less social and not as good at making friends. I think people always see me as a very smiley person. So, they assume that I make friends very easily**. Or I have a lot of friends.
Thinking critically	Learning how to make clear, reasoned judgements based on interpreting, understanding, applying and synthesizing evidence gathered from observation, reading and experimentation.	I feel like I've just become, because of the people around me, better more than a naturalist, because of the professors around me better, or at least understanding methodologies for science better, and maybe understanding the life of a grad student.

Post FIRED UP Codes		
Belonging	Belonging refers to the extent to which one feels cared about, accepted, respected, valued by, and/or important to the FIRED-UP program and/or EBIO more broadly.	I thought that was much more valuable. I felt like I was able to participate and get something out of it. And sometimes I wonder if maybe also the fact that we were a **very small group** was helpful to getting more out of it like that kind of **one on one** with a grad student was [really] nice.
Modelling mentorship	Affinity shown by the program leaders to exhibit care and value to the participants of the FIRED-UP program.	**She [mentor 4] and one of the other grad students came and showed up to help, which was amazing**. Because of the way that like everything was situated and I had clearly discussed my disability with my advisor, I didn't feel comfortable doing what I should have done, which was tell them [hey] **I'm not able bodied.**
I*nformal Mentorship*	Support provided by various faculty to the participants in the form of advice or handling logistics around academics and addressing their concerns. (Note - Code this when there is any mentorship occurring from someone who is NOT a formal mentor and/or mentorship from a formal mentor that is NOT related to the central grad responsibilities (dissertation work, presenting, going to conferences, writing, grants).	I think that also is a good value of fired up was that gave us an opportunity to bond with our program director, whereas I don't think that normally you really got that opportunity.
Relatability	Connections that participants felt with various Experts/scientists they met during FIRED UP.	But then that also kind of was the case with like, [Mentor1] as well. I guess a little less with [Mentor 2 and 3] But I think they are they know who I am That's a little different than it would be normally for our first year **coming in and knowing professors and feeling a little bit more comfortable with them**
Approachability	Can be cross-linked with informal mentorship but refers to the ease of discussing their concerns with various mentors/experts. Probably facilitated by the informal nature of seeing them in non-academic settings.	I get more of [like a] **collaborative feeling more so than a mentor feeling**. Which helped me not feel very pressured. I feel like if my relationship was different with him, I would have felt pressure to do things, but it is not. So I did that. Okay. Good to hear. Yeah. And I haven't seen [Mentor 2] very much. But I feel like I could talk to them very effectively. I've already asked [Mentor 5] to be on my committee, and she accepted, which is a very big positive.
Formal mentorship	Support provided by a students' designated faculty mentor that aligns with the support expected by the graduate program (help with dissertation design, data collection, writing, attending conferences, presenting, etc	So, the people that were in charge did a very good job. And I feel like what they intended to get across came across effectively. Yeah. Especially in terms of how helpful they were, like the capacity for which they wanted to help us.

Flexibility	The structure of the FIRED-UP program had a balance of structured activities such as field work, talks etc., and unstructured free time and options for how to participate. Also coded when the program was adapted to accommodate student needs.	I did feel **like the structure activities were useful and important in achieving the things that they were designed to achieve. Not just from the like, the social aspect, but like, the structure of going looking for pica was super fun, because I think it was, it was strenuous m**ildly for everyone and but also inclusive for everyone, like everyone was able to do it that was there.
Challenging Aspects	Challenges faced by participants through various stages of the FIRED-UP program.	it's a little hard for me to say since I wasn't there for a good portion of it. I think overall, it was a **little challenging for me physically.**
Accessibility& Isolation	Includes access to internet, phone networks, logistics around housing in Boulder, SSN etc.; Feeling cut off from the city further restricting some participants' experiences.	because I, as an international student, **I have a lot of things to solve.** And from there, without phone, signal and internet, only in the shared spaces. And just a few times to, to use it. So, it was kind of tough...And so this, despite stressing me out a little bit and prevented me from being 100% and joining the program.
Burn-out	Draining social batteries, overload by repetitive nature of some activities (such as numerous Ring of Fires, discussions around similar topics) being counterproductive.	I think it was a lot, **it was a long program.** It was a lot of time to not necessarily have that much to do that felt like, super productive. Like, I love learning about, like, the natural history of the area. And that felt cool. But I don't always feel like that was what we were doing every day.
Discomfort	Refers to various concerns in participants ranging from peer-pressure to participate in various activities	I would say the way that the fieldwork mornings were organized. That way, I feel like maybe it would have been done better. It doesn't. I mean, like, it was good for me to know. And good, right, understand and like helped me like, you know, gain, like a breadth of knowledge in a field that like, **I might not necessarily have dwelled into, but I felt like I had this obligation to stay behind when people weren't walking as fast**
Food	Food was a cause of concern for several people.	I can't be like that for a long period of time. The food situation was not ideal, the bathroom situation was not ideal. It was it was not ideal
Inclusivity	Issues around feeling excluded or feeling left out- either due to abilities, personalities or locations of the cabins.	I think it was really a good opportunity to learn things about **challenges I was gonna face with my disability** and talk with people like now especially about what we could do,
Building Connections	Opportunities to bond/build community with other faculty or peers through various structured and/or unstructured activities occurring during FIRED UP.	I like to recharge by playing games and doing the recess. So, it's fun to go play games with people, play Jenga ping pong or go sit by the creek. That kind of stuff. That was probably where I found the most, like, **one on one conversations that were meaningful.** Got past surface level conversation.

