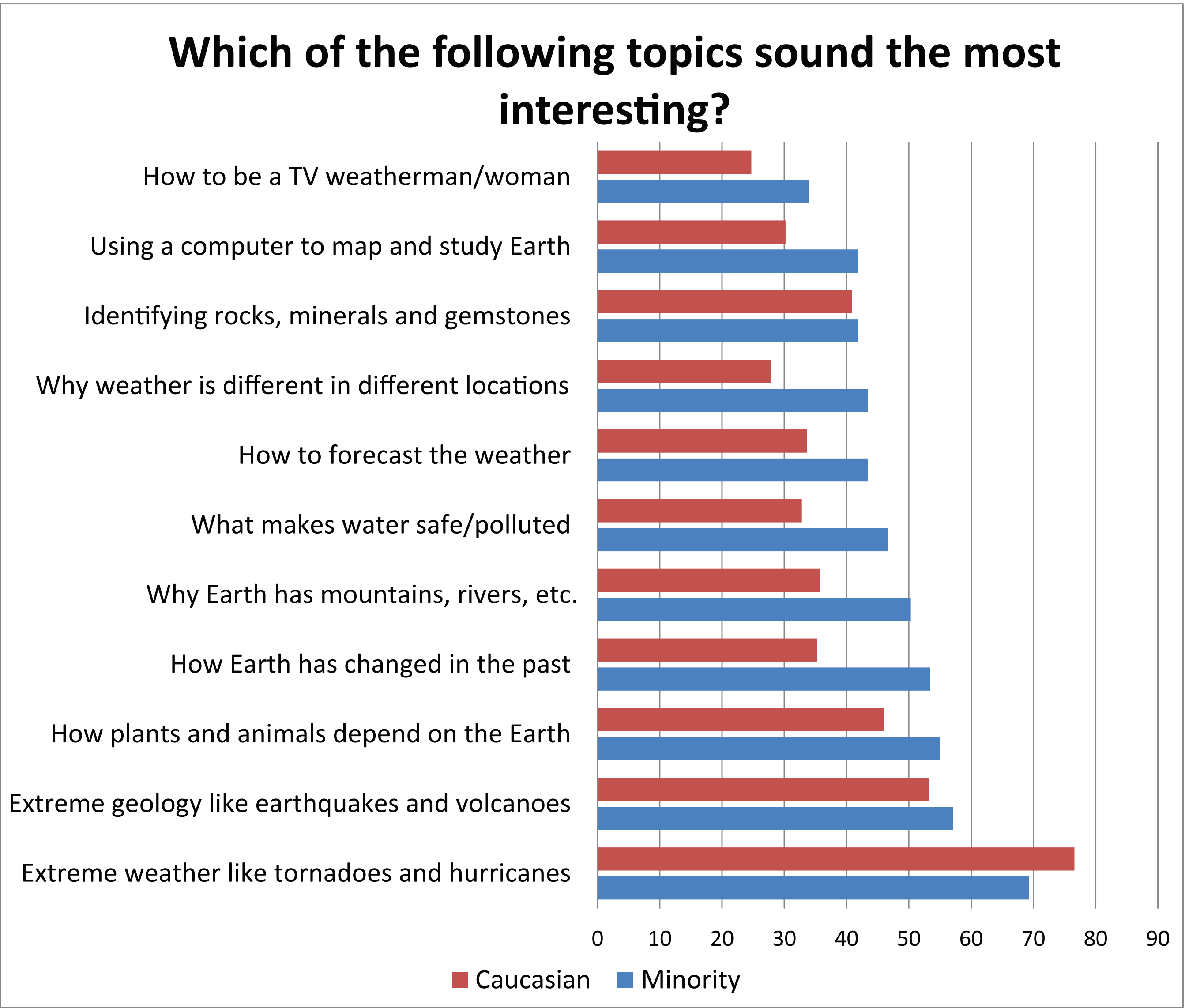


Minority Student Knowledge of and Interest in Geoscience Careers

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Purpose

This project was part of a grant funded by NSF to plan professional development activities for science teachers. The ultimate goal of this project and continuing efforts is to help these teachers to bring engaging geoscience lessons into their classroom to attract more students (but especially diverse students) into the geosciences. To this end, both teachers and students were surveyed about the geoscience topics in which they were most interested.



