

**Environment and Natural Resources Trust Fund**

# 2021 Request for Proposal

## **General Information**

**Proposal ID:** 2021-141

**Proposal Title:** ESTEEM (Earth Science Teachers Environmental Education Matters)

## **Project Manager Information**

**Name:** Lee Schmitt

**Organization:** Minnesota Science Teachers Association

**Office Telephone:** (952) 435-1879

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## **Project Basic Information**

**Project Summary:** Earth Science Teachers Environmental Education Matters (ESTEEM) will provide statewide professional development for science teachers in Earth and Environmental Science content and pedagogy to strengthen environmental education in Minnesota schools.

**Funds Requested:** $582,000

**Proposed Project Completion:** 2023-08-31

**LCCMR Funding Category:** Environmental Education (C)

## **Project Location**

**What is the best scale for describing where your work will take place?** Statewide

**What is the best scale to describe the area impacted by your work?** Statewide

**When will the work impact occur?** During the Project and In the Future

## **Narrative**

**Describe the opportunity or problem your proposal seeks to address. Include any relevant background information.**

With adoption of the new 2019 Minnesota Academic Standards in Science, all 6th grade teachers in Minnesota will now be asked to teach earth/environmental science to their students using a new phenomenon-based approach to instruction. Sixth-grade teachers are being asked to teach science subject matter in which most have little or no background. In addition, high schools will need to develop and implement new earth/environmental science courses. These high school teachers of science, especially in rural districts, will need to find graduate-level earth/environmental science courses to procure a 9-12 Earth and Space Science teaching license.

Now is the opportune time for a statewide initiative to prioritize and strengthen earth/environmental education in all our schools. Environmental education in Minnesota needs stimulus, focus and rejuvenation; teachers need earth/environmental science training; and the implementation of the new 2019 science standards provides the impetus. All the quality work and successes of LCCMR-funded programs will have little longevity if we do not develop and maintain a citizenry educated in the richness, value and fragility of Minnesota’s natural resources.

The ESTEEM program will meet this challenge and enhance earth/environmental education in schools throughout Minnesota.

**What is your proposed solution to the problem or opportunity discussed above? i.e. What are you seeking funding to do? You will be asked to expand on this in Activities and Milestones.**

Solving this urgent need for statewide professional development in Earth and Environmental Sciences for Minnesota teachers requires an experienced team of educators and scientists. Organized and led by MnSTA, geologists from MSU-Moorhead, Mankato, St. Cloud, Winona, and the University of Minnesota will team with experienced Earth Science educators to provide 13 ESTEEM Institutes over three summers (2021-2023) in four different regions of the state, serving up to 310 Minnesota 6th grade and high school science teachers. Five content-focused online courses offered during the same timeframe can serve another 840 teachers, together serving up to 1150 teachers and enriching earth/environmental education for an estimated 56,000 Minnesota students.

Institutes will include review of key earth/environmental science concepts addressed in the standards, the new phenomenon-based approach to teaching science, lab and fieldwork, sharing resources, and collegial planning for classroom implementation.

Understanding the detail and complexity of Earth’s systems is crucial to the future of our economy and our planet, and having teachers knowledgeable and confident in Earth and Environmental Science topics is essential for quality earth/environmental education.

ESTEEM will create a statewide emphasis in environment education in 6th grade and high school earth science classrooms across Minnesota.

**What are the specific project outcomes as they relate to the public purpose of protection, conservation, preservation, and enhancement of the state’s natural resources?**

We cannot protect what we do not understand. Preserving Minnesota’s natural resources cannot be accomplished without fundamental knowledge of geology, hydrology and climate taught in our schools by informed, confident science educators.

To improve the quality of earth/environmental education, ESTEEM will:
1) Increase teacher content knowledge in earth/environmental sciences with direct emphasis on Minnesota’s water, air, land, minerals, and climate.
2) Increase teacher skills in designing and facilitating phenomenon-based instruction.
3) Increase curriculum time devoted to science and student-directed investigations.
4) Increase teacher confidence and enthusiasm for teaching science.
5) Increase outdoor learning experiences for students.

