***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 | $16,925 | $4,000 |
| 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 ($10,432 and $6,439), during the summer of Y1 ($10,432), and during the summer in Y2 (hourly, total $11,419.80) for a total of $38,728 over 24 months. Co-PI, Dr. Vick-Majors will advise the PI. A 5% increase the PI and Co-PI are included for year 2 for standard budget estimating.

***B. Fringe:***

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **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 | $2,488 | $588 |
| 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) | $550 |
| Meal Allowance ($55.25/day) | $442 |

***Domestic Travel Justification:***

The PI will travel from Houghton to Whitefish Bay and Saint Martin’s Bay, over 4 days, to begin the incubations and collect samples. There will be an additional trip to the field sites to gather samples at the midpoint of the incubations, and one final trip (for a total of three trips) to terminate the incubations, each being 2 days in duration. A compact SUV will be rented from Husky Motorpools and driven to the field sites each trip. Expenses are based on online rates and GSA for lodging.

***D. Equipment:***

Not applicable.

***E. Supplies:***

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| SUPPLIES | | | | Total$ | | | 9488.54 | |
| Item | Amount needed | Cost | Count | | Unit Cost | Amount | | |
| Sterivex Filter | 18 | 511.00 | 50 | | 10.22 | 511.00 | | |
| 60 mL Luer Lock Syringe | 18 | 40.95 | 25 | | 1.64 | 81.90 | | |
| 40 mL Amber vial | 18 | 98.40 | 72 | | 1.37 | 98.40 | | |
| 3 𝛍m filter (47 mm) | 18 | 245.00 | 100 | | 2.45 | 245.00 | | |
| 60 mL Luer slip syringe | 18 | 39.25 | 25 | | 1.57 | 78.50 | | |
| 25 mm filter holder | 18 | 40.00 | 10 | | 4.00 | 80 | | |
| 10 𝛍m PC filter (47 mm) | 18 | 184.00 | 100 | | 1.84 | 184.00 | | |
| 0.7 𝛍m GF/F filter (25 mm) | 18 | 217.00 | 100 | | 2.17 | 217.00 | | |
| Biolog Ecoplate | 18 | 221.400 | 10 | | 22.14 | 442.80 | | |
| 47 mm filter holder | 18 | 96.00 | 1 | | 96.00 | 1,728.00 | | |
| 50 mL centrifuge tubes | 36 | 367.50 | 500 | | 0.74 | 367.50 | | |
| 12-14 kDa MWCO, 75mm Dialysis tube | 10 m | 328.00 | 5 m | | 65.60 | $656.00 | | |
| ZymoBiomics DNA Kit | 1 | 319.70 | 50 | | 6.40 | 319.70 | | |
| CuSO4 solution | 0.056 g | 44.80 | 5 g | | 8.96 (per mg) | 44.80 | | |
| Tris[(1-benzyl-1H-1,2,3-triazol-4-yl)methyl]amine | 0.60 g | 142.50 | 250 mg | | 0.57 (per mg) | 427.50 | | |
| Sodium Ascorbate | 2.23 g | 126.50 | 100 g | | 1.27 (per gram) | 126.50 | | |
| Aminoguanidine | 1.24 g | 73.5 | 25 g | | 2.94 (per gram) | 73.50 | | |
| Carboxyrhodamine 110 Alkyne | 0.0016 𝛍g | 103.00 | 1 mg | | 103.00 (per mg) | 103.00 | | |
| L-Azidohomoalanine | 2.79 mg | 394.00 | 5 mg | | 78.80 (per mg) | 394.00 | | |
| 15 mL centrifuge tubes | 18 | 465.50 | 500 | | 1.07 | 465.50 | | |
| 2 mL centrifuge tubes | 1188 | 418.48 | 1000 | | 0.48 | 418.48 | | |
| 2 mL centrifuge tubes | 1188 | 46.33 | 100 | | 0.46 | 92.66 | | |
| Universal Dialysis Tubing Closure | 160 | 145.8 | 10 | | 14.58 | 2332.80 | | |
|  | | | | |  | Requested | | Cost Share |
|  | | | | |  | 6,365 | | 3,124 |
|  |  |  |  | | Total | $9488.54 | | |

***Supplies Justification***

All supplies listed will be used for sample collection, processing, and analysis. Each supply item is essential to the study. The “cost” column is the price listed on the supplier’s website, with the count provided in the “count” column. The Unit cost is the cost divided by the count, and the “Amount” column shows the cost needed to meet the project’s needs.

1. CONTRACTUAL - NONE REQUESTED
2. CONSTRUCTION - NONE REQUESTED
3. TUITION

|  |  |  |
| --- | --- | --- |
| TUITION | Total$ | 4,737 |
| Connor O’Loughlin | 4,737 | |

A total of $4,737 is requested to go to tuition for summer of Y1.

1. OTHER

A total of $845 is requested for services in Y2.

|  |  |  |  |
| --- | --- | --- | --- |
| Other | Total$ | 843.5 | |
| 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 6 samples) | 111.60 | | |
| DOC/TN – AQUatic Analysis Lab ($6.65 per sample X 18 samples) | 118.70 | | |
| Total$ | | | 843.5 |

***Other Justification***

A total of $845 is requested for services.

1. TOTAL DIRECT COSTS

A total of $55,974 is requested for direct costs.

|  |  |  |  |
| --- | --- | --- | --- |
| Total Direct Costs | | Total$ | 60,000 |
| A. | PERSONNEL | 41,270 | |
| B. | FRINGE | 2,488 | |
| C. | TRAVEL | 2,027 | |
| E. | SUPPLIES | 6,365 | |
| H. | TUITION | 9,493 | |
| I. | OTHER | 845 | |
| Total$ | | 60,000 | |

J. TOTAL INDIRECT COSTS

No indirect costs are requested.

K. TOTAL DIRECT AND INDIRECT COSTS

Total direct and indirect costs are $60,000.

L. COST SHARE

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Cost Share | | | Total$ | 30,000 |
| Category | | Provider | Amount | |
| A. | Personnel | GLRC | 7,913 | |
| B. | Fringe | GLRC | 2,099 | |
| E. | Supplies | GLRC | 3,124 | |
| H. | Tuition | Biological Sciences ($15,000) and GLRC ($1,850) | 16,850 | |

***Cost Share Justification***

Cost share is committed in the form of tuition ($12,850), stipend for GRA spring Y2 ($4,000), supplies ($2,333), and faculty academic time ($1,449 for Y1 and $2,414 for Y2) for a total of $30,000. Cost share will be provided by the Biological Sciences department and the Great Lakes Research Center.