Sense of community	Feeling connections with other members of the cohort due to various aspects of interactions at the MRS such as being accepting, valuing the aesthetics of the MRS, opportunities to collaborate, seeing value of building a social life and being vulnerable to each other.	feel more connected than I thought I would. I think what's cool is like, I haven't been spending too much time worrying that like, they secretly hate me. I think I knew that I would feel bonded to them. But I also thought that I would come back and be like they secretly hate me. like, that hasn't been a focus of my, of my brainpower this past week, which is great. I think they're great people. I think they're funny and smart. And like, have interesting things to say. And they like to spend time together.
Accepting	Everyone being respectful and kind towards each other, establishing boundaries.	think it does so much for a group to just have someone that like, brings people in and that way and that just like make sure that everyone has someone to talk to.
Connections to Place/Aesthetic	Refers to different aspects around the place- aesthetics of the MRS, connections to ecology, nature and interests which contributed to community building.	There are good aspects, like I told you, like being together with people. Be there like **in the native nature**, you have an immersive experience.
Collaborative Opportunities	Identifying opportunities to work with others through structured activities or time spent in the field.	it brings a new dimension to you, to your proposal, because not only do you already have everything, but you're also **collaborating with other institutions, or organizations**
Social Life	Building sense of community through different aspects of social life- and shared interests.	The unstructured time was like the best forgetting hanging out with other people.
Vulnerability	Being open to expressing the personalities/ideas that the participants felt less confident about.	They talked about imposter syndrome twice. I was only there for the first one. And I think those talks are super valuable. **Because it's important to hear that everyone feels this way.** But it's also hard to like, be like, everyone feels that way. So, it's fine.

Sense of exclusion	Feeling excluded or denied access or an opportunity to build connections or form community within the context of FIRED UP. (Notes: Origin of exclusion may be complex but are in part due to FIRED UP)	Then there was me and my very irrational, like, I want to go home, I'm crying, **I'm not doing well, like I'm panicking, because like, I don't know what's going on. And, and the way that they reacted, kind of like helped establish what I had said earlier that like, grad school is going to be a thing that I do on my own. And the support that I got, like, I need, I'm going to have to find somewhere else, because the people from fired up are not like they are not going to be able to fulfill not maybe because they don't want to, or maybe because they can't fulfill the needs that I have,** so that I can be okay. ..... that did help establish, I'm going to do this on my own.
Lack of connection	Feeling a lack of meaningful bonding because of circumstances occurring during FIRED UP. (Notes: Origins of lack of bonding may be complex and may or may not be attributed to FIRED UP)	it **takes time for you to know people and connect with them**. So, I really have connections, and I really feel connected with people. Everyone here is so polite and so kind to each other. I don't have a problem with anyone. It's only like a personality thing that you feel more connected or less I connected with people, but I don't have a problem.
Skills	Aspects identified by participants as skills developed during FIRED UP	
Accountability	Being accountable to oneself around professional goals (e.g., keeping a calendar and adhering to one's plan, accomplishing small tasks related to a large goal).	I think like **research aside**, I mean, I think, for me, like, because of my undergrad background, and because of why I picked that undergrad, like, I do my best work when I, like, feel comfortable. And I feel like I know faculty well.
Being a scientist	Critical thinking, problem solving and developing a successful approach to research.	I am at the stage in the PhD, where I now have a roadmap for the PhD. And now I have to continue walking down it. But I don't feel like I'm trying to form the map. It's like I have so that's sort of exciting but then it's also like a little daunting to look at, like how far you have to walk. But I feel confident that it's just like step-by-step day by day.
Building relations	Building health/productive relationships with peers; can be cross-linked with networking but also includes personal aspects of interaction.	just were around each other a lot. Like especially like dinnertime, I think that was very important. Mealtimes have always been personally important for me. I felt **like I connect with people over food a lot easier than almost anything else.**

Efficacy around Structured Activities	Efficacy around activities that were part of FIRED UP or Students' perception of how structured activities contributed to their self-efficacy (e.g., development of field skills as a result of field skill instruction).	When activities were planned, it was like everybody kind of doing things. And it was like, very structured. And **I don't think that's super conducive for building true relationships.** You build very corporate relationships and like structured meetings and stuff like that. And like you can interact and have relationships with people that way, like important ones, but they might not be as like, socially or beneficial.
Disciplinary Skills	Building skills relevant to ecology / evolutionary biology disciplines. For example, field skills, data collection, science methodologies, data analysis.	**the knowledge that was...knowing all the probes and different meters**, and leverage and LTER was awesome. And it gives me like, more of a holistic sense of what I could do. And what there isn't gaps in knowledge. Also, the NEON stuff is really cool.
Networking	Building relationships with peers that are specific to professional aspects of interaction (e.g., building a relationship with someone who has skills that may be beneficial in a future collaboration).	I would say I did like listening to talks, I only got to listen to one. And that inspired me because we had like, different people come in potential to establish another connection, another face that I can familiarize myself with, and the thing that they were passionate about. So, when they presented and shared it, it kind of spread everywhere, for me at least. So, I did enjoy that.....**But I was like, another graduate student. And he's kind and he's sharing, like, his data and his information. And he's excited because this is the thing that he picked. And like, being able to get like that like snips that have another like, totally, totally different field than what I'm studying without having to read a whole paper.** So, it's like, kind of like, kills two birds with one stone, like a socialization aspect and like a learning aspect.
Time Management	Managing one's time to accomplish professional goals and maintain well-being.	I have recently been trying to like, **negotiate my time budget.** So how much time I spend exploring versus doing, how much time I spend on classes versus research versus teaching, versus where like administrative stuff like participating in programs and being a part of diversity panels, like that sort of stuff. Because I feel like as a grad student, you do a lot of unpaid labor. And it can be tricky to decide what you do for money versus what you do for fun, versus what you do, just because you care.