## **Activities and Milestones**

### **Activity 1: ESTEEM Planning and Coordination**

**Activity Budget:** $2,000

**Activity Description:**Objective: Design and market three teacher institutes for July/August 2021, the summers of 2022-23, and five online courses.

MnSTA and our five university partners have been discussing elements of the ESTEEM program for over a year. For Activity 1, planning will move aggressively to setting specific course content that directly targets benchmarks in the new state science standards, finalizing course syllabi, assigning co-instructors, determining phenomenon-based teaching strategies to be modeled for teachers, designing evaluation instruments, choosing field sites, finalizing locations and dates, and detailing/confirming logistics for the institutes and online courses.

Due to the urgent need for this professional development, the ESTEEM Project Team has agreed to complete planning and waive any expenses so institutes can begin in mid-July and August of 2021. Continual planning for modifications in years two and three is budgeted at $2000.

Marketing during the 2020-21 school year will be done at no cost by MnSTA and MESTA through their listservs and webpages. District science leaders in all Minnesota schools will be contacted to direct market ESTEEM to their science teachers. MnSTA will handle online registrations.

When funding becomes available on July 1, 2021, ESTEEM will be ready to go.

**Activity Milestones:**

|  |  |
| --- | --- |
| **Description** | **Completion Date** |
| Complete detailed agendas for summer institutes. | 2020-10-31 |
| Locations/instructors determined, contacted and confirmed for one high school and two 6th grade institutes in July/August 2021. | 2020-11-30 |
| Marketing and application designed, tested and posted online. | 2020-12-31 |
| Online course syllabi completed and reviewed. Online platforms ready. | 2021-03-31 |
| Logistics, participants and supplies confirmed. | 2021-05-31 |

### **Activity 2: Fulfillment of ESTEEM Professional Development Summer Institutes and Fall/Spring Online Courses**

**Activity Budget:** $571,000

**Activity Description:**Objective: Deliver 13 high-quality, environmentally-focused summer professional development institutes and up to 21 fall/spring online courses over three years.

In July 2021, one cohort of 20 high school science teachers will attend an 8-day institute at MSU-Moorhead while two, 5-day 6th grade teacher institutes, serving 30 teachers each, will run concurrently in two different regions of the state.

In fall 2021-23 and spring 2022-23, five online courses – Earth Essentials, ES/EE Advanced Topics, Minnesota Geology and Resources, Meteorology, and Astronomy – will be available for up to 240 teacher participants each year.

In early summer 2022, the first high school cohort will return to MSU-Moorhead for a final eight days of content and pedagogical training. Later that summer a new cohort of 20 high school teachers will begin their two-year program at MSU-Mankato. ESTEEM will also host three 6th grade institutes (30 participants each) in three different regions of the state.

In summer 2023, the second high school cohort will finish their program, and ESTEEM will host four 6th grade institutes in four regions.

ESTEEM will serve as many as 310 teachers in 13 programs in summers 2021-23 and up to 840 teachers in online courses.

**Activity Milestones:**

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| --- | --- |
| **Description** | **Completion Date** |
| Complete three, first-year summer programs for up to 80 teachers of science. | 2021-08-31 |
| Complete five summer programs for up to 110 additional teachers. | 2022-08-31 |
| Complete 21 online sections, serving 40 teachers each, during the falls and springs of 2021-23. | 2023-05-31 |
| Complete five summer programs for up to 120 additional teachers. | 2023-08-31 |

### **Activity 3: Evaluation and Reporting**

**Activity Budget:** $9,000

**Activity Description:**Objective: Collect data from ESTEEM participants and their students to determine the effectiveness of the program and its impact on earth/environmental education in Minnesota.

Teacher Tests: Standards-based evaluative instruments will be developed to gauge teacher learning of earth/environmental concepts. Pre/post institute score analysis will determine the number that show statistically significant (t test) knowledge gains.

Teacher Survey: This will be a project-specific, Likert-type instrument to assess changes in attitude and classroom practice to be completed by teachers online in late spring and again at the end of the following school year. Items will be compared pre versus post to determine statistically significant differences (z tests) in responses related to confidence in teaching science/environmental topics, amount of instructional time devoted to science and phenomenon-based teaching, and areas of professional growth.

