

MISG 2025 GRF Budget Justification

A. Personnel:

Position Title Name	Year 1 Salary % of Time # of Mos Amount	Year 2 Salary % of Time # of Mos Amount	Request	Cost Share
PI: Connor O'Loughlin Graduate Research Assistant	\$29,979 34.6% 4.16 mos \$10,432	\$31,479 34.6% 4.16 mos \$10,493	\$16,518	\$4,407
PI: Connor O'Loughlin Hourly Graduate Student	\$22,168 30.8% 3.69 mos \$10,432	\$24,317 30.8% 3.69 mos \$11,425	\$21,857	
Co-PI: Dr. Trista Vick-Majors	\$87,714 1.3% .15 mos \$1,499	\$87,714 1.9% .23 mos \$2,414		\$3,913

Personnel Justification:

PI – Connor O’Loughlin: This position oversees the general operation of the project and is responsible for executing fieldwork and data analysis. Responsibilities include sample materials acquisition, sample collection, data analysis, data formatting, and data interpretation. This position is responsible for making sure data is made available and that the project meets all deadlines and relates to all program objectives. Connor O’Loughlin will work as a Graduate Research Assistant during the spring of Y1 and Y2, and as an hourly graduate student during the summers of Y1 and Y2, for a total of \$42,782 over 24 months. Co-PI, Dr. Vick-Majors will advise the PI during the project for a total of \$3,913. The total requested amount is \$38,375 with cost share of \$8,320. These rates include a 5% annual escalation for stipends and a 5% escalation for tuition costs for budget estimating. A 5% increase is also included for the Co-PI for year 2 for standard budget estimating.

B. Fringe:

Category	Regular Non-Student Employees	Graduate Students
FICA	7.6%	0.0%
TIAA and Fidelity Retirement	7.7%	0.0%
MPSERS (State Retirement)	0.2%	0.0%

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Health Care	18.3%	0.0%
Life, Disability, Unemployment, WC, Other	1.3%	0.0%
VHS and Short Term Disability	3.5%	0.0%
Graduate Student Health Insurance	0.0%	14.7%
Total Fringe Benefit Expenses	38.6%	14.7%

Personnel (Role)	% Rate	Year 1 Salary Fringe	Year 2 Salary Fringe	Request	Cost Share
PI: Connor O'Loughlin	14.7%	\$10,432 \$1,534	\$10,493 \$1,542	\$2,428	\$648
Co-PI: Trista Vick-Majors	38.6%	\$1,499 \$579	\$2,414 \$932	\$0	\$1,511

Fringe Justification:

Michigan Tech will collect fringe benefits at rates approved by the University's federal cognizant agency, the Office of Naval Research.

PI – Connor O'Loughlin: The fringe benefit rate for graduate students is 14.7 % when paid as a GRA. No fringe is requested for hourly pay during Y1 and Y2.

Co-PI – Dr. Trista Vick-Majors: The fringe rate for faculty is 38.6%.

C. Domestic Travel:

Expense Item	Request
Gas - 18 mpg, \$3.20 per gallon, 86 gallons, 1490 miles	\$275
Car Rental – Husky Motors, 3 trips, 1st trip: 4 days total, 2nd trip: 2 days total, 3rd trip: 2 days total; \$95/day rental fee	\$760
Lodging (5 nights @ \$110/night) 3 nights on trip 1 and 1 night on trips 2 and 3.	\$550
Meal Allowance (\$55.25/day)	\$442

Domestic Travel Justification:

Trip 1: The PI will travel from Houghton to Whitefish Bay, MI and Saint Martin's Bay, MI, over 4 days, to begin the incubations and collect samples. There will be two additional trips to the field sites to gather samples. One will be at the midpoint of the incubations, and one final trip to

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terminate the incubations, each being 2 days in duration. A compact SUV will be rented from Michigan Tech Husky Motors and driven to the field sites each trip. Total travel expenses requested are \$2,027. Expenses are based on online rates, GSA for lodging, and historical information.

D. Equipment:

None Requested.

