

**NATIONAL SCIENCE FOUNDATION EXPERIMENTAL PROGRAM TO
STIMULATE COMPETITIVE RESEARCH (NSF EPSCOR) UNDERGRADUATE
SUMMER DIVERSITY RESEARCH PROGRAM: AN EVALUATION**

K. Michelle Peavy
Department of Psychology

I would like to acknowledge Gay Allison and the EPSCoR office for their support, as well as Jennifer Cooper, whose efforts helped facilitate the production of the report.

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BACKGROUND

The purpose of this project was to evaluate a program on the University of Montana (UM) campus: the Undergraduate Summer Diversity Research Program, which is sponsored by National Science Foundation Experimental Program to Stimulate Competitive Research (NSF EPSCoR). The Undergraduate Summer Diversity Research Program was designed to provide undergraduate students with an opportunity to be actively involved with scientific or technological research in an academic setting. Students who participate in the Summer Diversity program are recruited from universities whose student bodies are comprised of students with diverse ethnic, racial or cultural backgrounds. Following the selection process, students are matched with UM faculty who are actively involved in research. The selected students come to Missoula for a ten-week program designed to expose them to research and academic opportunities at the UM.

Summer 2005 marked the fifth time this program has been available, and the final year of funding by NSF EPSCoR. The program leaders during year four began seeing a new principal investigator and funding source. To that end, the leaders were interested in understanding expressly the kinds of skills participants gain through their experiences. An independent investigator from the Psychology Department, K. Michelle Peavy, was hired for the purposes of evaluating the Summer Diversity program. This report is a summary of the data collected and findings of the evaluation.

OBJECTIVES

The objectives of the evaluation were to (1) identify benefits, based on self-report, in terms of research skills and scientific knowledge that students gain by being a part of the Summer Diversity program, (2) gather information about students' attitudes towards science, research, and outdoor recreation before and after their participation, and (3) determine ways to improve the program through report of the students' and faculty mentors' experience.

METHODOLOGY

Quantitative and qualitative techniques were employed to obtain a better understanding of the impact of the Summer Diversity program on student participants. In order to make the review as comprehensive as possible, the investigator decided to seek input from a variety of sources. Specifically, participants in this evaluation fell into three categories: (1) Current Summer Diversity participants (summer 2005), (2) Past Summer Diversity participants (summers 2001-2004) and (3) UM Faculty mentors for 2005 Summer Diversity participants. Each group represented a different perspective on the efficacy of the Summer Diversity program, and thus, slightly different data collection methods were used for each group.

Current Summer Diversity participants (Summer 2005)

All 2005 Summer Diversity participants were eligible for recruitment into the program evaluation. Those who chose to participate in the program evaluation were surveyed at the beginning of their stay in Missoula (baseline), the end of their stay (follow-up).

Baseline: At the beginning of their stay in Missoula, the investigator met with each 2005 Summer Diversity program participant to introduce the program evaluation, consent willing participants into the evaluation, and set up times for baseline face-to-face interviews. After informed consent was obtained, the Interview for Current Participants – Part 1 (Appendix A) was administered by the investigator or assistant. The twenty-five minute interview was used for the purpose of gathering qualitative data. Specifically, the interview requested information from the Summer Diversity participants regarding: their expectations about the Summer Diversity program and what they hoped to gain during their summer in Missoula. The following are some item examples: “In your own words, describe why you were interested in the NSF EPSCoR Summer Diversity program?” and “What are your goals for this summer?” Additionally, quantitative information was gathered on a written survey, Survey for Current Participants – Part 1 (Appendix B). The survey was designed to get demographic information in addition to their knowledge and experience with academic research activities, computer skills, and attitudes towards outdoor recreation.

Follow-up: At the end of the 2005 Summer Diversity program, the investigator met with the participants again for a follow-up interview (Interview for Current Participants – Part 2, Appendix C) and had them fill out a follow-up survey (Survey For Current Participants – Part 2, Appendix D). The follow-up interview and survey contained similar questions to the initial ones, but questions were geared towards how the Summer Diversity program impacted them in terms of changes in skills, knowledge, and attitudes. For example, “What do you believe you gained by being part of the NSF EPSCoR Summer Diversity program?” and “How have your goals changed as a product of being involved in this program?”

Past Summer Diversity Participants

All past Summer Diversity participants were contacted by email with an explanation about the program evaluation and a request for their participation. In the event that the past Summer Diversity student emailed back and agreed to participate, an explanation of the project and a survey were sent by email (Appendix E). Past Summer Diversity participants were contacted three times before attempts to make contact were ceased. The survey for Past Summer Diversity students gathered demographics, information regarding current involvement in research, and their assessment about how the Summer Diversity program impacted their current status, future goals, and attitudes towards the outdoors. Past participants were asked to respond to the following items: “Please indicate the kinds of research activities in which you have been involved after leaving the Summer Diversity Program.” and “Describe any changes you made as a result of your participating in the Summer Diversity Program.”

UM Faculty Mentors for 2005 Summer Diversity Participants

All 2005 Summer Diversity faculty mentors were eligible for recruitment into the program evaluation.

Baseline: At the beginning of the 2005 Summer Diversity program, the investigator emailed UM Summer Diversity faculty mentors with an explanation of the program evaluation and requested their participation. If the faculty member agreed to participate, an appointment was made and the investigator met with the faculty mentor, at which point the mentor signed a consent form. The investigator conducted a face-to-face interview (Appendix F, Interview for Faculty Mentors – Part 1) for the purposes of gathering information regarding expectations of Summer Diversity Student, expectations for themselves, and mentorship philosophy. The following are some item examples: “What kinds of expectations do you have for your students?” and “What do you expect to gain by being part of this program?” Additionally, the faculty mentors filled out a survey (Appendix G, Survey for Faculty Mentors – Part 1), which gathered information on their perception of their students’ skill level.

Follow-up: At the end of their students’ stay (August, 2005), the 2005 Summer Diversity faculty mentors were again contacted again for a follow-up interview (Appendix H, Interview for Faculty Mentors – Part 2) and to fill out a final survey (Appendix I, Survey for Faculty Mentors – Part 2). Information gathered in the second interview was geared towards gauging how much students gained over the summer from the mentor’s point of view, how they changed, and suggestions for improving the Summer Diversity program. For example, one question asked: “If you had to redo this summer, what would you have done differently?” During the follow-up phase, faculty mentors were also asked to fill out a survey to gather quantitative data about the students’ improvement over time.

Data Analysis

Quantitative data from all questionnaires are presented in a descriptive fashion, reported in percentages (or means where appropriate) for each response. In terms of the qualitative information, the investigator determined emergent themes, and the percentage of the sample reporting each theme is expressed, along with the number of persons reporting the theme.

RESULTS

This section documents results from the Summer Diversity program evaluation and findings are presented in the following order: 1) data summarized for the 2005 Summer Diversity Participants, quantitative and qualitative, 2) summarized data for past participants, quantitative and qualitative, and 3) results for 2005 faculty mentors, quantitative and qualitative information.

1) 2005 Summer Diversity Students

All eleven 2005 Summer Diversity students were eligible to be a part of the program evaluation; ten of eleven were contacted to be recruited into the study. Ten students completed the baseline interview and survey (90.1%) and eight students completed the follow-up interview and survey (72.7%). Demographics for this group are summarized on Table 1.