Student Tests: Project-developed student content knowledge tests will be constructed. Achievement in earth/environmental content will be gauged by comparing scores of the teacher participants’ students before the teachers attended the institutes with those after attendance using z tests for independent samples. Teachers who teach the same standards and did not attend ESTEEM will be solicited to administer the same tests to their students for comparison.

**Activity Milestones:**

|  |  |
| --- | --- |
| **Description** | **Completion Date** |
| Construct and test ESTEEM Teacher Survey instrument. | 2021-01-31 |
| Complete the design of content tests for gauging teacher learning. | 2021-03-31 |
| Administer online survey instrument to teachers registered for summer 2021 institutes. | 2021-04-30 |
| Administer online survey again to teachers after one year of teaching post-ESTEEM training. | 2022-05-31 |
| Analyze/report findings on teacher/student achievement and classroom advances in Minnesota earth/environmental education. | 2022-06-30 |
| Repeat data collecting, analysis and reporting for 2022 and 2023 programs. | 2023-08-31 |

## **Project Partners and Collaborators**

|  |  |  |  |
| --- | --- | --- | --- |
| **Name** | **Organization** | **Role** | **Receiving Funds** |
| Dr. Russell Colson, Professor of Geology | Department of Anthropology and Earth Science; Minnesota State University, Moorhead | Dr. Colson will serve as lead instructor for one cohort of 20 high school science teachers seeking additional licensure in 9-12 Earth Science. Colson will lead two, 8-day summer institutes at MSU-Moorhead plus facilitate two online courses in fall and spring over the three years of the project. | Yes |
| Dr, Bryce Hoppie, P.G. (Mn), Professor of Geology | Department of Chemistry and Geology; Minnesota State University, Mankato | Dr. Hoppie will be the lead earth/environmental science instructor for three, 5-day, 6th grade science teacher summer institutes in southern Minnesota and one cohort of 20 high school science teachers at MSU-Mankato. | Yes |
| Dr. Kent C. Kirkby, Professor of Geology | School of Earth and Environmental Sciences; University of Minnesota Twin Cities | Dr. Kirkby will serve as lead earth/environmental science instructor for three, 5-day, 6th grade science teacher summer institutes provided in the Metro area. | Yes |
| Dr. Hillary A. Barron, Research Associate | Biology Teaching and Learning Department; University of Minnesota Twin Cities | Dr. Barron will be a guest presenter in teaching toward equity in environmental education at all summer institutes. | Yes |
| Dr. Kate S. Pound, Geology Professor | Atmospheric & Hydrologic Sciences Department; St. Cloud State University | Dr. Pound will be the lead earth/environmental science instructor for three, 5-day, 6th grade science teacher summer institutes hosted at St. Cloud State, Bemidji State, and UM-Crookston. | Yes |
| Kate Rosok, MESTA President | Minnesota Earth Science Teachers Association (MESTA) | MESTA - a statewide organization serving Minnesota earth science teachers - will provide co-instructors for each ESTEEM summer institute, help with statewide coordination, identify regional field sites, and provide teaching resources and networking for ESTEEM participants. | No |
| Larry Mascotti, Community Faculty | Metropolitan State University | Mr. Masotti will instruct the online Introductory Astronomy course for teachers offering the course once per year over the three years of the project. | Yes |
| Rachel Humphrey, Assistant Professor | St. Cloud State University | Ms. Humphrey (completing her PhD in May 2021) will instruct the online introductory Meteorology course for teachers offering one course per year over the three years of the project. | Yes |
| Dr. Jennifer L.B. Anderson, Professor of Geoscience | Geoscience Department; Winona State University | Dr. Anderson will serve a guest presenter on Minnesota climate for all ESTEEM summer institutes. | Yes |
| Dr. Donna Whitney, Geology/Environmental Science Professor | School of Earth and Environmental Sciences; University of Minnesota Twin Cities | Dr. Whitney will serve as a guest presenter focusing on Minnesota geo-habitats and petrology for all summer institutes. | Yes |

## **Long-Term Implementation and Funding**

**Describe how the results will be implemented and how any ongoing effort will be funded. If not already addressed as part of the project, how will findings, results, and products developed be implemented after project completion? If additional work is needed, how will this be funded?**The ultimate result of ESTEEM will be a cohort of science teachers confident in their content understanding and pedagogical skills in addressing the new Earth/Environmental Science standards. Implementation of a more vibrant, environmentally- and Minnesota-focused approach to teaching science will be immediate in classrooms across the state. Pre/post testing of teachers and students plus pre/post attitudinal surveys will be used to gauge the success of ESTEEM.