E. Supplies:

Expense Item	Count	Unit Cost	Request
Sterivex Filter	50	\$10.22	\$511.00
60 mL Luer Lock Syringe	2	\$40.95	\$81.90
40 mL Amber vial	72	\$1.37	\$98.64
3 µm filter (47 mm)	100	\$2.45	\$245.00
60 mL Luer slip syringe	2	39.25	\$78.50
25 mm filter holder	2	\$40.00	\$80.00
10 µm PC filter (47 mm)	100	\$1.84	\$184.00
0.7 µm GF/F filter (25 mm)	100	\$2.17	\$217.00
Biolog Ecoplate	2	\$221.40	\$442.80
47 mm filter holder	18	\$96.00	\$1,728.00
50 mL centrifuge tubes	1	\$367.50	\$367.50
12-14 kDa MWCO, 75mm Dialysis tube	2	\$328.00	\$656.00
ZymoBiomics DNA Kit	1	\$319.70	\$319.70
CuSO4 solution	5	\$8.96 (per mg)	\$44.80
Tris[(1-benzyl-1H-1,2,3-triazol-4-yl)methyl]amine	3	\$142.50	\$427.50
Sodium Ascorbate	1	\$126.50	\$126.50
Aminoguanidine	25	\$2.94 (per gram)	\$73.50
Carboxyrhodamine 110 Alkyne	1	\$103.00 (per mg)	\$103.00
L-Azidohomoalanine	5	\$78.80 (per mg)	\$394.00
15 mL centrifuge tubes	1	\$465.50	\$465.50
2 mL centrifuge tubes	1	\$418.48	\$418.48
2 mL centrifuge tubes	2	\$46.33	\$92.66
Universal Dialysis Tubing Closure	16	\$145.80	\$2,332.80

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		Total	\$9,489
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Supplies Justification

All supplies listed will be used for sample collection, processing, and analysis. Each supply item is essential to the study. The prices were obtained from the supplier's website.

F. Contractual:

Service	Request
16S rRNA Analysis – Integrated Microbiome Resource (\$30.00 per sample X 18 samples)	\$540.00
Particulate C & N – AQUatic Analysis Lab (\$6.00 per sample X 6 samples)	\$36.00
Particulate P – AQUatic Analysis Lab	\$37.20
Soluble reactive Phosphorus – AQUatic Analysis Lab (\$6.20 per sample X 18 samples)	\$111.60
DOC/TN – AQUatic Analysis Lab (\$6.65 per sample X 18 samples)	\$119.70

Contractual Justification

A total of \$845 is requested for services needed to meet the project's needs. The following services will be provided by the AQUatic Analysis lab: particulate C, N, & P, soluble reactive phosphorus, and DOC/TN. Integrated Microbiome Resource will provide service for 16S rRNA analysis.

G. Construction:

None Requested.

H. Other direct costs:

Other Budget Items	Year 1	Year 2	Request	Cost Share
Tuition	\$ 12,850	\$ 13,493	\$ 6,826	\$ 19,517

Other Justification

Tuition expenses and fees are requested as a component of Graduate Research Assistant (GRA) compensation. Graduate student tuition for the Spring semesters of 2026 and 2027 totals \$26,343 to support Michigan Technological University's PhD program requirements. A cost-share of

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\$12,850 will be provided by the Great Lakes Research Center in year 1 and \$6,667 by the Department of Biological Sciences in year 2 to off-set total tuition costs. Total support requested in Year 1 is \$0 in Sea Grant funds, and in year 2 is \$6,826.

I. TOTAL DIRECT COSTS:

A total of \$59,990 is requested for direct costs, and \$29,996 is provided in cost share.

Budget Category	Request	Cost Share
A. PERSONNEL	\$38,375	\$8,320
B. FRINGE	\$2,428	\$2,159
C. TRAVEL	\$2,027	
D. EQUIPMENT	\$0	
E. SUPPLIES	\$9,489	
F. CONTRACTUAL	\$845	
G. OTHER	\$6,826	\$19,517
	\$59,990	\$29,996

J. INDIRECT COSTS

No indirect costs are requested.

K. TOTAL DIRECT AND INDIRECT COSTS:

Total direct and indirect costs are \$59,990.

L. COST SHARE:

Budget Category	Year 1	Year 1 Source	Year 2	Year 2 Source
Personnel	\$1,906	Department of Biological Sciences	\$6,414	Department of Biological Sciences
Fringe Benefits	\$639	Department of Biological Sciences	\$1,520	Department of Biological Sciences
Other - Tuition	\$12,850	Great Lakes Research Center	\$2,148	Great Lakes Research Center
Other - Tuition	\$0	N/A	\$4,519	Department of Biological Sciences
Total Cost Share	\$15,395		\$14,601	
Total Cost Share by Source	\$14,998	Great Lakes Research Center	\$14,998	Department of Biological Sciences

Cost Share Justification

Cost share will be provided for a portion of the GRA's stipend (\$4,407), faculty academic time (\$3,913), the associated fringe benefits (\$2,159), and a portion of tuition (\$19,517) for a total of \$29,996. Cost share will be split between the Department of Biological Sciences and the Great Lakes Research Center.