Table 1. Demographic characteristics of 2005 Summer Diversity participants

Variable	N (%)	Mean (SD)
Age		25.1 (5.4)
Gender		
Female	8 (80)	
Male	2 (20)	
Ethnicity		
Caucasian	4 (40)	
Latino/Latina	1 (10)	
African American	0	
American Indian	0	
Asian American	4 (40)	
Multiracial	0	
“Other”	1 (10)	
Number of years of education		16.3 (1.1)

Quantitative Data – survey results

Research Activities

2005 Summer Diversity participants reported varying amounts of research experience before entering the program. While 33% indicated that they had never been a part of academic research before starting the Summer Diversity program, another 33% endorsed

having been involved in research between 1-2 years. Thirty percent reported that they had either presented at a professional conference or submitted work to an academic journal for publication before their experience with the Summer Diversity program. When asked to rate their comfort level in a research setting on a scale from 1-7 (where “1” is Very Comfortable and “7” is Uncomfortable), 2005 Summer Diversity students rated their comfort at an average of 2.4. Summarized on Table 2 are the results of questions regarding the types of research activities the students engaged in before and after their experience with the Summer Diversity Program.

Table 2. Involvement in research activities of 2005 Summer Diversity participants before and after the program

	Before Summer Diversity Program N (%)	After Summer Diversity Program N (%)
<i>Research Activity</i>		
<i>None</i>	3 (30)	0
<i>Clerical</i>	1 (10)	2 (28.6)
<i>Data Entry</i>	2 (20)	4 (57.1)
<i>Data Collection</i>	4 (40)	4 (57.1)
<i>Data Analysis</i>	3 (30)	6 (85.7)
<i>Literature searches</i>	5 (50)	5 (71.4)
<i>Literature Reviews</i>	3 (30)	3 (42.9)
<i>Other</i>	3 (30)	2 (28.6)

Computer Skills

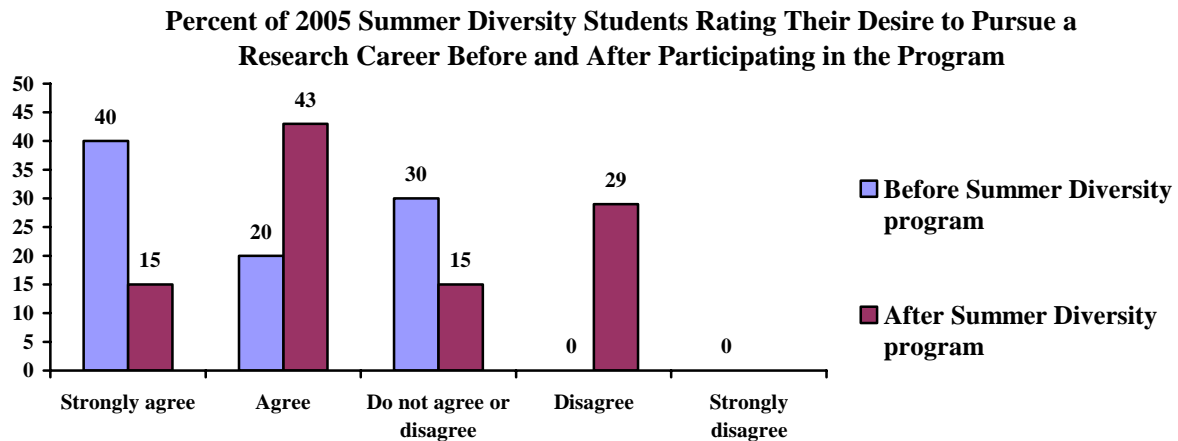
The 2005 Summer Diversity students reported being comfortable with computers from the beginning. On a scale from 1-7 (where “1” is Very Comfortable and “7” is Uncomfortable), the median rating for students’ overall comfort level with computers was 1.5. Even though students appeared to have a high level of comfort with computers, five students indicated that they had learned new computer skills during their time in Missoula. Particular skills gained by 2005 Summer Diversity Participants included: proficiency in specific lab software (Labworks), journal searching, article gathering, and statistical graphing.

Future Plans

It appears that some of the 2005 Summer Diversity changed their minds regarding their future life paths, in terms of desiring to attend graduate school and pursuing a research-related career. For example, students were asked to rate their agreement with the statement: “I plan on attending graduate school in the future.” Two students changed their rating of agreement between the baseline and follow-up surveys, both in the direction of more agreement with this statement (from “do not agree or disagree” to “agree”). Students were also asked to rate their agreement with the statement:

“Ultimately, I plan on pursuing a research-related career.” The ratings here indicated that some students actually decreased in their desire to pursue research-related careers from baseline to follow-up surveys. Specifically, three students’ ratings went in the direction of disagreement with this statement (from “do not agree or disagree” to “disagree”). A graph depicting these data is exemplified in Figure 1.

Figure 1.



Attitudes Towards Outdoor Activities

Overall, it appears that the 2005 Summer Diversity cohort was largely made up of people who were interested in the outdoors from the outset. Indeed, the outdoor activities offered through the program appeared to be a selling point for many of the participants. At the baseline interview, seven out of ten 2005 Summer Diversity participants reported that they “strongly agree” with the statement “I feel comfortable sleeping outside or in a tent.” Participants rated their overall comfort level with the outdoors relatively high. During the baseline survey, participants rated themselves on a scale (such as the one exemplified in Part A of Figure 2) indicating level of comfort with the outdoors. Part B of Figure 2 depicts how participants answered the question; most participants (60%) endorsed having the highest level of comfort in terms of being in the outdoors.

Figure 2. Participants’ reported comfort level with the outdoors

Question: Rate your overall comfort level with being in the outdoors. Check the appropriate space on the scale.

(A) Comfortable ___:___:___:___:___:___ Uncomfortable

(B) Comfortable **60%**:**40%**:___:___:___:___ Uncomfortable

Although the 2005 Summer Diversity participants seemed comfortable with the outdoors from the very beginning, participants did report gaining knowledge and experience in the outdoors due to their experience with the program. Specifically, two participants

reported that they had never camped before and learned a lot from this experience. Other participants (28.6%) reported gaining wildlife and wilderness awareness, such as identifying poison oak/ivy, knowing what to do when approached by a bear or mountain lion, and leaving no trace behind.

Qualitative Data – interview results

2005 Summer Diversity students were asked a number of questions in an interview format at both baseline and follow-up time periods. This next section describes the results.

Tables 3-6 display the major categories that emerged from the 2005 students' responses for the baseline period. These questions relate to students' expectations about the program.

Table 3. Responses to the question: In your own words, describe why you were interested in the NSF EPSCoR Summer Diversity program? (N=11)

Why Interested	N	%	Examples of Actual Student Responses
Exposure to research	5	45.4%	"For the research, first of all. I've done research, but in a different field. I never got any hands on research."
Explore career options	4	36.3%	"Being a science student, I'm at a turning point; I always thought I'd go to medical school, but I didn't know if in my heart I wanted to be a doctor or a scientist. This is my only way to know if I want to be a doctor or a scientist."
Outdoor Activities	4	36.3%	"I love doing stuff outside."
Benefits	3	27.2%	"There are so many benefits: a \$2000 stipend. I thought it was a really good deal."
Montana	3	27.2%	"I've never been to Montana before."
Resume	2	18.1%	"Good for future resume."

Table 4. Responses to the question: Before coming to Missoula, what kinds of worries did you have about your impending experience here? (N=11)

Worries	N	%	Examples of Actual Student Responses
Would I do a good job?	5	45.4%	"I've only worked with lab courses. I've never worked in a lab. I didn't know all of the procedures and techniques for the project. I didn't want to screw anything up."
Being away from family and friends	4	36.3%	"I miss my husband. I'm close to my family and just hanging out with them for the summer."

