

Eisen Experiential Learning Endowment Proposal

“Hosting a 2018 IceCube Masterclass at UNF”

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1. **Project Overview.** IceCube is the world’s largest neutrino detector, encompassing a cubic kilometer of ice at the South Pole. We request funds to host one of ~15 IceCube “masterclasses” at UNF in Spring 2018. Funds will be used to bring a speaker from the IceCube collaboration who has spent time working at the pole and to provide lunch for attendees to the masterclass.

2. **Project Description.** IceCube is a particle detector which uses the underground ice at the South Pole to detect nearly massless subatomic particles called neutrinos. IceCube searches for neutrinos from the most violent astrophysical sources: events like exploding stars, gamma-ray bursts, and cataclysmic phenomena involving black holes and neutron stars. The IceCube collaboration operates the world’s first astrophysical neutrino observatory. More than 300 scientists from across the world work on the project, mostly concentrated at the Univ. of Wisconsin and Penn State in the U.S.

We propose to host one of the official IceCube masterclasses at UNF¹. This is an opportunity for students of both UNF and local schools to learn more about our universe and meet IceCube scientists. Part of the masterclass will include video conferencing with scientists who are currently living and working at the South Pole on IceCube. This day-long event is targeted at local high school students, teachers and UNF students (not just physics majors). Introductory presentations are given in the morning, following by lunch with physicists and an afternoon performing an analysis of IceCube data. Presentations will be given by the visiting speaker and

¹ see the website: <https://masterclass.icecube.wisc.edu>

by UNF Physics faculty. Both prospects have recently joined the IceCube-Gen2 collaboration working to expand the IceCube neutrino observatory.

3. Student Impact. The expected attendance is 50-100 people. This is expected to include the majority of the more than 35 astrophysics majors at UNF, as well as dozens more HS students who may be persuaded to attend UNF.

4. Project Budget. We request \$1,500 in total, which includes funds for refreshments at the masterclass and travel for one speaker from the IceCube collaboration who has spent time at the South Pole. The itemized budget is as follows:

\$400 hotel for 3 nights

\$600 airfare

\$150 per diem for speaker

\$300 food catering for masterclass

\$50 for advertising and printing costs

The speaker will arrive on a Thursday and depart on a Sunday, spending Friday meeting with UNF faculty and students and Saturday helping to run the masterclass.