Resources and strategies will be distributed statewide through MnSTA conferences and website. All expenses in maintaining communication and sharing best practices and resources will be funded by MnSTA.

## **Project Manager and Organization Qualifications**

**Project Manager Name:** Lee Schmitt

**Job Title:** ESTEEM Project Manager

**Provide description of the project manager’s qualifications to manage the proposed project.**Lee Schmitt served as Associate Director for Professional Development and faculty in the Hamline University School of Education. His work involved developing and implementing large-scale programs for Minnesota teachers of science in the areas of science content, licensure, environmental education, practice-based instruction, and STEM education. Schmitt designed and managed statewide teacher programs in geology, biotechnology, chemistry/physics, drinking water, and three regional Science Academies funded by the state Math Science Partnership (MSP). Schmitt was project director for the nationally-recognized, $2.3 million, Minnesota Science Teachers Education Project (MnSTEP) serving nearly 1000 K-12 teachers of science throughout Minnesota. He has served as president of the Minnesota Science Teachers Association (MnSTA) and Minnesota Earth Science Teachers Association (MESTA), and was Co-PI/lead writer for Science and Engineering Practices in Action (SEPA) – a series of online professional development modules for K-12 teachers of science funded by a state MSP grant. Over his 22 years in teacher education, Schmitt has managed over 20 large-scale professional development projects serving thousands of Minnesota science teachers.

**Organization:** Minnesota Science Teachers Association

**Organization Description:**The Minnesota Science Teachers Association (MnSTA) is a statewide, non-profit, 501(c)(3) organization dedicated to improving the quality of science and environmental education for ALL Minnesota students by providing K-16 science educators a platform for the exchange of ideas and materials, current research in science and environmental education, a statewide leadership and communication network, and needed professional development in all science disciplines. Established in 1964, MnSTA is governed by a 32-member board of directors representing all science disciplines, 11 regions of the state, universities, urban and rural districts, public/private schools, as well as informal and alternative science education. MnSTA has partnered, led, and/or contributed to numerous, statewide professional development programs for Minnesota teachers of science.

