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Theme: Development of a field station for research and teaching

The idea: We propose an investment that could catapult Rice's capacity for research, teaching, and outreach in the environmental sciences: an off-campus field station. Field stations are highly valued components of environmental science programs at our peer institutions (e.g., Stanford: <http://jrpbp.stanford.edu/>, U. Chicago: <http://pondside.uchicago.edu/ee/facilities/WW.shtml>, Princeton: <http://www.princeton.edu/eeb/facilities/stony/>, Duke: <https://biology.duke.edu/facilities/field-station>). Like these stations of our peer institutions, we envision a Rice University station that includes housing, classrooms, laboratories, and land for field-based research.

Field stations provide outdoor laboratories for environmental research and enhance the recruitment and retention of faculty with field-based research programs. They also provide a unique setting for hands-on learning experiences for undergraduates and outreach to the general public. A Rice University field station would advance current Rice initiatives in the environment, such as the Shell Center for Sustainability and the Energy and Environment Initiative, and promote new research in the broadly important and Houston-relevant fields of global change biology and sustainability science. It could also catalyze new research collaborations and make Rice competitive for large training grants. Finally, a field station with residential facilities could be used by many disciplines as part of student training. Peer institutions with field stations frequently use them for new-student experiential learning events to introduce freshmen to ways of knowing beyond traditional classroom lectures.

Current strengths in this area: The lack of *any* off-campus facility for field-based research is a gaping hole in our environmental science programs, and leaves us lagging behind our peers in fast-moving research areas. As a result, our faculty must improvise to find suitable locations for field-based research and teaching. However, current scientific strengths in fields that would use these facilities are tremendous. This is particularly true in BioSciences, Civil and Environmental Engineering, BioEngineering, and Earth Science, where many faculty members run externally funded, field-based research programs. Notably, the availability of a field station would advance many research agendas simultaneously. For example, many of the other research themes put forward by IBB faculty could benefit from the availability of a field station.

Required investment: In the long-term, this vision can only be realized with investment in new facilities and infrastructure, potentially through collaboration with local land management partners. Similar recent stand-alone institutional investments have been on the order of \$5 million, but Rice may not need to accomplish this alone. Many potential partners exist within the local community. In one example, the private Katy Prairie Conservancy maintains many nearby pieces of land, some with existing residential space. Additional potential partners exist as well.

In the short-term, smaller investments could be made to promote field-based research and teaching in the environmental sciences. For example, small grants for faculty and graduate students to conduct research at the field stations of peer institutions could alleviate some of the logistical burdens on Rice's field-based scientists.