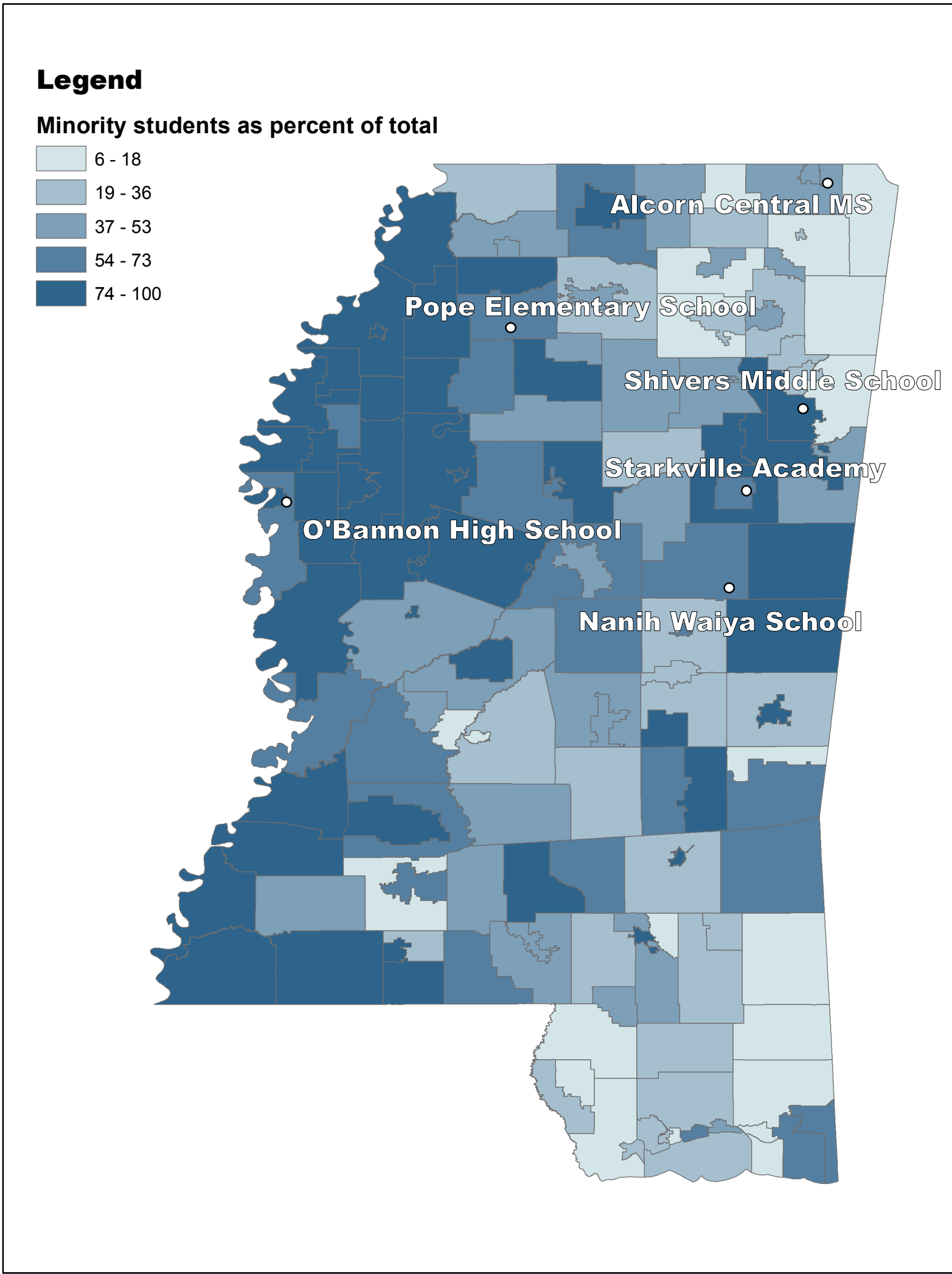
Background

Multiple factors are responsible for the dearth of minorities in geoscience careers and college majors. The geosciences, more than other sciences, suffer from a lack of awareness. This includes awareness of careers, majors, and even what the geosciences are. Students are less likely to take geoscience type classes before they get to college. Those that do are more likely to have teachers teaching outside their primary field. Many efforts to recruit students into the geosciences have utilized being outdoors as a selling point. This approach to recruiting minority students may not be effective because not all groups have the same interest in the outdoors and nature. This project seeks to identify those topics that are the greatest interest to middle and high school students, along with gaps in awareness of geoscience careers and majors, and attitudes that must be considered before implementing future classroom activities.



