October 22, 2016

Department of Applied Mathematics
University of Colorado at Boulder

To whom it may concern,

I'd like to matriculate into the department of applied mathematics. As I imagine myself preparing a thesis with a geophysical slant, I appreciate the department's available coursework in dynamic systems. I also appreciate it's computational strength.

Last year I researched Fuchsian differential equations and igneous rock formation. For the former, I used results from Galois theory to find spanning sets of the different solution spaces. For the latter, I classified plagioclase feldspar granules by the thermal conditions at the time of their cooling.

I summarized my conclusions with respect to Galois theory on a poster presented at my college's student research conference. With respect to granules, I finished my work by traveling to Scotland with friends. On June 4^{th}, I pushed my heels and palms into rough, buoyantly exposed, conglomerates of plagioclase, peridotite and olivine for to climb up the side of Glen Sligachan. I'd plan to get out just as much in Colorado.

In pursuit of a master's degree, I'll approach answers to questions such as

- How might we irrigate to conserve significant amounts of water?
- Can we prevent contaminants from diffusing across an ecosystem?
- Which composition of local materials has optimal properties?

For a career, I imagine creating safe places for people, plants and animals to live. To grow from curiosity towards this vocation, I expect to find a professional setting at CU Boulder where I may join a research group in geophysical applied mathematics.

Presently, I'm a clerk for for a social service office in Houston. As a daily practice, I organize and relay important information in *plain language*. This allows me to speak evenly with insurance companies, medical providers, my coworkers and our clients. I will bring this practice as a discipline to CU Boulder.

Under your consideration,

Colton Grainger

P.S. I am applying for a teaching assistantship. As I have worked through advanced calculus manuscripts, I feel confident to bring students through any semester's curriculum of calculus. I am an excellent candidate for an assistantship because I have experience as a peer tutor and course grader. I am also skilled at typesetting explanations and offering clear demonstrations with chalk and blackboard.