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Redesigning field training to provide an informative, safe, and even fun experience for first year students at the University of Cape Town, South Africa.

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South Africa has an almost unparalleled geological record, spanning from the early Archaean and the first traces to life on earth, right through to the Quaternary and the evolution of our own prehuman relatives. The University of Cape Town (UCT) is consistently recognised as the top university in African. Recent articles highlight issues of race and racism in the Geological Sciences[i] and harassment in the field[ii]. Given that our undergraduate cohort reflects the diverse demographics of South Africa, and our long history of excellence, as a department and institution, we are well placed to tackle both issues.

2021 brought the return of some normality to undergraduate teaching, and our department advocated to run in person field trips, organising COVID tests for all participants. We ran a three-day residential field training course for our first-year undergraduates. This trip has the potential to make or break future geologists – a good experience can influence their decision to major in geology. We modified the field guide to include precise locations and timings for all coach journeys and stops, as students commonly report feeling a lack of control on field trips, which can be disorientating, particularly for students who are anxious or have little travel experience. We included stops with toilet facilities at regular intervals and ensured students were aware of when the next rest break would be. This is important for female students who, worldwide, report finding the absence of facilities in the field distressing, sometimes forcing them to make unhealthy decisions (not changing menstrual products or intentionally becoming dehydrated[iii]). We provided free menstrual products and informed students that they could help themselves discretely as needed. We provided all meals, including lunch, to relieve financial stress for students living in catered residences, for whom field trips constitute an additional expense.

We made pedagogical changes to encourage student engagement and empowerment. Students were asked to research key topics in advance, and then present them in the field. We also reduced the number of stops and spent longer at each one, giving students time to make their own observations and interpretations before a group discussion. This improved student engagement and encouraged peer-to-peer learning. It also helped to empower the students and break down the model of field trip leaders (who are mostly White) being a fountain of knowledge and students being the “sponges”. Overall, even the COVID adjusted version of the excursion was highly

successful, as gauged by anonymous student feedback. By the time this meeting takes place, we will have a sense of how many of these students choose to continue into second year.

[i] Dutt, K. Race and racism in the geosciences. *Nat. Geosci.* **13**, 2–3 (2020). <https://doi.org/10.1038/s41561-019-0519-z>

[ii] Clancy KBH, Nelson RG, Rutherford JN, Hinde K (2014) Survey of Academic Field Experiences (SAFE): Trainees Report Harassment and Assault. *PLoS ONE* 9(7): e102172. <https://doi.org/10.1371/journal.pone.0102172>

[iii] Greene, S., Ashley, K., Dunne, E., Edgar, K., Giles, S., & Hanson, E. (2020, January 9). Toilet stops in the field: An educational primer and recommended best practices for field-based teaching. <https://doi.org/10.31219/osf.io/gnhj2>