Driven to Discover: Citizen Science 2015

Join a new collaboration between your school district, the U of MN Monarch Lab, and the U of MN STEM Education Center in a field study this summer! Immerse yourself in authentic field science with UMN scientists AND gain support in guiding students through full scientific investigations during the school-year. We utilize established citizen science projects as spring-boards to doing authentic investigations. You will engage in critical STEM content and foster real-word connections to science for you and your students. Your participation contributes to classroom science education research funded by NSF.

Summer Dates & Location:
- July 6-8: Cedar Creek Environmental Learning Center (over-nights 6th and 7th)
- July 9-10 and July 13-17: University of Minnesota St. Paul Campus 8:30-3:30

School–year Involvement:
- 3 Saturday meetings during the school year (October, February, and April on the UMN St. Paul Campus)
- 4 Reflective small group meetings at school district sites
- Multiple classroom visits from UMN faculty & staff
- 1 Ecology Research Fair focused on student work (UM campus tentative date Dec. 5th)

Opportunities and Stipends: All participants will receive: $2266 stipend OR 3 UMN graduate credits, field equipment and supportive curriculum, school-year support from project faculty and staff in the classroom, opportunity for student projects to be presented at UMN Ecology Fair, and eligibility for a Schoolyard Garden Grant.

Teacher Engagement Includes:
- Experience field research as a learner (group project, paper, and presentation)
- Create leveled reading materials and contribute to classroom curriculum
- Implement and modify curriculum focused on citizen science and process skills
- Reflect, discuss, and analyze teaching and learning with colleagues and UMN staff in a small group.

Cedar Creek Ecosystem Science Reserve
The first few days of the summer will be spent in the field amongst world-class ecological research at the Cedar Creek Ecosystem Science Reserve. We will utilize the reserve for summer investigations and learn how the reserve might be useful for experiences with students.

An Exclusive Program Offered for Middle and High School Teachers in:
So. Minnesota school districts (LeSueur-Henderson, St. Peter, Sibley East MN) Anoka Hennepin Public Schools Minneapolis Public Schools St. Paul Public Schools

Reserve Your Spot: or Ask Questions
Contact your district coordinator for science professional development, OR Sarah Weaver at weave048@umn.edu.
**Why Use Citizen Science?**

When you use citizen science in the classroom, you and your students can join a collaborative scientific team to achieve both research and classroom objectives. As a classroom tool, citizen science projects provide models of experimental design and data management combined with a focus on cutting edge ecological research questions. Teachers can guide students to investigate questions and analyses to the desired level of rigor for student learning and engagement. Student interest and confidence are bolstered by the psychological benefits of contributing to a larger project.

**Please Join Us!**

Renew your approach to guiding student research in the classroom with invested colleagues, your district, and UMN project staff.

- Gain valuable experience utilizing data and statistics in the context of authentic field experiments.
- Increase your experience and skills as you communicate authentic science findings with rigor and professionalism.
- Collaborate to create leveled reading resources for your classroom that link directly to current research.
- Support your students as they engage in science practices such as designing experiments, analyzing data and communicating results.
- Contribute to science education research with input on best practices that fit YOUR students.

**Citizen Science Project Choices**

**The Great Sunflower Project** ([www.greatsunflower.org](http://www.greatsunflower.org)). Pollinators provide essential services, ensuring the survival of most plants as well as contributing significantly to our food supplies. The Great Sunflower Project provides data that can help gauge the health of pollinator populations across the continent.

**Dragonfly Pond Watch** ([www.xerces.org/dragonfly-migration/pondwatch/]). This project is designed to determine the ranges of dragonfly and damselfly populations. You will learn the biology and behavior of many different species of dragonflies and damselflies, including some bizarre and ferocious habits.

**National Phenology Network** ([www.usanpn.org]). Phenologists record nature’s calendar: weather events, the return of migrant species, and plants blooming. Citizen scientists are helping to take the pulse of the planet, collecting data that help us understand climate fluctuations and responses by plants and animals.

**Citizen Lake Monitoring Project** ([www.pca.state.mn.us]). Collaborate with the Minnesota Pollution Control Agency to collect water quality data, and connect physical and chemical science to the health and ecological importance of nearby water-ways.

**eBird** ([www.ebird.org]). Track the abundance and distribution of North America birds. Learn bird identification and counting skills, and gain experience collecting data on the birds you see anywhere! The eBird database, with millions of records, provides a springboard to countless scientific research questions.