



University of
Nebraska-Lincoln
Physics & Astronomy



Action-at-a-Distance Cosmic Ray Observatory Project Invitation for Lead teachers

Deadline: May 15, 2017

Action-at-a-Distance, a National Science Foundation-funded project, is looking for science teachers interested in serving as Lead Teachers for the 2016-2018 school years. This project offers high school teachers and their students the opportunity to meaningfully participate in the Cosmic Ray Observatory Project (CROP), a study of high energy cosmic ray air showers whose nature and origins interest physicist and astronomers.

Envisioned as a multi-year experiment, CROP carries an emphasis on both hands-on high energy physics research and the development of trained remote teams of students to participate in a state-wide integrated study of extensive cosmic ray showers. By engaging *entire classrooms* in an active program of astrophysics research, we hope to cultivate widespread interest and enthusiasm for scientific research.

Lead Teachers' duties include: a) attendance at a 3-day summer training workshop in cosmic ray detection and data analysis; b) after-school video-linked meetings twice per month with program staff and other schools; and c) once-each-semester Saturday workshops on cosmic ray research focused on student contributions. If interest is strong, we can accept up to two lead teachers per school.

As instructor and leader of your school team, you will also receive a \$100 stipend for each day you participate in the workshops with travel expenses compensated for attending meetings when applicable.

Application forms are available on our website: www.crop.unl.edu

Application evaluation will begin on May 15, 2017. Schools will be notified of their selection no later than June 30, 2017.

If you have questions, please contact us at mbaquerizo2@unl.edu; CROPsolutions@unl.edu or call (402) 472-6471.



SUPPORTED BY THE NATIONAL SCIENCE FOUNDATION



Action-at-a-Distance CROP: APPLICATION FORM – LEAD TEACHER(S)

APPLICATION DEADLINE: May 15, 2017

School Name:			
School Address:		School Phone:	
Please fill out the following information for each teacher			
Lead Teacher 1:			
Number of Years Teaching:		Grades taught:	
Courses taught:			
Mailing Address:			
Phone Number:			
Email Address:			
Lead Teacher 2:			
Number of Years Teaching:		Grades taught:	
Courses taught:			
Mailing Address:			
Phone Number:			
Email Address:			

Please return application to: CROP Department of Physics and Astronomy, University of Nebraska–Lincoln 855 N 16th Street Lincoln, NE 68588 or email to CROPSolutions@unl.edu or mbaquerizo2@unl.edu no later than May 15, 2017

ACTION-AT-A-DISTANCE CROP: LETTER TO THE PRINCIPAL

To the Principal:

Your school has been invited to be part of the Action-at-a-Distance Cosmic Ray Observatory Project (CROP) conducted by the University of Nebraska-Lincoln and funded by the National Science Foundation. The invitation includes the chance to take advantage of outreach activities offered by the UNL Department of Physics and Astronomy and join an actual on-going research effort to detect and study cosmic ray showers whose nature and origins are of interest to physicists and astronomers.

CROP began in 2000 and has already engaged over 170 students from 29 different high schools. This collaboration of high school students, teachers, university students and professors offers a research experience that extends beyond the classroom and continues throughout the school year, via coordinated Internet sharing of data. This program's paradigm of team-building, training, long-distance education and state-wide expansion is intended by the NSF to serve as a model for other large-scale, coordinated high school/University research initiatives.

Benefits to your school:

1. There is no cost to your school to participate
2. Every lead teacher(s) will receive a \$100 daily for workshop attendance.
3. Participating teachers will be eligible to attend workshops developed by CROP and will be reimbursed for travel expenses when applicable.
4. Participant students and teachers will have access to enrichment activities that include: once-each-semester Saturday conferences on cosmic ray research (hosted by UNL and focused on student contributions), a 3-day summer training workshop in cosmic ray detection and data analysis (at UNL), and bi-weekly after-school video-linked meetings with other schools and UNL staff.

If you find you have any further questions or comments about the project, please do not hesitate to contact us at CROPSolutions@unl.edu or mbaquerizo2@unl.edu.

Sincerely,



Daniel R. Claes, Professor of Physics & Astronomy