

## Geology Fieldwork at The Fan

### By Isabelle Febvre and Emelie Frojen

Year one, block one, day one of class at Colorado College, and we are already getting our hands dirty. Our professor, Christine Siddoway, greeted us first-year students eagerly and told us to get our sun hats and tennis shoes, and to get ready for an active field afternoon at our study site at The Fan. Confused glances were exchanged across the room as we thought, *this is our first day of college?*, but Christine's enthuse was contagious. Our trek began at 1:00pm when the 18 of us – 16 students plus the professor, Christine, and the para-professor, Dirk Rasmussen – piled into two glossy, white vans with tinted windows that looked like they were build to endure James Bond missions. Our first trip to The Fan provided a window for us to see what learning on the block plan was truly like. In groups of four, our geology class explored the alluvial fan, a geological feature at the base of Cheyenne Cañon Mountain covered in opaque, pink gravel with sloping walls leading into the fan. With little instruction and lots of curiosity, our class of novice geologist witnessed an active geological feature and were instructed to figure out what happened in the area and why.

The afternoon and the following day consisted exploration, observation, data collection, and lots of sun blocking. Trees at the base of the fan seemed buried under layers of cobble as evident by the lack of showing root. A few broken branches scattered around the base of the fan were stripped of bark and pointing downward. Mini channels, no more than a few inches in width and depth, ran down the inside of the structure. Further up the fan, the walls grew taller, reaching up over our heads in some areas and exposing soil, rock, and roots. The ravine curved in some areas and sloped steep and straight in others. The dimensions, rock sizes, and mini channels all varied, but we diagnosed the color and type of rock to be consistent. By the end of those two days, we'd developed a few different comprehensive hypotheses that weren't too far off! Torrential rainfall had created dynamic channels of all sizes that eventually open and pour into the shallow and wide base of the alluvial fan. The floods rapidly carved out the streams and channels, deposited gravel at the base of the fan and around the pines, and eroded the rounded rocks. Maybe we wouldn't be so novice for long!

Just a little over a week after our investigation at the fan, Colorado Springs residents woke up to backyards, homes, and roads that had been flooded and closed during early hours of the morning. Creeks almost instantly turned into rivers that were roaring downstream, moving boulders, and overflowing into surrounding communities. Our plans for the class that day rapidly changed! Our original plan of an all-day field trip to Denver and Golden to perform fieldwork and attend a lecture given by our professor at the Colorado School of Mines was canceled due to the severe weather. When the class met later on that morning, we unanimously voted to return to The Fan to see our hypotheses in action! Back into the two James Bond vans we eagerly headed back to our study site. By the time we arrived that morning the gushing water was already gone, but it did leave spectacular evidence showing what occurred earlier on the morning of September 12<sup>th</sup>. Carved out walls and channels, eroded and tumbled rock, and newly

exposed roots were all over The Fan. Travelling up the fan we got our hands dirty once again while experimenting with clay/silt and discovering sediment transportation. Further up the channel we were stunned at how deep the study site has gotten. Two student, Greg Sayles and Rayna Nolen, gave perspective to exactly how deep the channel has reached.



The hands on study continued through out the rest of the day. We returned to our professor's house to view her creek-turned-river. The change from the first time we saw her backyard was immense. Large rapids were moving huge boulders, and all of this occurring right before our eyes in her backyard! Christine had a rain gage that increased from less than inch to seven inches over night! We were able to witness first hand the study of sediment transportation in high precipitation events. We continued the learning experience at red rocks! A short lecture was given there followed by the study of the mineral deposit in the sedimentary rocks.





All of our excitement poured over into the night, so we took Christine up on her offer to take the 16 of us to a rap/ written word performance by a fellow Colorado College Professor! The rain continued to pour through out the night, and after the performance, we were all thinking the same thing- The Fan. Disregarding our original plan to return to campus we headed to see our site in action at 9:30 at night! Soaking wet with smiles on our faces, the entire class was in awe of this geological process. Water was transporting sediment everywhere and we were able to witness it. The first two week of the geology FYE showed us first year student what building on the block truly means.