

**Environment and Natural Resources Trust Fund**

# 2022 Request for Proposal

## **General Information**

**Proposal ID:** 2022-169

**Proposal Title:** ESTEP (Earth Science Teacher Education Project)

## **Project Manager Information**

**Name:** Lee Schmitt

**Organization:** Minnesota Science Teachers Association

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

**Email:** lee.m.schmitt@gmail.com

## **Project Basic Information**

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

**Funds Requested:** $495,000

**Proposed Project Completion:** August 31 2024

**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 accessible, affordable graduate-level earth/environmental science courses to procure a 9-12 Earth and Space Science teaching license.

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. Now is the opportune time for a statewide initiative to prioritize and strengthen 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.

ESTEP will meet this challenge and enhance 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 Environmental and Earth 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 UM-Twin Cites will team with experienced environmental/earth science educators to provide 13 ESTEP Institutes over three summers (2022-2024) 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 960 teachers, together serving up to 1270 teachers and enriching earth/environmental education for an estimated 60,000 Minnesota students.

Institutes will include review of key environmental/earth 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.

ESTEP 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, ESTEP will:
1) Increase teacher content knowledge in environmental/earth 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 environmental science and student-directed investigations.
4) Increase teacher confidence and enthusiasm for teaching environmental science.
5) Increase outdoor learning experiences.

## **Activities and Milestones**

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

**Activity Budget:** $2,000

**Activity Description:**Objective: Design and market three teacher institutes for July/August 2022, the summers of 2023-24, and five online courses.

MnSTA and our five university partners have been discussing elements of the ESTEP program for two years. With MnSTA funding, planning will move aggressively to set specific course content that directly targets new standards benchmarks, finalizing course syllabi, determining phenomenon-based teaching strategies to be modeled, designing pre/post tests and attitudinal surveys, choosing field sites, finalizing locations and dates, and detailing/confirming logistics for the institutes and online courses. These tasks will be divided and assigned to team members with strict deadlines.

Due to the urgent need for this professional development, the ESTEP Planning Team has agreed to complete planning and waive all expenses so institutes can begin in mid-July and August of 2022. $2000 has been budgeted for planning in years two and three.

Marketing during the 2021-22 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 ESTEP to their science teachers. MnSTA will handle online registrations.

When funding becomes available on July 1, 2022, ESTEP will be ready.

**Activity Milestones:**

|  |  |
| --- | --- |
| **Description** | **Completion Date** |
| Complete detailed agendas for summer institutes. | October 31 2021 |
| Locations/instructors determined/confirmed for one high school and two 6th grade institutes in July/August 2022. | November 30 2021 |
| Marketing and application designed, tested and posted online. | January 31 2022 |
| Online course syllabi completed and reviewed. Online platforms ready. | March 31 2022 |
| Logistics and participants confirmed. | May 31 2022 |

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

**Activity Budget:** $484,000

**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 2022, 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 2022 and spring 2024, five online courses – Earth Essentials, EE/ES Advanced Topics, Geoscience for Elementary Teachers, Meteorology, and Astronomy – will be available for up to 240 teacher participants each year.

In early summer 2023, 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. ESTEP will also host three 6th grade institutes (30 participants each) in three different regions of the state.

In summer 2024, the second high school cohort will finish their program, and ESTEP will host four 6th grade institutes in four regions.

ESTEP will serve as many as 310 teachers in 13 programs in summers 2022-24 and up to 840 teachers in online courses.

**Activity Milestones:**

|  |  |
| --- | --- |
| **Description** | **Completion Date** |
| Complete three, first-year regional summer programs for up to 80 teachers of science. | August 31 2022 |
| Complete five regional summer programs for up to 110 additional teachers. | August 31 2023 |
| Complete 21 online sections, serving 40 teachers each, during the falls and springs of 2022-24. | May 31 2024 |
| Complete five regional summer programs for up to 120 additional teachers. | August 31 2024 |

### **Activity 3: Evaluation and Reporting on ESTEP Impact on Environmental Education in Minnesota Schools**

**Activity Budget:** $9,000

**Activity Description:**Objective: Collect data from ESTEP 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 knowledge and skills tests and rubrics 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 ESTEP will be solicited to administer the same tests to their students.