## **Budget Summary**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Category / Name** | **Subcategory or Type** | **Description** | **Purpose** | **Gen. Ineli gible** | **% Bene fits** | **# FTE** | **Class ified Staff?** | **$ Amount** |
| **Personnel** |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  | **Sub Total** | **-** |
| **Contracts and Services** |  |  |  |  |  |  |  |  |
| Dr. Bryce Hoppie | Professional or Technical Service Contract | Dr. Hoppie will serve as lead instructor for three 6th grade summer institutes and one high school cohort totaling 31 days of instruction over three years. The $800/day stipend matches NSF grant guidelines for PhD instructors and includes all preparation, course instruction, assessment, mileage, and per diem. |  |  |  | 0.69 |  | $24,800 |
| Dr. Russell Colson | Professional or Technical Service Contract | Dr. Colson will be lead instructor for one cohort of high school teachers totaling 16 days of instruction at $800 per day (NSF PhD daily rate) plus instruct six online courses at $3000 per course. (Normal reimbursement would be $9348.) Colson will also design one new online course for $3000. |  |  |  | 1.14 |  | $33,800 |
| Dr. Kate Pound | Professional or Technical Service Contract | Dr. Pound will serve as lead instructor for three, 5-day, 6th grade teacher summer institutes to be held in northern regions of the state. The $800/day stipend is based on NSF grant guidelines for PhD instructors and includes all preparation, course instruction, assessment, mileage, and per diem. |  |  |  | 0.39 |  | $12,000 |
| Dr. Kent Kirkby | Professional or Technical Service Contract | Dr. Kirkby will serve as lead instructor for three, 5-day, 6th grade teacher summer institutes to be held in the Metro area. The $800/day stipend is based on NSF grant guidelines for PhD instructors and includes all preparation, course instruction, assessment, mileage, and per diem. |  |  |  | 0.39 |  | $12,000 |
| Larry Mascotti | Professional or Technical Service Contract | Mr. Mascotti will instruct three online courses in Astronomy, one per year, over three years. The instructor rate of $3000 per online course is based on one-third of the standard university rate for teaching a three-credit online course for up to 40 students. |  |  |  | 0.15 |  | $9,000 |
| Rachel Humphrey | Professional or Technical Service Contract | Ms. Humphrey will instruct three online courses in Meteorology, one per year, over three years. The instructor rate of $3000 per online course is based on one-third of the standard university rate for teaching a three-credit online course for up to 40 students. |  |  |  | 0.15 |  | $9,000 |
| Dr. Jennifer Anderson | Professional or Technical Service Contract | Dr. Anderson will present on Minnesota climate for one-half day for 11 programs over three years. $400 is one-half of the $800 per day afforded PhD instructors based on NSF grant guidelines and includes all preparation, presentation, mileage, and per diem. |  |  |  | 0.54 |  | $4,400 |
| Dr. Hillary Barron | Professional or Technical Service Contract | Dr. Barron will present on achieving equity in science/environmental education for one-half day for 11 programs over three years. $400 is one-half of the $800 per day afforded PhD instructors based on NSF grant guidelines and includes all preparation, presentation, mileage, and per diem. |  |  |  | 0.54 |  | $4,400 |
| Dana Smith | Professional or Technical Service Contract | Ms. Smith will co-instruct for two, 8-day programs focusing on environmental education. $400 per day is based on NSF grant guidelines for non-PhD instructors and is inclusive of all expenses. She will also guest present on environmental topics for five institutes and develop one online class for $3000. |  |  |  | 0.66 |  | $11,400 |
| Marlene Schoeneck | Professional or Technical Service Contract | Ms. Schoeneck, a high school science teacher, will guest present for one day in each of 11 programs focusing on environmental education and pedagogy. $400 per day is based on NSF grant guidelines for non-PhD instructors and includes all preparation, presentation, mileage, and per diem. |  |  |  | 0.54 |  | $4,400 |
| Mary Ann Colson | Professional or Technical Service Contract | Ms. Colson, a middle school science teacher, will co-instruct with Dr. Colson at MSU-Moorhead for two, 8-day programs focusing on environmental education and pedagogy. $400 per day is based on NSF grant guidelines for non-PhD instructors and includes all expenses. She will also guest present five days at other institutes. |  |  |  | 0.54 |  | $8,400 |
| Joseph Reymann | Professional or Technical Service Contract | Mr. Reymann will manage the ESTEEM budget for MnSTA and be responsible for all budget-related transactions. $3000 per year is based on an estimated 200 hours per year at $15/hour. |  |  |  | 0.3 |  | $9,000 |
| Lee Schmitt | Professional or Technical Service Contract | Mr. Schmitt will manage project evaluation and reporting by collecting data from ESTEEM participants and their students to determine the effectiveness of the program and its impact on earth/environmental education in Minnesota. $3000 per year is based on an estimated 200 hours per year at $15/hour. |  |  |  | 0.3 |  | $9,000 |
| High School Teacher Co-instructors TBD | Professional or Technical Service Contract | Nine experienced high school earth/environmental teachers will be selected to co-teach each of the nine, 5-day, 6th grade summer institutes to provide direct classroom focus and teaching strategies. $400 per day is based on NSF grant guidelines for non-PhD instructors and includes all preparation, presentation, mileage, and per diem. |  |  |  | 1.17 |  | $18,000 |