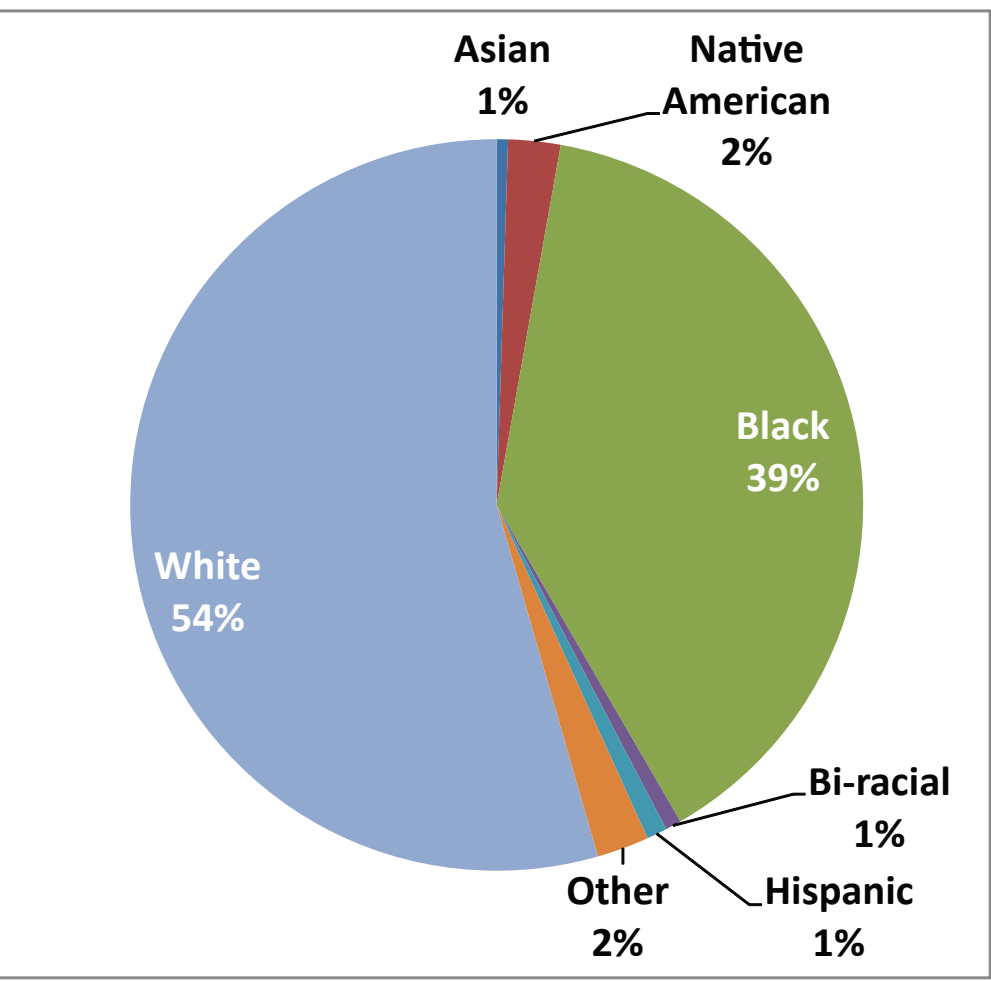
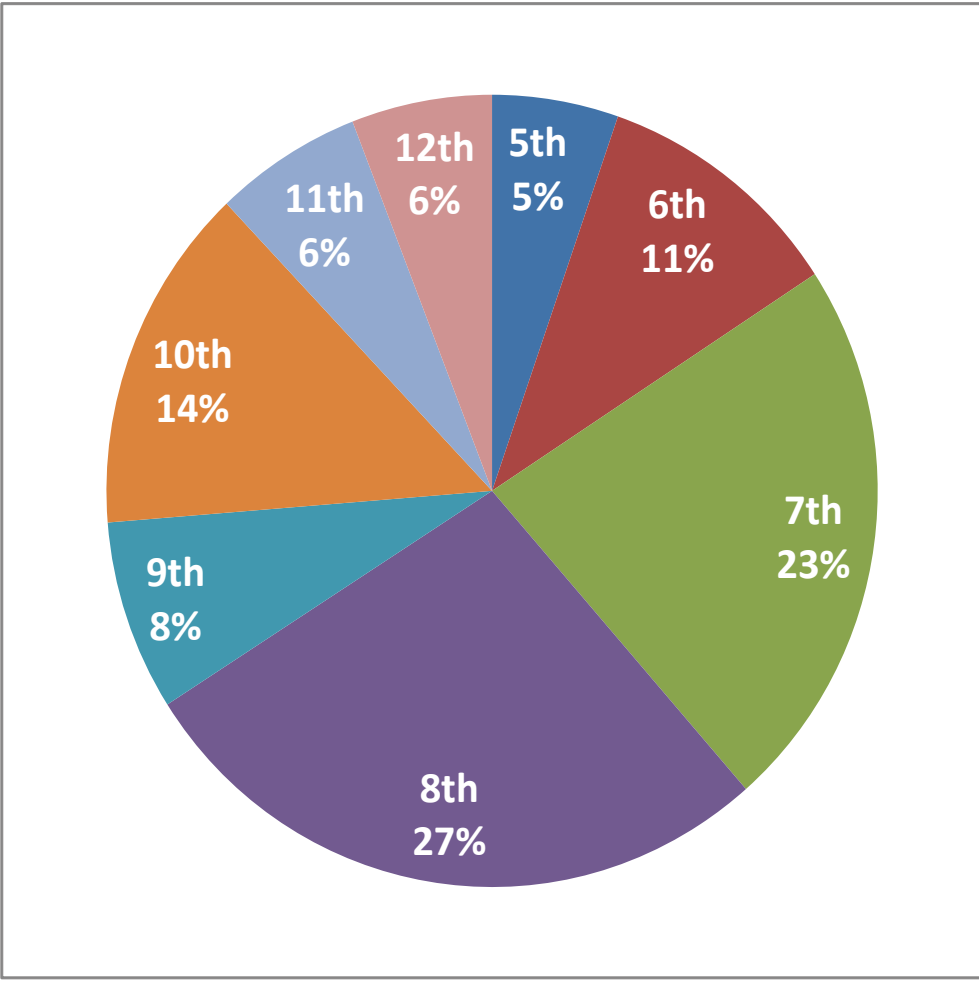