Table 5. Responses to the question: What are your goals/expectations for this summer? (N=11)

Goals	N	%	Examples of Actual Student Responses
Research experience	4	36.3%	“My goal was to work in a genetics lab so I would know more about that for my classes next year. To know more about science. To see a real science lab.”
Recommendation	3	27.2%	“Mostly, have a good time, get experience, and do any kind of work geologically related. We don’t have a lot of opportunities to do research.” “My goals are to do really well and hopefully get a recommendation from the guy that I’m working with.”
Finish project	3	27.2%	“I have specific goals around finishing my specific project.”
Meet new people and make new friends	2	18.1%	“I want to meet some new people; both Montanans and my classmates at State better.”
Do I want a career in research?	4	36.3%	“I’ve always been interested in research, but I want to see if this is a career.”
Develop relationship with mentor/professor	2	18.1%	“I expected to develop relationships with professors here. It’s a way to use this as a networking tool.”

Table 6. Responses to the question: What kind of skills do you hope to gain via your participation in this program? (N=11)

Skills Hope to Gain	N	%	Examples of Actual Student Responses
Lab skills (research techniques, equipment, analyzing, etc.)	9	81.8%	“More analyzing data and actually recording data. I’ve done stuff like that, but nothing like I’m doing here. I’ve never taken any of my own samples - everything has already been set up in a lab class.”
Outdoor skills	2	18.1%	“I’d like to get better at tromping through the woods and spotting bears.”
Interpersonal skills	2	18.1%	“Patience with patients, and then, time management. Being able to work with a diverse group of people.”

Tables 7-12 display the major categories that emerged from the 2005 students’ responses for the follow-up period. These questions relate to students’ perceptions of what they gained during their experience with the Summer Diversity program.

Table 7. Responses to the question: What do you believe you gained by being a part of the NSF EPSCoR Summer Diversity Program? (N=8)

Gain	N	%	Examples of Actual Student Responses
Experience	7	87.5%	“Valuable work experience. Knowledge of several work techniques that would be useful in my career.”
Clarity of future options/goals	3	37.5%	“(The) ability to know what this job would require of me in the future, and helped in my decision making as far as whether I wanted to take this path.”
Networking	2	25.0%	“I have had the opportunity to meet people and that may help me get into graduate school.”

Table 8. Responses to the question: How have your goals changed as a product of being involved in this program? (N=8)

Goals Changed	N	%	Examples of Actual Student Responses
Changed focus or area of interest	4	50.0%	“I still definitely decided I want to go to graduate school, but my career goals aren't necessarily focused on research now. I like the lab work in itself. It's the other stuff I'm not as fond of.”
Considering grad school now	3	37.5%	“I have considered going to grad school, where I hadn't before.”

Table 9. Responses to the question: What have you accomplished while you were here? (N=8)

Accomplishments	N	%	Examples of Actual Student Responses
Completed program related assignments	6	75.0%	“I went through the program and finished my presentation.”
Learned about research and lab techniques	4	50.0%	“I wrote a twelve page paper. I put together a presentation.” “I've learned a lot - the techniques of the lab. In school in the lab you're led step-by-step, but here you're on your own.”
Independence	2	25.0%	“I've learned to be more independent. I have more confidence in myself in terms of lab work.”

Table 10. Responses to the question: What do you think the biggest asset is to the NSF EPSCoR Summer Diversity Program? (N=8)

Biggest Asset	N	%	Examples of Actual Student Responses
Connections and Friendships	2	25.0%	“Probably the networking and the connections - even just all of the other EPSCoR students, my mentor, and the other lab technicians. I made some really valuable connections and friendships.”
Montana	2	25.0%	“....it gave me chance to see Montana.”

Table 11. Responses to the question: How do you think the program could be improved? (N=8)

Program Improvements	N	%	Examples of Actual Student Responses
Mentor Availability	3	37.5%	“They need to be a little more harsh on the mentors. There seems to be a consensus that the mentor isn't around enough. They just haven't been available to answer our questions about our presentations. That's been the biggest frustration.” “More organized activities on campus or in town would have been nice. We did a lot of more organized, larger activities, but having those things more readily available on a regular basis on campus or locally would have been nice. I think that one lecture series that we went to was really interesting. I would have enjoyed more of those.”
Activities	2	25.0%	

Table 12. Responses to the question: How have your knowledge and skills about your subject matter changed as a result of the Summer Diversity Program? (N=8)

Knowledge and Skills	N	%	Examples of Actual Student Responses
New Topics	3	37.5%	“Enormously, to say the least. I'm working in the bio-toxicology lab. I learned a lot about the immunology, nutroceuticals, and pharmaceuticals. I hadn't even taken a biology class before I came here.” “I didn't know about all of the different lab techniques, which I think were really interesting and valuable.” “I worked in the neural clinic, and I think my communication skills have gotten better with that population (geriatrics).”
Lab Techniques and Equipment	2	25.0%	
Communication Skills	2	25.0%	

Past Summer Diversity Participants

While thirty out of thirty past Summer Diversity participants were contacted for participation in the program evaluation, only 13 completed the survey (43%). The demographics for this group are summarized on Table 13.

Table 13. Demographic characteristics of past Summer Diversity participants

Variable	N (%)	Mean (SD)
Age		26.2
Gender		

Female	8 (61.5)	
Male	5 (38.5)	
Ethnicity		
Caucasian	3 (23.1)	
Latino/Latina	3 (23.1)	
African American	2 (7.6)	
American Indian	1 (7.6)	
Asian American	4 (30.7)	
Multiracial	0	
“Other”	1 (7.6)	
Number of years of education		16.5 (1.6)

Quantitative Data – survey results

Research Activities

All past Summer Diversity were surveyed at least one year after their participation in the program and, overall, this group indicated being highly involved in academic research. Forty-six percent reported that they had been involved in research for more than two years. Furthermore, 69.2% reported belonging to a professional organization in their field, 23% stated they had presented at a professional conference, and 7.6% endorsed being published in their area of academic research. When asked to rate their comfort level in a research setting on a scale from 1-7 (where “1” is Very Comfortable and “7” is Uncomfortable), past Summer Diversity students rated their comfort at an average of 1.8. Summarized on Table 14 are the results of questions regarding the types of research activities the students engaged in before and after their experience with the Summer Diversity Program.

Table 14. Involvement in research activities of past Summer Diversity participants before and after the program

	Before Summer Diversity Program N (%)	After Summer Diversity Program N (%)
Research Activity		
<i>None</i>	0	10 (76.9)
<i>Data Entry</i>	2 (15.3)	4 (30.7)
<i>Data Collection</i>	2 (15.3)	10 (76.9)
<i>Data Analysis</i>	2 (15.3)	9 (69.2)
<i>Literature searches</i>	1 (7.6)	6 (46.1)
<i>Literature Reviews</i>	0	2 (15.3)



Computer Skills

In addition to research skills, 38.4% past Summer Diversity participants reported gaining computer skills during their research experience in Missoula. Participants reported a variety of computer skills acquired during their experience with the Summer Diversity program. These skills ranged from improvements in basic computer applications (like learning to navigate through Power Point and the use of the internet for literature searches) to learning the use of software and equipment specific to their research, such as working with a Scanning Electron Microscope to analyze sediment samples.

Future Plans

Table 15 is a representation of past Summer Diversity participants' future plans. These data show that most students (84.6%) have strong intentions of attending graduate school. To a lesser extent, these participants appear to be interested in pursuing a research career. That is, 38.4% of students "strongly agree" with the statement: "Ultimately, I plan on pursuing a research-related career." We cannot measure the direct impact the Summer Diversity had on students' academic and career choices through these questions. However, specific questions regarding the role of the Summer Diversity program in these students' career paths are addressed in the qualitative portion of this report.