**Activity Milestones:**

|  |  |
| --- | --- |
| **Description** | **Completion Date** |
| Construct and test ESTEP Teacher Survey instruments. | January 31 2022 |
| Complete the design of content tests and rubrics for gauging teacher and student learning. | March 31 2022 |
| Administer online survey instrument to teachers registered for summer 2022 institutes. | April 30 2022 |
| Collect data on student engagement and learning of environmental science during school year. | May 31 2023 |
| Administer online survey again to teachers after one year of teaching post-ESTEP training. | May 31 2023 |
| Analyze/report findings on teacher/student achievement and classroom advances in Minnesota earth/environmental education. | June 30 2023 |
| Repeat data collecting, analysis and reporting for 2023 and 2024 programs. | August 31 2024 |

## **Project Partners and Collaborators**

|  |  |  |  |
| --- | --- | --- | --- |
| **Name** | **Organization** | **Role** | **Receiving Funds** |
| Dr. Russell Colson, Professor of Geology | Minnesota State University, Moorhead | Dr. Colson will serve as lead instructor for two cohorts of 20 high school science teachers seeking additional licensure in 9-12 Earth/Environmental Science. Colson will lead four, 8-day summer institutes at MSU-Moorhead, present at regional institutes, and instruct two online courses over the three years of the project. | Yes |
| Dr. Bryce Hoppie, P.G. (Mn), Professor of Geology | Minnesota State University, Mankato | Dr. Hoppie will be the lead earth/environmental science instructor for three, 5-day, regional 6th grade science teacher summer institutes and lead one cohort of high school teachers hosted at MSU-Mankato. | Yes |
| Dr. Kate S. Pound, Geology Professor | 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 |
| Dr. Jennifer L.B. Anderson, Professor of Geoscience | Winona State University | Dr. Anderson will serve as a guest presenter on Minnesota climate issues for all ESTEP summer institutes. | Yes |
| Dr. Hillary A. Barron, Research Associate | University of Minnesota Twin Cities | Dr. Barron will be a guest presenter in teaching toward equity in science/environmental education at all summer institutes. | Yes |
| Dr. Rachel Humphrey, Professor | St. Cloud State University | Dr. Humphrey will instruct the online introductory Meteorology course for teachers offering up to two sections in fall and spring over the three years of the project. | Yes |
| Larry Mascotti, Community Faculty | Metropolitan State University | Mr. Masotti will instruct the online introductory Astronomy course for teachers offering up to two sections in fall and spring over the three years of the project. | 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 ESTEP summer institute, help with statewide coordination, identify regional field sites, and provide teaching resources and networking for ESTEP participants. | No |
| Dr. Donna Whitney | School of Earth and Environmental Sciences; University of Minnesota Twin Cities | Dr. Whitney will serve as a guest presenter focusing on Minnesota minerals, 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 ESTEP 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 ESTEP.

Resources and strategies will be distributed statewide through MnSTA conferences, workshops 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:** ESTEP Coordinator

**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 the 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 30 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 led, partnered 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. 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.) |  |  |  | 0.84 |  | $33,800 |
| 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 38 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. |  |  |  | 0.54 |  | $30,800 |
| 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. |  |  |  | 0.06 |  | $12,000 |
| Dr. 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. |  |  |  | 0.39 |  | $9,000 |
| 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. |  |  |  | 0.39 |  | $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. |  |  |  | 0.15 |  | $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. |  |  |  | 0.15 |  | $4,400 |
| Dr. Donna Whitney | Professional or Technical Service Contract | Dr. Whitney will present on Minnesota mineral resources 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. |  |  |  | 0.15 |  | $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 co-teach one online class. |  |  |  | 0.3 |  | $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. |  |  |  | 0.15 |  | $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. |  |  |  | 0.12 |  | $8,400 |
| Joseph Reymann | Professional or Technical Service Contract | Mr. Reymann will manage the ESTEP budget 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 ESTEP participants and their students to determine the effectiveness of the program and its impact on 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. |  |  |  | 0.51 |  | $18,000 |
| Course Credit for High School Teacher Participants | Sub award | Amount is based on 80% of 40 possible teachers in the high school program choosing to receive credits vs stipend for their participation in ESTEP. $120/credit is a negotiated fee from MSU-Moorhead (see justification). 12-credit licensure preparation program x $120/credit x 30 participants. |  | X |  | 0 |  | $43,200 |
| Course Credits for 6th grade Teacher Participants | Sub award | 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 ESTEP. $120/credit is a negotiated fee from MSU-Moorhead (see justification). 2 credits x $120/credit x 216 participants. |  | X |  | 0 |  | $51,840 |
| Online Course Credit for Teachers | Sub award | Amount is based on 50% of a possible 960 teachers that could participate in ESTEP online courses if every section were filled (highly unlikely). $120/credit is a negotiated fee from MSU-Moorhead (see justification). 3 credits x $120/credit x 480 teachers. |  | X |  | 0 |  | $172,800 |
| 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. |  | X |  | 0.9 |  | $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. |  | X |  | 5.1 |  | $16,200 |
| ESTEP 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 to modify programs. ($20/hour x 10 hours x 2 years x 5 planners.) |  |  |  | 0.04 |  | $2,000 |
|  |  |  |  |  |  |  | **Sub Total** | **$463,640** |
| **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 essential geo-scales and information for processing soil, mineral 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, water 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 | 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. |  |  |  |  | $7,257 |
|  |  |  |  |  |  |  | **Sub Total** | **$29,872** |
| **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** | **$495,000** |