| Regional Coordinators TBD | Professional or Technical Service Contract | Four teachers will be selected to lead the coordination of summer institutes in four different regions of the state. Coordinators will be responsible for all institute logistics including location, set-up, supplies, attendance, etc. $1500 per coordinator per year is based on 100 hours of work at $15/hour. |  |  |  | 0.6 |  | $18,000 |
| Course Credits for High School Teacher Participants | Professional or Technical Service Contract | Amount is based on 80% of 40 possible teachers in the high school program choosing to receive credits vs stipend for their participation in ESTEEM. $120/credit is a negotiated fee from MSU-Moorhead (see justification). 12-credit licensure preparation program x $120/credit x 30 participants. |  | X |  | 1.8 |  | $43,200 |
| Course Credits for 6th grade Teacher Participants | Professional or Technical Service Contract | Amount is based on 80% of 270 possible teachers in the nine, 5-day summer programs choosing to receive credits vs stipend for their participation in ESTEEM. $120/credit is a negotiated fee from MSU-Moorhead (see justification). 2 credits x $120/credit x 216 participants. |  | X |  | 4.8 |  | $51,840 |
| Online Course Credits for Teachers | Professional or Technical Service Contract | Amount is based on 75% of a possible 840 teachers that could participate in ESTEEM online courses if every section were filled. $120/credit is a negotiated fee from MSU-Moorhead (see justification). 3 credits x $120/credit x 630 teachers. |  | X |  | 18.9 |  | $226,800 |
| Stipends for High School Teacher Participants | Professional or Technical Service Contract | Amount based on 20% of 40 possible teachers in the high school program choosing to receive a stipend vs credits. $60/day for attending professional development is 33% of the average teacher stipend rate of $180/day. 8 days x $60/day x 2 summers x 10 teachers. |  |  |  | 0.6 |  | $9,600 |
| Stipends for 6th grade Participating Teachers | Professional or Technical Service Contract | Amount based on 20% of 270 possible teachers in the 6th grade program choosing to receive a stipend vs credits. $60/day for attending professional development is 33% of the average teacher stipend rate of $180/day. 5 days x $60/day x 54 teachers. |  |  |  | 1.2 |  | $16,200 |
| Dr. Donna Whitney | Professional or Technical Service Contract | Dr. Whitney will present on Minnesota geo-habitats and petrology for one-half day for 11 programs over three years. $400 is one-half of the $800 per day afforded PhD instructors based on NSF grant guidelines and includes all preparation, presentation, mileage, and per diem. |  |  |  | 0.54 |  | $4,400 |
| ESTEEM Planning Team | Professional or Technical Service Contract | Planning for year one will be completed in kind. In years two and three, five members of planning team (R. Colson, M. Colson, D. Smith, L. Schmitt, & B. Hoppie) will receive a $200 stipend per year. ($20/hour x 10 hours x 2 years x 5 planners) |  |  |  | 0.06 |  | $2,000 |
|  |  |  |  |  |  |  | **Sub Total** | **$541,640** |
| **Equipment, Tools, and Supplies** |  |  |  |  |  |  |  |  |
|  | Tools and Supplies | Field Notebooks for Teachers (310 teachers x $21.95) | Recording data and notes from field and lab investigations plus outstanding scales and information for processing soil and rock data in the field. |  |  |  |  | $6,805 |
|  | Tools and Supplies | Field lens. (310 teachers x $13.50) | Essential tool for magnification in the field. |  |  |  |  | $4,185 |
|  | Tools and Supplies | MGS County Atlases (310 teachers x $12.50) | Detailed geologic maps of each teacher's county including bedrock, habitats and mineral resources. |  |  |  |  | $3,875 |
|  | Tools and Supplies | Assorted MGS Geology/Hydrology Maps of Minnesota (310 teachers x $25) | Observation and investigation of Minnesota soils, water, habitats, and mineral resources. |  |  |  |  | $7,750 |
|  | Tools and Supplies | Learning to Read the Earth and Sky: Explorations Supporting the NGSS, Grades 6–12. (310 teachers x $28.32) | Outstanding introduction to phenomenon-based teaching in earth and environmental sciences. |  |  |  |  | $8,780 |
|  | Tools and Supplies | General field/lab supplies TBD based on final curricula in each region. Supply amount is based on MSU-recommended $125/student for instructional supplies in a science class. | Tools, lab equipment, chemicals needed for field and lab investigations TBD. |  |  |  |  | $7,477 |
|  |  |  |  |  |  |  | **Sub Total** | **$38,872** |
| **Capital Expenditures** |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  | **Sub Total** | **-** |
| **Acquisitions and Stewardship** |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  | **Sub Total** | **-** |
| **Travel In Minnesota** |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  | **Sub Total** | **-** |
| **Travel Outside Minnesota** |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  | **Sub Total** | **-** |
| **Printing and Publication** |  |  |  |  |  |  |  |  |
|  | Printing | Duplicating of handouts (40 pages/teacher x .12/page x 310 participants). | Printouts will be needed for teachers to use in processing data, gaining insight into lesson design, and to highlight pertinent earth/environmental science content. |  |  |  |  | $1,488 |
|  |  |  |  |  |  |  | **Sub Total** | **$1,488** |
| **Other Expenses** |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  | **Sub Total** | **-** |
|  |  |  |  |  |  |  | **Grand Total** | **$582,000** |