Table 15. Future plans of past Summer Diversity Students

Item	Percent Distribution					Percent Strongly Agree or Agree					
	Strongly disagree	Disagree	Do not agree or disagree	Agree	Strongly agree	0	20	40	60	80	100
I plan on attending graduate school in the future.	0	0	1 (7.6)	1 (7.6)	11 (84.6)						
Ultimately, I plan on pursuing a research-related career.	1 (7.6)	2 (15.3)	2 (15.3)	3 (23)	5 (38.4)						

Attitudes Towards Outdoor Activities

Data collected from the past Summer Diversity participants cannot help to determine what kind of impact the program had on their attitudes towards the outdoors, given the retrospective nature of the survey. (Although responses to the open-ended questions reveal the past participants’ opinion about how it shaped their attitudes towards the outdoors.) Nonetheless, these participants appear to be a group appreciative of outdoor activities and highly interested in the outdoors. Ten out of thirteen past Summer Diversity participants reported that they “strongly agree” with the statement “I feel comfortable sleeping outside or in a tent.” In terms of rating their overall comfort level with the outdoors on a scale from 1 to 7 (where 1 = very comfortable and 7 = very uncomfortable), the average level of comfort for this group is 1.4.

Qualitative Data

Past Summer Diversity participants were asked to respond to a number of open-ended questions on the questionnaire. This section describes the results. Tables 16-20 display the major categories that emerged from past Summer Diversity students’ responses.

Table 16. Responses to the question: What did you feel were the most beneficial aspects of the Summer Diversity program? (N=13)

Most Beneficial Aspect	N	%	Examples of Actual Student Responses
Exposure to new ideas, learning new things	5	38%	“I was forced to learn and be comfortable with another field; this was quite a mind opening experience. It made me a more diverse scientist, knowing more than just one field. Now, I can appreciate interesting interdisciplinary research and pose potentially interesting scientific questions.”
Learning about other cultures	3	23%	“I learned a great deal about my friends that came from a different background than I.”
Exposure to the outdoors	3	23%	“Being in the outdoors and away from the city for a while was really a time to relax and get to know a side of the sciences that I had never experienced before.
Building personal skills and relationships	2	15%	“The most beneficial aspects of the program for me were building on my personal skills with others in the field. I appreciate others more and their skills that are offered when in the field. Also building new friendships and networking with other professors and students.”

Table 17. Responses to the request: Explain how NSF EPSCoR Summer Diversity Program changed or shaped your research goals. (N=13)

Changed Goals	N	%	Examples of Actual Student Responses
Learned about research, and through that, learned what my interests really were	7	53.8%	“The EPSCoR program exposed me to academic research, and offered me an experience working in the laboratory. I was working in a field quite different than the field I had planned to study in school, but this allowed me to see beyond the field of science that I was familiar with and learn about the various research topics that are available.”
Confidence inside and outside of the lab	4	30.7%	“Without EPSCoR, I would have no clue on how to get started on a research project. It gave me all the confidence that I needed to aim for the sky and put graduate school in my sights.”
Appreciation for science and research	3	23%	“My EPSCoR experience opened my mind and significantly shaped my view of science as a whole, and encouraged me to have more respect and appreciate other fields in different scientific domains.”

Table 18. Responses to the question: In terms of research, what skills did you gain by participating in the Summer Diversity program? (N=13)

Skills Gained	N	%	Examples of Actual Student Responses
Basic knowledge of lab equipment, techniques, and procedures.	8	61.5%	“I learned the basics lab techniques..... Additionally, I was glad to have an early exposure to reading scientific literature, and conducting literature search. The experience of presenting and preparing a poster at the end of the summer was also an extremely valuable one. I was glad to have participated in this program early in my scientific career, right after my freshman year, and many of the skills that I have learned was immediately useful in my future research work.”
Decreased fear, increased appreciation, and affirmed liking of	11	84.6%	“Well, before participating in the program I had never biked, hiked, went camping or done anything outdoorsy. But Missoula Montana was SO BEAUTIFUL... I had to do as much as I could while I was out there so I finally learned how to ride a bike, I hiked a lot, went backpacking, rafting, went camping a couple times and so much more. I had a blast. And I’m also more of a nature person now.”

Table 19. Responses to the question: What needs improvement in the program? (N=13)

Improvements	N	%	Example of Student Responses
More outdoor activities	2	15.3%	“I would have personally enjoyed doing a little more outdoor stuff. I would have liked to camp a little more but I can understand because of budget reasons, we were only allowed to do so much.”
Academic structure	3	23%	“I enjoyed my experience overall. I did not enjoy the class time as much and wish we could have substituted it with more hands on activity learning that might have been available such as seeing what other labs were doing and the science behind their projects.” “I had a fine time overall. Maybe just a little bit more academic rigor would have been nice. It almost felt like summer camp at times.”

Table 20. Responses to the question: Looking back, what kind of role did the Summer Diversity program play in your current professional status/other aspects of your life? (N=13)

Role in Life	N	%	Example of Student Responses
Shaped or changed career goals	7	53.8%	“I ended up headed in a direction away from research.”
Confidence	6	46.2%	“I am definitely more inclined to pursue a research career, at least I am more certain that a research career is right for me.” “The program helped me to be a more confident scientist.” “I’ve gained so much confidence. The program was both physically and mentally challenging and looking back at it, I am very proud of myself. Now, when I am faced with a hard task I don’t doubt myself because I KNOW I can do it.”
Outdoor activities	3	23%	“I wanted to continue engaging in outdoor activities”
Appreciation for other cultures	2	15.3%	“Traveling to another part of the country is an eye-opening experience as well. I now appreciate the differences in culture and people in Montana and at home.”

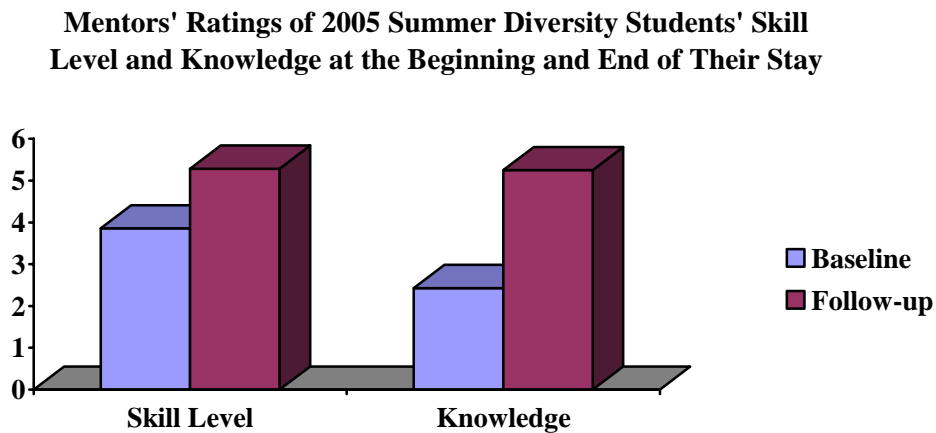
2005 Summer Diversity Faculty Mentors

All eleven 2005 Summer Diversity faculty mentors were contacted for participation in the program evaluation. Seven mentors took part in baseline interview and survey process (63.6%); all seven mentors were interviewed and surveyed for the follow-up, and one additional mentor that was not reached during baseline was contacted and completed the follow-up (72.2%). The other mentors were unresponsive or otherwise unavailable to do the program evaluation.