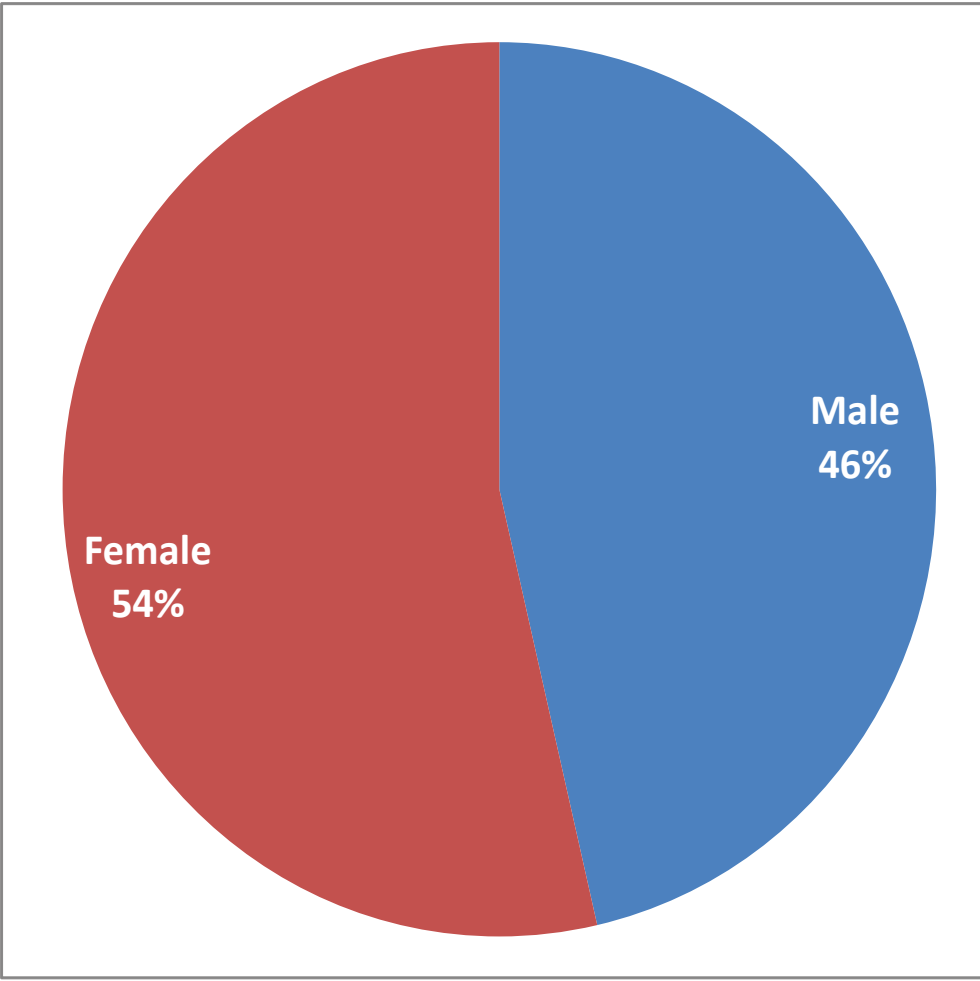
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More Information



