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Deep Springs College
Herbert Reich Chair of Natural Science Search

Dear members of the search committee,

I am writing to apply for the Herbert Reich Chair of Natural Science. I am currently an assistant professor in the Biology Department at the University of Massachusetts Boston with a strong teaching, mentoring, and research record. I carry deep love for biological and human diversity, and I strive to center my work so that I serve societal and environmental needs.

During my junior year of high school, my college counselor handed me a book titled *Cool Colleges: For the Hyper-Intelligent, Self-Directed, Late Blooming, and Just Plain Different*. In it I found Deep Springs. Attracted to the mission and seeking a life in service to humanity, I was disappointed that my gender barred me from attending. I ended up at Reed College, where I thrived in an environment that fostered critical thinking, community trust, and intellectual breadth. I deeply value the skills and perspectives I gained there, and I would love to bring them to serve the Deep Springs pillars of Academics, Labor, and Self-Governance.

Academics: My research seeks to understand the proximate causes and ultimate drivers of trait variation: why and how are individuals different from each other? Answering this question requires integrating approaches from evolutionary biology, ecology, genetics, computer science, and engineering. My work investigates crops and other useful plants to benefit global human needs. I use field observations and experiments, genetic sequencing, and scientific computing. To date I have published 22 peer-reviewed articles, with an h-index of 18, across fields from evolutionary genomics to applications in agriculture and biofuels.

The main research areas I would bring with me are: (1) metal tolerance and agricultural potential in pickleweeds (*Salicornia*), (2) crop breeding and digital measurement methods of stress tolerance in rice, and (3) adaptation in a new Californian species of wild sunflower. At my current institution I have co-developed 19 independent projects on these topics with undergraduate students. All of the students I have mentored at UMass Boston come from backgrounds underrepresented in the sciences, in part the result of deliberate recruitment by me and in part reflecting the demographics of the university (a public, regional, and urban

research institution). I value diverse perspectives in enriching the quality of scientific research and learning environments.

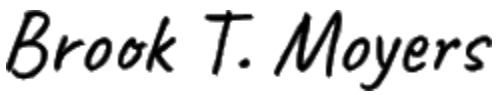
Labor: I grew up in a communal environment of ~45 people where all community members were expected to pitch in their labor, including children. I served in the kitchen, prepping and cleaning, as a runner and logistical coordinator, and in animal and plant care. I am an experienced gardener, maintaining an annual production of fruit, vegetables, and herbs even in my current urban environment. I spent five seasons running large-scale agricultural experiments with sunflowers in Vancouver, Canada; Winters, California; and Sinton, Texas, and am happy to spend long, hot days in a field. I am also an experienced horse rider who worked two summers at a riding school in Malibu, California, although I haven't ridden much as an adult. I value competence and labor in others: my husband is the executive chef at a Boston-area school, where he serves 1,400 lunches daily. We both grew up in the desert Southwest and have lived at high elevation. I believe that we would be content members of and useful contributors to the Deep Springs community and its work.

Self-Governance: I bring evidence-backed techniques to teaching and my teaching and mentoring are a collaborative process. As a Carpentries (https://carpentries.org/) volunteer instructor I regularly teach computational and data management skills with collaboratively developed lesson material, largely to self-motivated learners from all career stages. At UMass Boston I developed a first-year seminar on Plants & People, an honors seminar on Genomic Data Science, and hands-on upper-level courses on Ecological Genomics and Population Genetics. These are small, seminar-style courses with substantial student input on content and structure and high expectations for student participation, a model I would bring to my teaching at Deep Springs. My student evaluations are very strong, reflecting my dedication to creating an inclusive, interactive, and engaged classroom environment. This year, I was awarded the university-wide teaching award, the Manning Prize.

Beyond teaching and mentoring, I have contributed to self-governing institutions my entire life, from my childhood community (where everything was decided by group consensus) to my work with mutual aid societies today. The Deep Springs model of student governance is one with which I am familiar and of which I am strongly supportive.

Thank you for considering my application, and I look forward to hearing from you.

Sincerely,



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