Quantitative Data – Survey Results

Faculty mentors were asked to rate their students on their: (1) level of skill in a research setting; and (2) knowledge in area of the faculty mentor. Mentors were surveyed both at the beginning of their students' stay, as well as at the end, providing a good reading on how the students changed over time. The surveyed faculty mentors indicated a great deal of improvement on the part of their students. To gauge level of skill and knowledge, mentors were asked to rate their students on a scale from 1 to 7, where 1 = "very skilled" and 7 = "not very skilled". Six out of seven mentors reported that their students had higher levels of skill at the end of their stay than at the beginning. Figure 2 below shows mentors' ratings of students' skill level and knowledge at baseline and follow-up time periods. Scores are *reversed* in order to better represent these results and the figure indicates that mentors reported improvement in both of these areas.

Figure 2.



In addition to research skills and knowledge gained, faculty mentors also endorsed high levels of improvement in other areas as well. Specifically, 2005 Summer Diversity mentors reported that their students gained computer skills, confidence, and program helped the student to develop professional goals. Table 21 outlines what the mentors endorsed in these areas.

Table 21. Mentors' ratings of student improvement over the summer

Item	Strongly disagree	Disagree	Do not agree or disagree	Agree	Strongly agree	N/A (skills were already high)
The student I mentored improved a great deal in his/her computer skills over the course of the summer.	0	0	1 (12.5%)	4 (50%)	1 (12.5%)	2 (25%)
I saw the student I mentored gain a great deal of confidence over the summer.	0	0	0	3 (37.5%)	5 (62.5%)	0
It appears that the NSF EPSCoR Summer Diversity program helped the student I mentored to develop his/her professional goals.	0	0	0	1 (12.5%)	7 (87.5%)	0

Qualitative Data – Interview Results

The investigator analyzed the qualitative data gathered from the 2005 Summer Diversity faculty mentors by determining themes which emerged from the interviews. This was done in order to determine faculty's perception of strengths of the program. Shown in tables 22-25 are the predominant themes that surfaced from the *baseline* interviews with faculty mentors.

Table 22. Responses to the question: In your own words, describe why you were interested in being a mentor for the NSF EPSCoR Summer Diversity program? (N=6)

Interest	N	%	Examples of Actual Faculty Responses
Lab help	4	66.7%	"As an assistant junior professor, it's important to get students working with me."
Opportunity to work with capable students	2	33.3%	"It's an opportunity to interact with students that are smart, well-motivated, curious, and come from diverse backgrounds."

Table 23. Responses to the question: What kinds of expectations do you have for your students? (N=6)

Expectations	N	%	Examples of Actual Faculty Responses
Positive experience	3	50%	"My goal is to give them a positive experience."
Independence	3	50%	"I expect that the student should be able to work individually."
Develop new skills	2	33.3%	"I expect him to develop the skills to think outside the box and give him skills to know conceptually what's behind what he is doing. Develop ways to think about his research."

Table 24. Responses to the question: What do you expect to gain by being a part of this program? (N=6)

Gain	N	%	Examples of Actual Faculty Responses
Access to another mind	2	33.3%	"It's fun to have interns around, getting different perspectives. It's useful for the project. You gain a lot by having an extra person there. The resources allow them more flexibility and increases their ability to be creative. They can play around with training - it's paid for automatically."
Help student be successful	2	33.3%	"It's an opportunity to work with a young mind and help him be successful. Play a part in this kid's developments - that's rewarding work. It's another situation to teach and play a part in his development."

Table 25. Responses to the question: How do you see this program helping Summer Diversity participants? (N=6)

Helping	N	%	Examples of Actual Faculty Responses
Give an idea of how research really works and help decide if it is the right career choice	4	66.7%	"Clearly getting opportunities to experience what science is all about. A greater appreciation for career decisions. An opportunity to take information that they've gained and extend it. Tests and classes are useless. This gives them a chance to take that information and synthesize new ideas. That's helping them move to the next level."

Tables 26-31 display the major categories that emerged from the 2005 faculty mentor responses for the follow-up period. These questions relate to faculty perceptions of what they see as beneficial for the students they mentored, what they gained during their experience with the Summer Diversity program, and how better to manage the program in the future.

Table 26. Responses to the question: What do you believe your student gained by being part of the NSF EPSCoR Summer Diversity Program? (N=8)

Student Gain	N	%	Examples of Actual Faculty Responses
Experience with the research process	7	87.5%	"[My student] got pretty good insights as to what it takes to work in the lab; both scientifically - like bench-work - and intellectually. She did not have a good idea about lab dynamics, or what is involved in a lab."

Table 27. Responses to the question: *If you had to redo this summer, what would you have done differently?(N=8)*

Done Differently	N	%	Examples of Actual Faculty Responses
Nothing	4	50%	“Not much. She was exposed to many different projects. Maybe focus on one. But I think the sampling scheme is better. She was exposed to a lot this way. We got to have casual discussions in a positive way. She collected some data and read literature. She interacted with graduate students.”
Helped student to understand the reason behind the project more	2	25%	“[My student] didn't really want to do what we're doing. I would have formalized the process. At the end, there was a coming to an understanding. I would have better communicated what she was gaining from the experience while it was taking place. When you're young and something doesn't fit, you don't really realize what you might get out of it.”

Table 28. Responses to the question: *What has your student accomplished while with you? (N=8)*

Student Accomplishment	N	%	Examples of Actual Faculty Responses
Lab skills	7	87.5%	“In terms of techniques [my student] learned how to culture cells, do plasma probes, protein assays. [My student] learned to interpret and analyze her data, and how to disseminate results to a group.”

Table 29. Responses to the question: *In what ways has your student changed over the course of your work with him or her? (N=8)*

Student Change	N	%	Examples of Actual Faculty Responses
Self-Confidence	3	37.5%	“[My student] had no background in this area. She got a lot more confident in herself and abilities to do things. She became more assertive in terms of what to ask for in the lab.”
Understanding of the subject matter and process	3	37.5%	“She gained a lot of experience. She was always willing to learn, but she became competent. Better at identifying questions, thinking about things ahead of time, and asking critical questions, critical thinking.”

Table 30. Responses to the question: What do you believe to be the biggest asset of the NSF EPSCoR Summer Diversity program? (N=8)

Biggest Asset	N	%	Examples of Actual Faculty Responses
Lab help	5	62.5%	“All of the students they pick are go-getters, motivated students, through the selection process and screening. It gave me someone to help in the lab and summer salary.”
Exposure to research	3	37.5%	“Exposing students to basic science research. Particularly as it pertains to career development.”

Responses to the question: How do you think the program could be improved? (N=8)

Improvement	N	%	Examples of Actual Faculty Responses
More time	3	37.5%	“If it was slightly longer it would be easier to get them through a research question. Especially when they come with so little knowledge. It's a huge amount to ask them to assimilate in a short amount of time. Even two more weeks would be helpful. It was a struggle and apparent that there were a few key elements missing because of time.”
Student access to a kitchen	2	25%	“Should have kitchens for the students. University village?”

LIMITATIONS AND STRENGTHS

There are several inherent issues with this type of research. It is important to mention that these results were based on self-report data, which are always subject to demand characteristics. Other limitations of this project have to do with the sample. The findings are derived from perceptions of a relatively small group of Summer Diversity students and UM faculty. In particular, a small percentage of past Summer Diversity participants participated in the program evaluation (43%). Additionally, for this group the questionnaire results were based on participants' post-program perceptions; it is difficult to ascertain the extent of learning gains as a result of the Summer Diversity experience. Aside from small sample size, there was a short interview-internal period for the 2005 Summer Diversity participants and their mentors, for whom two assessment periods *were* administered.

Despite these limitations, this study possesses a number of strengths. One of the strengths of this research was the use of qualitative and quantitative methodologies to assess the program. Additionally, data was gathered from three different groups, providing three different perspectives. Finally, 2005 Summer Diversity participants and their mentors were assessed at two time periods, therefore gains from the experience can be more accurately judged over time.

