THE UNIVERSITY OF TENNESSEE GK-12 EARTH PROJECT: ENRICHING EARTH SCIENCE IN RURAL TENNESSEE MIDDLE SCHOOLS THROUGH RESEARCH-BASED ACTIVITIES ON CLIMATE AND ENVIRONMENTAL HISTORY

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The University of Tennessee Knoxville GK-12 project integrates earth science research, teaching, and learning to enrich middle school STEM instruction, provide professional development and new teaching experiences to rural middle school science teachers, and enhance the training of UTK graduate students in geology and physical geography. Our principal objective is to bring alive the excitement of earth science research for students and teachers at rural middle schools in east Tennessee as a way to enhance their science classes, while simultaneously improving the teaching, communication, research, and outreach skills of the graduate students who will serve as GK–12 Fellows. Through this project, we will link middle school earth science instruction with current University research on climatic and environmental history as reconstructed from natural earth archives including sediments, soils, tree rings, and rocks. Ten GK–12 fellows each year will be selected from among advanced M.S. and Ph.D. students in the Departments of Earth and Planetary Sciences and Geography who are conducting their graduate research on such records of earth history, covering time periods that range from the historic period to the Mesoproterozoic. The Fellows will work with their faculty advisors (the PIs and Faculty Associates on the project) and with GK–12 Teacher-Partners in seven middle schools in four counties of East Tennessee, to develop hands-on, inquiry-based activities that build upon the current research of the fellows, advisors, and others in their labs; or that link to broader research efforts, such as the Integrated Ocean Drilling Program. The GK–12 Fellows will also develop local earth science research projects with the middle school students and teachers. Our poster will showcase some of the initial results of our GK-12 project, which has just begun.

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