### **Classified Staff or Generally Ineligible Expenses**

|  |  |  |  |
| --- | --- | --- | --- |
| **Category/Name** | **Subcategory or Type** | **Description** | **Justification Ineligible Expense or Classified Staff Request** |
| **Contracts and Services** - Course Credits for High School Teacher Participants | Professional or Technical Service Contract | Amount is based on 80% of 40 possible teachers in the high school program choosing to receive credits vs stipend for their participation in ESTEEM. $120/credit is a negotiated fee from MSU-Moorhead (see justification). 12-credit licensure preparation program x $120/credit x 30 participants. | Educational professional development grants typically fund a teacher credit or stipend option. MSP, ITQ, 3M, Medtronic, and NSF grants all allow for payment of credits or stipend to teachers. Participation in ESTEEM requires a large commitment of time, and teachers deserve some form of compensation. MnSTA has negotiated with Minnesota State University, Moorhead to provide a "co-sponsored rate" for graduate credits at $120 per credit. This pays for administration of the credit only (recording, posting grades, transcripts, etc.) and provides no "profit" or overhead for the university. MSU-Moorhead would normally charge $460/credit, so $120 is a real bargain. Course credits will be consolidated and all payments for credits will be made to MSU-Moorhead.**This is a single source contract.** |
| **Contracts and Services** - Course Credits for 6th grade Teacher Participants | Professional or Technical Service Contract | Amount is based on 80% of 270 possible teachers in the nine, 5-day summer programs choosing to receive credits vs stipend for their participation in ESTEEM. $120/credit is a negotiated fee from MSU-Moorhead (see justification). 2 credits x $120/credit x 216 participants. | Educational professional development grants typically fund a teacher credit or stipend option. MSP, ITQ, 3M, Medtronic, and NSF grants all allow for payment of credits or stipend to teachers. Participation in ESTEEM requires a large commitment of time, and teachers deserve some form of compensation. MnSTA has negotiated with Minnesota State University, Moorhead to provide a "co-sponsored rate" for graduate credits at $120 per credit. This pays for administration of the credit only (recording, posting grades, transcripts, etc.) and provides no "profit" or overhead for the university. MSU-Moorhead would normally charge $460/credit, so $120 is a real bargain. Course credits will be consolidated and all payments for credits will be made to MSU-Moorhead.**This is a single source contract.** |
| **Contracts and Services** - Online Course Credits for Teachers | Professional or Technical Service Contract | Amount is based on 75% of a possible 840 teachers that could participate in ESTEEM online courses if every section were filled. $120/credit is a negotiated fee from MSU-Moorhead (see justification). 3 credits x $120/credit x 630 teachers. | Educational professional development grants typically fund a teacher credit or stipend option. MSP, ITQ, 3M, Medtronic, and NSF grants all allow for payment of credits or stipend to teachers. Participation in ESTEEM requires a large commitment of time, and teachers deserve some form of compensation. Also note that there may be fewer teachers participating in online courses than projected. MnSTA has negotiated with Minnesota State University, Moorhead to provide a "co-sponsored rate" for graduate credits at $120 per credit. This pays for administration of the credit only (recording, posting grades, transcripts, etc.) and provides no "profit" or overhead for the university. MSU-Moorhead would normally charge $460/credit, so $120 is a real bargain. Course credits will be consolidated and all payments for credits will be made to MSU-Moorhead.**This is a single source contract.** |

