



Welcome to the very first issue of Outcroppings

Our mission, as the department of Earth Science, is to increase understanding of our planet and environment. With this magazine, we hope to serve as the pipeline through which basic and applied scientific knowledge is disseminated to the broader community. There is a need for intimate dialog between Earth scientists and society. Problems in the natural world are fundamentally challenging. Natural systems are complex because there are so many interconnected components, with positive and negative feedbacks. Studying natural systems requires dealing with incomplete data sets, uncertainty, and complex systems. Such complexities are enough to turn most people away, but the reality is that complexities are the norm, not only in nature, but in how societies and economies operate. As Earth and environmental scientists, we excel at tackling open-ended problems and examine it from the perspective of a larger interconnected Earth system, helping us predict and anticipate new problems.

While many of our students have gone on to be academics or leaders in the energy industry, others have gone on to become medical doctors, government policy advisers, community organizers, or start their own businesses, fields of specialty that all require being comfortable with complex and evolving systems. Wherever students of Earth Science go, they take with them the much desired combination of critical thinking skills and the ability to see the big picture.

One goal of this magazine is thus to show examples of how Earth scientists think and how science is done. We will have articles focused on basic research. But unlike typical scientific articles, where only the answer is presented and the scientific process is portrayed as a mechanical template to be followed, we hope to provide insight into the actual process, the real, uncensored story of how science gets done. What were some of the mistakes or challenges? What were the “aha” moments? What were all the unexpected outcomes that turned out to be far more interesting than the original hypothesis or entirely changed the course of one’s work? Who were the people that inspired one’s ideas?

Another goal is to survey examples of how Earth scientists have gone on to influence our society. We will have first person accounts and interviews of Earth scientists who have continued on nontraditional paths. We will also highlight the hobbies or side interests of Earth scientists. Some are artists, skateboarders, musicians, carpenters, writers, gardeners, poets, and much more. Some find themselves in extreme environments, some will be astronauts.

A third goal is to tackle controversial topics from a critical, but balanced and non-partisan way. All real world problems are complex. If we want to understand the origin of continents or how our atmosphere has evolved since the beginning of Earth, we have to recognize that there will be many competing views because the data is incomplete. Similarly, if we want to find a solution to our world’s energy problems while at the same time find a way to mitigate negative environmental impacts, we have to accept that there are no perfect solutions and that whatever we do, there are risks that we have to evaluate. Solving such complex problems requires an open-minded mentality, where ideas, observations, and criticisms from all interested parties are considered.

We encourage readers to submit feedback and articles for upcoming issues. As we move along, the content and goals of the magazine will evolve as we learn from your feedback. We hope this is the beginning of a unique, interactive dialogue between Earth science and the community.

From the editors,

Cin-Ty Lee



Larisa LaMere ('16)

