



Solar In School Interim Study
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Professional Biography for

Dr. Mark. A Nanny

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Mark A. Nanny, Professor

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Nanny has extensive experience with K-12 outreach with 17 publications on engaging K-12 teachers in research and authentic STEM teaching. Nanny was PI of two NSF GK12 grants: “The Authentic Teaching Alliance” (2001-2005) and “Engineering in Practice for a Sustainable Future” (2006-2011), with a supplemental GK12 award in 2008 for developing the “International Engineering Academy” in partnership with the Prince of Songkla University, Hat Yai, Thailand. Through the later NSF GK12 award, Nanny developed the course “Science, Engineering and Mathematics Educational Outreach for STEM Majors” ENGR 4113/5113 which in 2010 was made a permanent general engineering course. The “Summer Engineering Academy” (SEA) was also developed from the second NSF GK12 grant and was supported by the Gallogly College of Engineering and the OU K20 Center. SEA was a two-week summer program for Oklahoma high school STEM teachers to come to OU, and in collaboration with engineering graduate students, learn how to implement authentic, guided-inquiry engineering lessons. From 2008 to 2013, Nanny was the director of the Sooner Engineering Education Center (SEED) in the Gallogly College of Engineering. With the partnership of four other dedicated engineering faculty, Nanny started the SEED Center. As part of the SEED Center, five endowed student SEED scholarships were established for engineering students interested in engineering education. As well, in 2010, SEED initiated a K-12 Outreach Program through the Rawl Engineering Practice Facility (REPF). Since then, over 18,000 K-12 students have visited the REPF, engaging in hands-on engineering activities lasting from one to three hours. Nanny has been a PI or CoPI on three previous RET grants: RET Site – Strengthening a K12 Learning Community through Engineering Research (2011-2014); RET Site – Teachers in the University Learning Engineering Research (2006-2009); and RET Site – Rural Educators Engaged in Bioanalytical Engineering in Research and Teaching (2015-2019).

As a research scientist, Nanny is an environmental chemist with over 37 published papers and active research in water, soils and sediments in understanding and characterizing complex environmental processes at a molecular-scale level as well as quantitatively measuring the influence of non-covalent interactions between organic compounds and natural organic matter on the processes of bioavailability, biodegradation rates and products, pollutant aging, and electron transfer reactions of natural organic matter. Likewise, microbial hydrocarbon degradation and biocorrosion processes of metallic surfaces is an active research area.

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