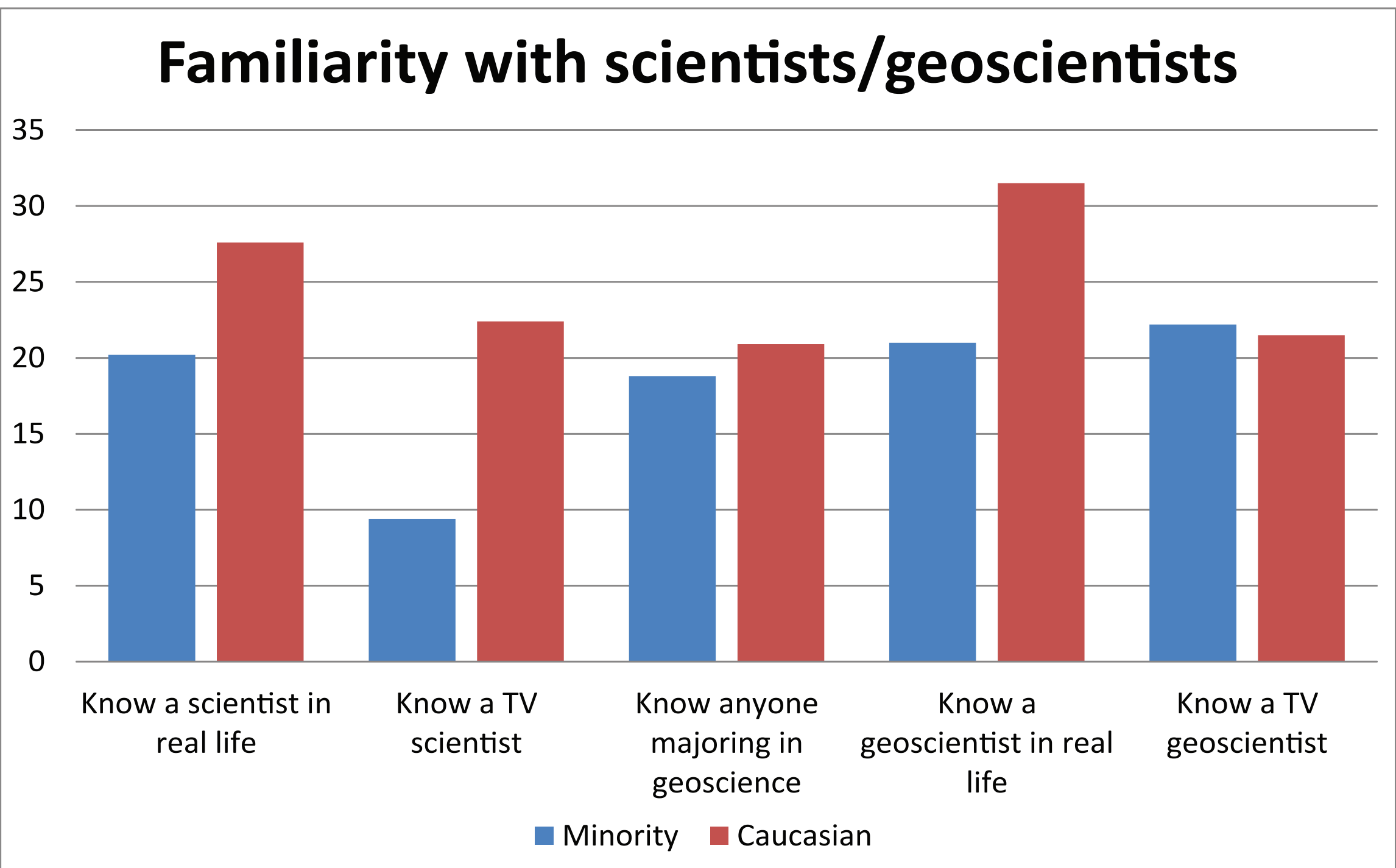
Methods

We surveyed 443 grade 5-12 students at six schools in North Mississippi. Students responded to questions about the topics in the geosciences they found most interesting, whether they knew any scientists or geoscientists either in person or on television and a set of questions measuring their attitudes toward the geosciences. They also responded to a set of questions about science in general, as well as the qualities they thought were important in their ideal career. Teachers passed out the surveys and parental consent agreements and then returned them to the researchers. The overall student response rate among those teachers who agreed to participate was 55.8%. The lower than expected response rate was primarily due to students not returning the signed consent form.



Research Hypotheses

- Knowledge of geoscience careers, perceived efficacy in geoscience majors, perceived parental support, and expected career satisfaction will be lower among the minority students surveyed.
- Minority students surveyed will know fewer geoscientists in person and possibly name fewer TV geoscientists.
- Minority students surveyed will indicate a lower level of enjoyment in being outdoors and learning about nature.
- Minority students surveyed will rate careers that help people higher than careers that help the environment and outdoor careers.

