Budget Justification

Iowa State University

Labor costs for participating faculty and staff are projected costs based on actual monthly salaries

for the university fiscal year ending 6/30/24.

An escalation factor of 3% is applied to all salaries and wages each year of the project. Iowa State University operates on a fiscal year beginning July 1 and ending June 30.

**Senior Personnel ($15,223.08)**

PI Thatcher will direct and oversee the project and serve as an advisor and mentor for undergraduate students at Iowa State University (ISU). One month of salary (1.00 month) is requested for Dr. Thatcher in years one and two and half a month salary (0.50 month) in year three (current annual academic salary $70,493).

Year 1 = $5945.47, Year 2 = $6123.83, Year 3 = 0.50\*$6307.55

Total = $15,223.08

**Other Personnel ($5,304)**

One undergraduate laboratory research assistantship ($13/hour for a total of 136 hours per year) is requested for the first two years to help prepare and run samples in the ISU Stable Isotope Laboratory. Undergraduate researchers will develop capstone/thesis projects, which will be supervised by PI Thatcher.

136 hours/year \* $13/hour (plus 3% yearly increase) \* 2 years

Year 1 = $1768.00, year 2 = $1821.04

Total = $3509.04

**Fringe Benefits**

At Iowa State University, fringe benefits are specifically identified to each employee and are

charged individually as direct costs. These costs are budgeted as a percentage of an

individual’s salary based on labor category. Current rates for applicable labor categories are as

follows:

Profession & Scientific (P&S) 37.5%

Undergraduate Students 1.8%

**Other Direct Costs ($10,825)**

**Materials and Supplies ($8025)**

Materials and supplies costs are to cover laboratory supplies (sample vials, archival supplies, isotopic standards, compressed gases [including ultra-pure helium], consumable chemicals, filaments and source parts, computer supplies, pump fluids, micro-milling bits) associated with isotope analyses of the stalagmite powders in years one and two. We anticipate measuring at least 760 calcium carbonate samples for δ18O and δ13C. For larger increments on each shell, they will be measured using a computer-guided micromill (MM2) at Iowa State University and sampled for δ18O and δ13C. We will take shells to the University of Wisconsin in Madison to use the WiscSIMS for smaller increments (<50μm) to be sampled for δ18O and δ13C. The WiscSIMS device can measure ~120 samples in 12 hours (1 day) for a total of ~360 samples on the WiscSIMS device and 300 samples at Iowa State University.

* 300 carbonate stable isotopes \* $8.75/sample = $2625
* 3 days of time on the WiscSIMS for smaller increments = 3 days\* $1800/day = $5400

**Radiocarbon Costs ($2800)**

Funds are requested in years one [5 samples] and two [5 samples] for a total of 10 radiocarbon analyses ($280 per sample) to be measured at the National Ocean Sciences Accelerator Mass Spectrometry Facility (NOSAMS) at Woods Hole Oceanographic Institute.

**Indirect Costs ($xxx)**

Coming soon