EXECUTIVE SUMMARY

Purpose

The primary purposes of this program evaluation were to: 1) understand the impacts of the Summer Diversity program on participants' knowledge, attitudes, and future orientation, 2) identify benefits in terms of research skills and scientific knowledge that students gain by being a part of the Summer Diversity program, and 3) determine ways to improve the program through report of the students' and faculty mentors' experience. Ideally, this report will serve to stimulate dialogue among future Summer Diversity Program planners and stakeholders so that this program will continue in the future.

Method

Quantitative and qualitative techniques were employed to obtain a comprehensive understanding of the impact of the Summer Diversity program on student participants. Data was gathered from three groups. The 2005 Summer Diversity participants were interviewed and surveyed at the beginning and end of their Summer Diversity program experience, as were their UM faculty mentors. The assessment for the students included questions regarding their expectations of the program, what they gained, and suggested improvements. For the faculty, questions were asked regarding their expectations of their students and overall attitude towards the program. The past Summer Diversity participants (summers 2001-2004) were also surveyed with questions regarding their attitudes about the program and what they acquired through the experience.

Highlights of Results

- Overall, the 2005 Summer Diversity participants, their faculty mentors, and participants during summers 2001-2004 were very positive about the program. One hundred percent of 2005 Summer Diversity participants interviewed at the end of their stay reported that the program met their expectations and they would recommend the program to others.
- The Summer Diversity participants appear to have gained a great deal in the area of research experience and activities. Increases in student knowledge and experience in a research setting during participation in the Summer Diversity program were reported by all three groups. Most notable was the improvement over time observed by faculty mentors of their students.
- It appears that the EPSCoR program helped to expand the commitment of science and research amongst its students. A third of 2005 Summer Diversity participants indicated that they had never been a part of academic research before starting the program. By the end of their experience, all participants had experienced multiple facets of research: those who participated in data entry and analysis doubled between the two interview time points. Two 2005 Summer Diversity participants indicated that they were more interested in seeking a research career at the end of their experience than at the beginning. Past Summer Diversity participants seemed to have been catapulted into research activities after their experience.

Almost seventy percent reported belonging to a professional organization in their field, 23% stated they had presented at a professional conference, and 7.6% endorsed being published in their area of academic research. Some student quotes related to gaining research experience are as follows: “The EPSCoR program exposed me to academic research, and offered me an experience working in the laboratory. I was working in a field quite different than the field I had planned to study in school, but this allowed me to see beyond the field of science that I was familiar with and learn about the various research topics that are available.” “Without EPSCoR, I would have no clue on how to get started on a research project. It gave me all the confidence that I needed to aim for the sky and put graduate school in my sights.” “My EPSCoR experience opened my mind and significantly shaped my view of science as a whole, and encouraged me to have more respect and appreciate other fields in different scientific domains.” “I am definitely more inclined to pursue a research career, at least I am more certain that a research career is right for me.”

- Modest gains were made in the area of computer skills. All students seem to come into the program with high levels of computer skills and knowledge. Nonetheless, 2005 and past Summer Diversity students reported gaining a variety of computer skills specific to their area of research, such as specialized software.
- Students participating in the Summer Diversity program reported that it provided them a platform from which to make decisions about their future. Specifically, students indicated that they used the program to help them determine if science and research are appropriate areas from them. It appears that some of the 2005 Summer Diversity changed their minds regarding their future life paths, in terms of desiring to attend graduate school and pursuing a research-related career.
- Summer Diversity students (both 2005 and past) seem to be a group that comes into the program with a high interest in outdoor activities. Most 2005 participants reported having a great deal of comfort with the outdoors from the outset of the program. Although the 2005 Summer Diversity participants seemed comfortable with the outdoors from the very beginning, participants did report gaining knowledge and experience in the outdoors due to their experience with the program. An area difficult to quantify, but seemingly important for this group, is self-confidence. That is, the construct of confidence is difficult to measure and even more difficult to determine if there have been gains in this area. However, self-confidence and personal growth showed up again and again in the students’ and faculty’s qualitative comments. Overall, both Summer Diversity students (2005 and past alike) and 2005 faculty mentors endorsed self-confidence as being a major area of growth.
- Few suggestions were given to improve the Summer Diversity program. Some faculty mentors (37.5%) proposed that the program be lengthened to benefit both students and faculty alike. Interestingly, neither the 2005 Summer Diversity participants nor the 2001-2004 participants suggested that the program be lengthened. Instead, the 2005 students’ suggestions for improving the program focused on increasing mentor availability and the past summer participants requested boosting the number of activities planned and offered during the summer. Above and beyond the actual suggestions the students gave for

improving the program, the responses to the question elicited a plethora of accolades for the program: “My overall experience with the summer diversity program is a positive one. There isn’t much I would change about it.” “Where can I start? I thought the program was unbelievably fantastic. This program so well organized, structured, and interesting. In my opinion I thought that having something different to do almost every weekend was great.” “I loved how the program was as is.” “The program was wonderful! Honestly, the staff was great, the students were awesome... I had fun at all of our outdoor events, as well as indoor. It was an unforgettable experience.”

Interview for Current Participants – Part 1

1. In your own words, describe why you were interested in the NSF EPSCoR Summer Diversity program?
2. Before coming to Missoula, what kinds of worries did you have about your impending experience here?
3. What are your goals for this summer?
4. What do you expect to gain by being part of this program?
5. What do you hope to accomplish while you are here?
6. What kinds of skills do you hope to gain via your participation in this program?
7. Where do you see yourself in five years?
8. What expectations do you have about being in this program?

Appendix B, Survey For Current Participants – Part 1

Survey For Current Participants – Part 1

The following questions ask you about your experience and goals in a number of areas. Please mark the appropriate answer. Thank you for your help!

Completing this survey is completely voluntary and you may skip any question and quit at any time.

Demographics

1. How old are you? _____
2. What gender do you consider yourself?
 - Male
 - Female
 - Transgender
3. Of what race do you consider yourself? (Check all that apply)
 - Caucasian
 - African-American
 - Hispanic or Latino (of any race)
 - Mexican
 - Puerto Rican
 - Cuban
 - Other Hispanic or Latino
 - American Indian
 - Alaska Native
 - Asian
 - Pacific Islander
 - Other
4. Number of years of education. _____ (HS Grad or GED = 12)
5. Highest level of education of mother:
 - Did not finish high school
 - Graduated high school
 - Some college, no degree
 - Associate Degree
 - Bachelors Degree

Appendix B, Survey For Current Participants – Part 1

Masters Degree

Doctorate

6. Highest level of education of father:

Did not finish high school

Graduated high school

Some college, no degree

Associate Degree

Bachelors Degree

Masters Degree

Doctorate

7. Approximate population of the city where you were last living. (Check one; do not include metropolitan area.)

Less than 50,000

Between 50,000 and 100,000

Between 100,000 and 200,000

Between 200,000 and 300,000

Between 300,000 and 400,000

More than 400,000

8. At my home institution, I typically commute to school by (Check one)

Walking

Riding my bike

Driving my car

Carpooling

Public transportation

Research experience

9. Please indicate how long you have been involved in research at your home academic institution.

I have *never* been a part of academic research.