### **Non ENRTF Funds**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Category** | **Specific Source** | **Use** | **Status** | **Amount** |
| **State** |  |  |  |  |
|  |  |  | **State Sub Total** | **-** |
| **Non-State** |  |  |  |  |
| In-Kind | Project Summer Instructors and Presenters | Instructors’ summer mileage for travel to and from summer institute locations will be waived. (200 miles/year x .575/mile x 12 instructors/presenters x 3 years = $4140 in kind.) | Secured | $4,140 |
| In-Kind | ESTEEM Summer Teacher Participants | Program bus/van mileage to transport teachers to field sites will be replaced with carpooling. (4 vehicles/summer x 300 miles/day x 0.58/mile x 21 days = $14,616 in program savings.) | Secured | $14,616 |
| In-Kind | ESTEEM Lead Instructors | Mileage for Drs. Colson, Kirkby, Hoppie, and Pound to visit and select field sites for investigation will be waived. (300 miles x .575/mile x 4 instructors = $2,070 in kind.) | Secured | $2,070 |
| In-Kind | Minnesota Universities and School Districts | Rental fees for use of university facilities and school sites for summer institutes will be waived. (Estimated $500/week x 17 weeks = $8500 in program savings.) | Secured | $8,500 |
| In-Kind | Minnesota Science Teachers Association (MnSTA) | A one-year membership in MnSTA/MESTA will be provided in kind for summer teacher participants. (310 participants x $25 = $7750 in kind.) | Secured | $7,750 |
| In-Kind | Minnesota Science Teachers Association (MnSTA) | MnSTA website marketing, registration, and statewide online distribution of resources will be provided in kind. ($600/year x 3 years = $1800) | Secured | $1,800 |
| In-Kind | ESTEEM Planning Team | The six-member ESTEEM Planning Team will complete first-year planning without stipend or travel. Budget expenses for the one-year of planning was calculated at $9,500. | Secured | $9,500 |
| In-Kind | Minnesota School Districts | Minnesota school districts will be asked to reimburse teacher travel expenses to ESTEEM summer institutes using their available ESSA funding. Room and board amount is based on 50% need for 6th grade teachers and 100% need for high school teachers staying in university dorms. | Potential | $42,320 |
|  |  |  | **Non State Sub Total** | **$90,696** |
|  |  |  | **Funds Total** | **$90,696** |

## **Attachments**

### **Required Attachments**

#### ***Visual Component***

File: [749318c6-234.pdf](https://lccmrprojectmgmt.leg.mn/media/map/749318c6-234.pdf)

#### ***Alternate Text for Visual Component***

The new 2019 Minnesota Science Benchmarks for 6th grade and high school students only are presented here. Benchmarks which represent a strong Minnesota environmental focus are highlighted. These new standard benchmarks are the motivation and purpose of our ESTEEM proposal - to help teachers teach earth/environmental science across Minnesota with new knowledge, confidence and energy.

#### ***Financial Capacity***

File: [fe990d63-730.pdf](https://lccmrprojectmgmt.leg.mn/media/financial_capacity/fe990d63-730.pdf)

#### ***Board Resolution or Letter***

|  |  |
| --- | --- |
| **Title** | **File** |
| MnSTA Letter of Resolution for ESTEEM Project | [f0c0bb4d-5a7.pdf](https://lccmrprojectmgmt.leg.mn/media/attachments/f0c0bb4d-5a7.pdf) |

### **Optional Attachments**

#### ***Support Letter or Other***

|  |  |
| --- | --- |
| **Title** | **File** |
| Intro & 2019 Minnesota Academic Standards in Science | [d255a287-566.pdf](https://lccmrprojectmgmt.leg.mn/media/attachments/d255a287-566.pdf) |

## **Administrative Use**

**Does your project include restoration or acquisition of land rights?**
 No

**Does your project have patent, royalties, or revenue potential?**
 No

**Does your project include research?**
 No

**Does the organization have a fiscal agent for this project?**
 No