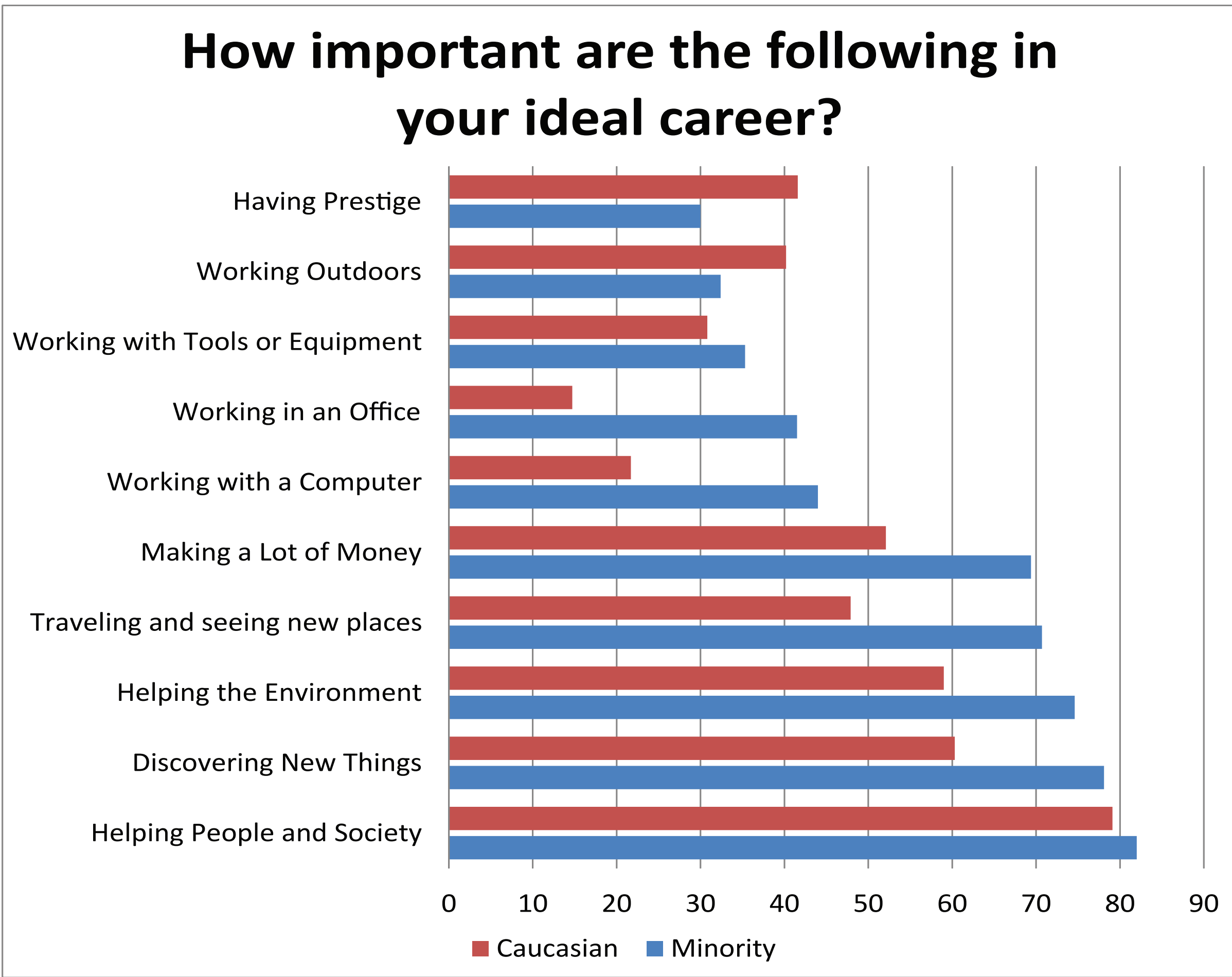


Results

No significant differences were found (using a Mann-Whitney U Test) among any of the geoscience measures. Several significant differences were found among the science measures (both at right).

Science Measures	Minority	Caucasian	Sig?
<i>Science is one of my favorite subjects</i>	3.15	3.45	0.017
I enjoy my math classes	3.71	3.62	0.314
My science class is boring	2.44	2.34	0.438
My mom and/or dad is happy when I do well in school	4.73	4.73	0.662
I make good grades in my science classes	3.87	3.89	0.968
Math is hard for me	2.49	2.6	0.328
<i>I learn science quickly</i>	3.11	3.44	0.002
If I do well in school, I will be able to get a good job	4.56	4.59	0.914
My friends would laugh at me if I told them I wanted to be a scientist	2.6	2.77	0.197
<i>One of my friends wants to be a scientist</i>	2.73	3	0.008
I would like to do science experiments in class	4.29	4.46	0.119
I would like to take field trips with my class to learn about science	4.38	4.26	0.164
Classroom activities such as science experiments are too hard	2.13	1.97	0.157
<i>I would like to travel to new places.</i>	4.6	4.44	0.006
<i>I like being outdoors.</i>	4.14	4.58	< .001
<i>I like learning about nature.</i>	3.7	4.03	0.01
I like to take things apart to find out how they work	3.63	3.66	0.675
I like to watch TV shows about science	2.95	2.99	0.788
I like to read about science	2.85	2.63	0.118