1-6 months

6 months – 1 year

1-2 years

More than 2 years

Appendix B, Survey For Current Participants – Part 1

10. Please indicate the kinds of research activities in which you were involved at your home institution (check all that apply):

- None
- Clerical
- Data entry
- Data collection
- Data analysis
- Literature searches
- Literature reviews
- Other, please list. _____

11. Please indicate your involvement in professional organizations in your field (check all that apply):

- I belong to a national professional organization related to my area of study (for example, American Psychological Association)
 - I have presented a poster at an academic conference.
 - I have published work in an academic journal.
 - I have submitted work to be presented to an academic conference.
 - I have submitted work to be published in an academic journal.
 - Other, please list. _____
-
-

Read each statement and decide how much you agree or disagree with that statement. Circle the letter that corresponds to your answer using this key to answer the following two questions:

- A = Strongly agree
- B = Agree
- C = Do not agree or disagree
- D = Disagree
- E = Strongly disagree

13. I plan on attending graduate school in the future.

A B C D E

14. Ultimately, I plan on pursuing a research-related career.

Appendix B, Survey For Current Participants – Part 1

A B C D E

15. Rate your overall comfort level in a research setting. Check the appropriate space on the scale.

Comfortable ___:___:___:___:___:___ Uncomfortable

Computer skills

The following items ask about your level of comfort and experience with computers. Please read over the items carefully and determine how much you agree or disagree with each item. Use this scale:

- A = Strongly agree
- B = Agree
- C = Do not agree or disagree
- D = Disagree
- E = Strongly disagree

16. I feel comfortable with word processing on a computer.

A B C D E

17. I feel comfortable using data analytic packages, such as SPSS or SAS.

A B C D E

18. Rate your overall comfort level with using computers. Check the appropriate space on the scale.

Comfortable ___:___:___:___:___:___ Uncomfortable

19. What types of software programs do you use?_____

Outdoor

The following items ask about your level of comfort and experience with the outdoors. Please read over the items carefully and determine how much you agree or disagree with each item. Use this scale:

- A = Strongly agree
- B = Agree
- C = Do not agree or disagree
- D = Disagree

Appendix B, Survey For Current Participants – Part 1

E = Strongly disagree

20. I feel comfortable sleeping outside or in a tent.
A B C D E

21. I am fearful of spending time in the woods.
A B C D E

22. Spending time outdoors is a waste of time.
A B C D E

23. In your lifetime, in which of the following activities have you participated?
(Check all that apply)

- _____ Built a campfire
- _____ Roasted marshmallows around a campfire
- _____ Swam in a river
- _____ Ridden a bike on a trail
- _____ Hiked on a trail

24. Rate your overall comfort level with being in the outdoors. Check the appropriate space on the scale.

Comfortable ___:___:___:___:___:___ Uncomfortable

Thank you for participating.

Interview for Current Participants – Part 2

1. What do you believe you gained by being part of the NSF EPSCoR Summer Diversity program?
2. How have your goals changed as a product of being involved in this program?
3. What have you accomplished while you were here?
4. Where do you see yourself in five years?
5. What do you think the biggest asset is to the NSF EPSCoR Summer Diversity Program?
6. How do you think the program could be improved?
7. How could your experience this summer been made more complete?
8. Did this program meet your expectations?
 Yes
 No
9. Why or why not?
10. How have your knowledge and skills about your subject matter changed as a result of the Summer Diversity Program?
11. Would you recommend this program to others?
 Yes
 No
12. Why or why not?

Survey For Current Participants – Part 2

The following questions ask you about your experience and goals in a number of areas. Please mark the appropriate answer. Thank you for your help!

Completing this survey is completely voluntary and you may skip any question and quit at any time.

Demographics

1. How old are you? _____
2. What gender do you consider yourself?
 - Male
 - Female
 - Transgender
3. Of what race do you consider yourself? (Check all that apply)
 - Caucasian
 - African-American
 - Hispanic or Latino (of any race)
 - Mexican
 - Puerto Rican
 - Cuban
 - Other Hispanic or Latino
 - American Indian
 - Alaska Native
 - Asian
 - Pacific Islander
 - Other
4. Number of years of education. _____ (HS Grad or GED = 12)
5. Highest level of education of mother:
 - Did not finish high school
 - Graduated high school
 - Some college, no degree
 - Associate Degree
 - Bachelors Degree

Appendix D, Survey for Current Participants – Part 2

Masters Degree

Doctorate

6. Highest level of education of father:

Did not finish high school

Graduated high school

Some college, no degree

Associate Degree

Bachelors Degree

Masters Degree

Doctorate

7. Approximate population of the city where you were last living. (Check one; do not include metropolitan area.)

Less than 50,000

Between 50,000 and 100,000

Between 100,000 and 200,000

Between 200,000 and 300,000

Between 300,000 and 400,000

More than 400,000

8. At my home institution, I typically commute to school by (Check one)

Walking

Riding my bike

Driving my car

Carpooling

Public transportation

Research experience

9. Please indicate the kinds of research activities you have been doing since coming to the University of Montana. (Check all that apply):

Clerical

Data entry

Data collection

Data analysis

Literature searches

Appendix D, Survey for Current Participants – Part 2

- Literature reviews
 - Other, please list. _____
-
-

10. Please indicate your involvement in professional organizations in your field (check all that apply):
- I belong to a national professional organization related to my area of study (for example, American Psychological Association)
 - I have presented a poster at an academic conference.
 - I have published work in an academic journal.
 - I have submitted work to be presented to an academic conference.
 - I have submitted work to be published in an academic journal.
 - Other, please list. _____
-
-

Read each statement and decide how much you agree or disagree with that statement. Circle the letter that corresponds to your answer using this key to answer the following two questions:

- A = Strongly agree
- B = Agree
- C = Do not agree or disagree
- D = Disagree
- E = Strongly disagree

11. I plan on attending graduate school in the future.

A B C D E

12. Ultimately, I plan on pursuing a research-related career.

A B C D E

13. What kinds of research skills did you gain by participating in the Summer Diversity Program? _____

Appendix D, Survey for Current Participants – Part 2

D = Disagree

E = Strongly disagree

19. I feel comfortable sleeping outside or in a tent.

A B C D E

20. I am fearful of spending time in the woods.

A B C D E

21. Spending time outdoors is a waste of time.

A B C D E

22. In your lifetime, in which of the following activities have you participated?
(Check all that apply)

_____ Built a campfire

_____ Roasted marshmallows around a campfire

_____ Swam in a river

_____ Ridden a bike on a trail

_____ Hiked on a trail

23. What skills or knowledge about the outdoors have you gained since coming to
Missoula for the Summer Diversity Program? _____

General

24. Rate your overall satisfaction with your experience of the NSF EPSCoR Summer
Diversity Program. Check the appropriate space on the scale.

Very Satisfied ___:___:___:___:___:___:___ Very Unsatisfied

Thank you for participating.

Survey for past Summer Diversity Program Participants

The following questions ask you about your experience and goals in a number of areas. Please mark the appropriate answer. Thank you for your help!

Demographics

1. How old are you? _____
2. What gender do you consider yourself?
 - Male
 - Female
 - Transgender
3. Of what race do you consider yourself? (Check all that apply)
 - Caucasian
 - African-American
 - Hispanic or Latino (of any race)
 - Mexican
 - Puerto Rican
 - Cuban
 - Other Hispanic or Latino
 - American Indian
 - Alaska Native
 - Asian
 - Pacific Islander
 - Other
4. Number of years of education. _____ (HS Grad or GED = 12)
5. Highest level of education of mother:
 - Did not finish high school
 - Graduated high school
 - Some college, no degree
 - Associate Degree
 - Bachelors Degree
 - Masters Degree

Appendix E, Survey for past Summer Diversity Program Participants

Doctorate

6. Highest level of education of father:

Did not finish high school

Graduated high school

Some college, no degree

Associate Degree

Bachelors Degree

Masters Degree

Doctorate

7. Approximate population of the city where you are currently living. (Check one; do not include metropolitan area.)

Less than 50,000

Between 50,000 and 100,000

Between 100,000 and 200,000

Between 200,000 and 300,000

Between 300,000 and 400,000

More than 400,000

Research experience

8. Please indicate how long you have been involved in research.

I have *never* been a part of academic research.