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

|  |  |  |  |
| --- | --- | --- | --- |
| **Category/Name** | **Subcategory or Type** | **Description** | **Justification Ineligible Expense or Classified Staff Request** |
| **Contracts and Services** - Course Credit for High School Teacher Participants | Sub award | Amount is based on 80% of 40 possible teachers in the high school program choosing to receive credits vs stipend for their participation in ESTEP. $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, MDE and NSF grants all allow for payment of credits or stipend to teachers. Participation in ESTEP 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 not offered by any other university. 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 | Sub award | 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 ESTEP. $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, MDE and NSF grants all allow for payment of credits or stipend to teachers. Participation in ESTEP 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 not offered by any other university. 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 Credit for Teachers | Sub award | Amount is based on 50% of a possible 960 teachers that could participate in ESTEP online courses if every section were filled (highly unlikely). $120/credit is a negotiated fee from MSU-Moorhead (see justification). 3 credits x $120/credit x 480 teachers. | Educational professional development grants typically fund a teacher credit or stipend option. MSP, ITQ, 3M, Medtronic, MDE and NSF grants all allow for payment of credits or stipend to teachers. Participation in ESTEP 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 not offered by any other university. 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** - 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. | Educational professional development grants typically fund a teacher credit or stipend option. MSP, ITQ, 3M, Medtronic, MDE and NSF grants all allow for payment of credits or stipend to teachers. Participation in ESTEP requires a large commitment of time, and teachers deserve some form of compensation. $60/day for attending professional development is 33% of the average teacher daily stipend rate of $180/day. |
| **Contracts and Services** - 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. | Educational professional development grants typically fund a teacher credit or stipend option. MSP, ITQ, 3M, Medtronic, MDE and NSF grants all allow for payment of credits or stipend to teachers. Participation in ESTEP requires a large commitment of time, and teachers deserve some form of compensation. $60/day for attending professional development is 33% of the average teacher daily stipend rate of $180/day. |

### **Non ENRTF Funds**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Category** | **Specific Source** | **Use** | **Status** | **Amount** |
| **State** |  |  |  |  |
|  |  |  | **State Sub Total** | **-** |
| **Non-State** |  |  |  |  |
| In-Kind | Summer Instructor and Presenter Travel | 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 | Participant Travel to Field Sites | Program bus/van mileage to transport teachers to field sites will be replaced by using teacher vehicles. (4 vehicles/summer x 300 miles/day x 0.58/mile x 21 days = $14,616 in kind.) | Secured | $14,616 |
| In-Kind | Lead Instructor Planning Mileage | Mileage for Drs. Colson, 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 Schools | 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 | Minnesota Science Teachers Association (MnSTA) | The six-member ESTEP Lead Planning Team received a $10,000 planning grant from MnSTA. | Secured | $10,000 |
| In-Kind | Minnesota School Districts | Minnesota school districts will be asked to reimburse teacher travel expenses to ESTEP 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** | **$91,196** |
|  |  |  | **Funds Total** | **$91,196** |

## **Attachments**

### **Required Attachments**

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

File: [520c1ad3-ecb.pdf](https://lccmrprojectmgmt.leg.mn/media/map/520c1ad3-ecb.pdf)

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

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

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

File: [2f9e617e-b29.pdf](https://lccmrprojectmgmt.leg.mn/media/financial_capacity/2f9e617e-b29.pdf)

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

|  |  |
| --- | --- |
| **Title** | **File** |
| MnSTA Board Authorization for LCCMR Grant (ESTEP) | [306e4e5f-000.pdf](https://lccmrprojectmgmt.leg.mn/media/attachments/306e4e5f-000.pdf) |

### **Optional Attachments**

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

|  |  |
| --- | --- |
| **Title** | **File** |
| Intro & 2019 Minnesota Academic Standards in Science | [ea247e7b-219.pdf](https://lccmrprojectmgmt.leg.mn/media/attachments/ea247e7b-219.pdf) |

## **Administrative Use**

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

**Does your project have potential for royalties, copyrights, patents, or sale of products and assets?**
 No

**Do you understand and acknowledge IP and revenue-return and sharing requirements in 116P.10?**
 N/A

**Do you wish to request reinvestment of any revenues into your project instead of returning revenue to the ENRTF?**
 N/A

**Does your project include original, hypothesis-driven research?**
 No

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