***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% |
| 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 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 |
|  |  | **Total** | **$9,489** |

***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 $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.