1-6 months

6 months – 1 year

1-2 years

More than 2 years

9. Please indicate the kinds of research activities in which you were involved *before* attending the Summer Diversity Program (check all that apply):

None

Clerical

Data entry

Data collection

Data analysis

Literature searches

Appendix E, Survey for past Summer Diversity Program Participants

- Literature reviews
 - Other, please list. _____
-
-

10. Please indicate the kinds of research activities in which you have been involved after leaving the Summer Diversity Program (check all that apply):

- None
 - Clerical
 - Data entry
 - Data collection
 - Data analysis
 - Literature searches
 - Literature reviews
 - Other, please list. _____
-
-

11. Please indicate your involvement in professional organizations in your field (check all that apply):

- I belong to a national professional organization related to my area of study (for example, American Psychological Association)
 - I have presented a poster at an academic conference.
 - I have published work in an academic journal.
 - I have submitted work to be presented to an academic conference.
 - I have submitted work to be published in an academic journal.
 - Other, please list. . _____
-
-

Read each statement and decide how much you agree or disagree with that statement. Circle the letter that corresponds to your answer using this key to answer the following two questions:

- A = Strongly agree
- B = Agree
- C = Do not agree or disagree

Appendix E, Survey for past Summer Diversity Program Participants

D = Disagree
E = Strongly disagree

12. I plan on attending graduate school in the future.

A B C D E

13. Ultimately, I plan on pursuing a research-related career.

A B C D E

14. Rate your overall comfort level in a research setting. Check the appropriate space on the scale.

Comfortable ___:___:___:___:___:___ Uncomfortable

15. Explain how the NSF EPSCoR Summer Diversity program changed or shaped your research goals.

16. In terms of research, what skills did you gain by participating in the Summer Diversity program?

Computer skills

The following items ask about your level of comfort and experience with computers. Please read over the items carefully and determine how much you agree or disagree with each item. Use this scale:

A = Strongly agree
B = Agree
C = Do not agree or disagree
D = Disagree
E = Strongly disagree

Appendix E, Survey for past Summer Diversity Program Participants

17. I feel comfortable with word processing on a computer. A B C D E

18. I feel comfortable using data analytic packages, such as SPSS or SAS. A B C D E

19. Rate your overall comfort level with using computers. Check the appropriate space on the scale.
Comfortable ___:___:___:___:___:___ Uncomfortable

20. What types of software programs do you use? _____

21. Did you gain any computer skills during your participation in the Summer Diversity program?
 Yes
 No

22. If yes, what kinds of skills did you acquire?

Outdoor

The following items ask about your level of comfort and experience with the outdoors. Please read over the items carefully and determine how much you agree or disagree with each item. Use this scale:

- A = Strongly agree
- B = Agree
- C = Do not agree or disagree
- D = Disagree
- E = Strongly disagree

23. I feel comfortable sleeping outside or in a tent. A B C D E

24. I am fearful of spending time in the woods.

Appendix E, Survey for past Summer Diversity Program Participants

A B C D E

25. Spending time outdoors is a waste of time.

A B C D E

26. In your lifetime, in which of the following activities have you participated?
(Check all that apply)

- _____ Built a campfire
- _____ Roasted marshmallows around a campfire
- _____ Swam in a river
- _____ Ridden a bike on a trail
- _____ Hiked on a trail

27. Rate your overall comfort level with being in the outdoors. Check the appropriate space on the scale.

Comfortable ___:___:___:___:___:___ Uncomfortable

28. How did the Summer Diversity Program influence your attitude about outdoor recreation?

29. We're interested in your overall experience with the Summer Diversity program. Please give us an idea about what you think needed improvement in the program.

30. What did you feel was (were) the most beneficial aspect(s) of the Summer Diversity Program?

Appendix E, Survey for past Summer Diversity Program Participants

31. Looking back, what kind of role did the Summer Diversity Program play in your current professional status?

32. What kind of role did the Summer Diversity Program play in other aspects of your life?

33. Describe any changes you made as a result of your participating in the Summer Diversity Program.

34. In the following space, please provide any other comments you feel would be useful to know in this program evaluation.

Thank you for participating

Interview for Faculty – Part 1

1. In your own words, describe why you were interested in being a mentor for the NSF EPSCoR Summer Diversity program?
2. What kinds of expectations do you have for your students?
3. How will you integrate them into your ongoing work?
4. Do you have goals for your students? If so, what are they?
5. What do you expect to gain by being part of this program?
6. Describe your philosophy on mentorship.
7. How do you see this program helping Summer Diversity participants?

Survey for Faculty – Part 1

The following questions ask you about your Summer Diversity student. The information you provide will remain confidential and completing of this survey is voluntary. The purpose of obtaining this information is for a larger program evaluation of the NSF EPSCoR Summer Diversity program. The end-product of this project will culminate in a report in which the information you provide will be displayed in an aggregate form only.

Please mark the appropriate answer. Thank you for your help!

Research experience

1. Rate your student’s overall skill level in a research setting. Check the appropriate space on the scale.

Very skilled ___:___:___:___:___:___:___ Not very skilled

2. Rate your student’s overall knowledge of the work you are doing.

Very skilled ___:___:___:___:___:___:___ Not very skilled

3. Please indicate the kinds of research activities you have your student involved in (check all that apply):

- Clerical
- Data entry
- Data collection
- Data analysis
- Literature searches
- Literature reviews
- Other, please list. _____

Thank you for participating.

Interview for Faculty – Part 2

1. What do you believe your student gained by being part of the NSF ESPSoR Summer Diversity program?
2. If you had to redo this summer, what would you have done differently?
3. What has your student accomplished while working with you?
4. In what ways has your student changed over the course of your work with him or her?
5. What do you believe to be the biggest asset of the NSF EPSCoR Summer Diversity Program?
6. How do you think the program could be improved?
7. Would you recommend participation in the program to your colleagues?
 Yes
 No
8. Why or why not?

Survey for Faculty – Part 2

The following questions ask you about your experience and goals in a number of areas. The information you provide will remain confidential and completing of this survey is voluntary. The purpose of obtaining this information is for a larger program evaluation of the NSF EPSCoR Summer Diversity program. The end-product of this project will culminate in a report in which the information you provide will be displayed in an aggregate form only.

Please mark the appropriate answer. Thank you for your help!

Research experience

1. Rate your NSF EPSCoR Summer Diversity student’s overall skill level in a research setting. Check the appropriate space on the scale.

Very skilled ___:___:___:___:___:___ Not very skilled

2. Rate your student’s overall knowledge of the work you are doing.

Very knowledgeable ___:___:___:___:___:___ Not at all knowledgeable

3. Please indicate the kinds of research activities in which your student participated (check all that apply):

- Clerical
- Data entry
- Data collection
- Data analysis
- Literature searches
- Literature reviews

Other, please list. _____

Read each statement and decide how much you agree or disagree with that statement. Circle the letter that corresponds to your answer using this key to answer the following two questions:

- A = Strongly agree
- B = Agree
- C = Do not agree or disagree
- D = Disagree
- E = Strongly disagree

Appendix J, Survey for Faculty – Part 2

4. The student I mentored improved a great deal in his/her **research skills** over the course of the summer.

A B C D E

5. The student I mentored improved a great deal in his/her **computer skills** over the course of the summer.

A B C D E

6. I saw the student I mentored gain a great deal of confidence over the summer.

A B C D E

7. It appears that the NSF EPSCoR Summer Diversity program helped the student I mentored to develop his/her professional goals.

A B C D E

8. Please list other ways in which you saw this student change over the summer.

Thank you for participating.