Geoscience Measures	Minority	Caucasian	Sig?
I am considering majoring in the Geosciences in college.	2.66	2.55	0.298
I know what classes you have to take to become a Geoscientist.	2.45	2.47	0.904
I'd enjoy a career in Geosciences.	2.82	2.68	0.211
A major in Geosciences requires too many math classes	2.94	2.95	0.77
I think I could handle the classwork required to become a Geoscientist.	3.31	3.31	0.823
My family would be happy if I decided to become a Geoscientist.	3.59	3.45	0.069
I don't know much about possible careers in Geoscience.	3.53	3.74	0.173
Most Geoscientists make good money.	3.69	3.57	0.155
I have a good idea of what Geoscientists do at work.	2.97	2.97	0.819
I would be proud to have a career in the Geosciences.	3.26	3.07	0.062
I think it would be hard to find a job in the Geosciences	3.18	3.1	0.386



Minority students reported knowing fewer people with a career in geosciences ($\chi^2 = 5.83$, $p = .016$) and being able to name fewer scientists on television ($\chi^2 = 11.587$, $p = .001$). The number of students who actually *did* name TV scientists and geoscientists was close to what one might expect based on their relative frequency in the sample. TV Geoscientists named were primarily weathercasters for both groups, but minority students were more likely to name a weathercaster as a scientist. Only Caucasian students named storm chasers as television scientists and geoscientists.

