

Spring 2019 Colloquium

Department of Physics & Astronomy, TAMU-Commerce

Apr 18, Thursday, 4-5 PM in Science Building 127

(coffee and cookies will be served at 3:50 PM)

Physics education

Impact of a Physics By Inquiry Course on Preparing Qualified Physics Teachers

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Donna Stokes is an associate professor of physics at the University of Houston. Her scientific research focuses on understanding the structural, optical and electrical properties of semiconductor materials for the development of novel detectors and lasers for infrared applications. She is also involved in physics education research focusing on improving student performance in introductory physics courses and on physics teacher education preparation. She is currently serving as the Undergraduate Academic Advisor for the Department of Physics, faculty advisor for the University of Houston's Society of Physics Students, Astronomy Society and Sigma Pi Sigma. She received her BS in Physics from Southern University Baton Rouge (1988) and PhD in Physics from the University of Houston (1998). Prior to joining the faculty at UH, she was a postdoctoral researcher at Naval Research Laboratory (1998-2001). She is currently a fellow

of the American Physical Society Physic Teacher Education Coalition (PhysTEC), she is the recipient of the NSF Early Career Award (2002), the University of Houston Excellence in Group Teaching for Physics Award (2017) and the University of Houston Provost's Faculty Advising Award (2011). She is a member of the American Physical Society and is an Editorial Board member for the International Journal of Physics: Study and Research. See the <http://www.uh.edu/~dwstokes/> website for more information about Dr. Donna Stokes.

Abstract

Nationwide, approximately twenty-eight percent of the physics teachers at the 8-12 grade level are uncertified and/or unqualified, meaning they do not hold a major or minor degree in physics; therefore, many out of field teachers are assigned to teach physics. It is critical that Physics programs make a commitment to expand the availability of teacher education programs for preparing qualified physics teachers to teach the future generation of scientists. To address the need for recruiting and retaining high-quality physics teachers at the University of Houston, the Physics Department, in collaboration with the teachHOUSTON teacher education program and the College of Education, has developed a Physics By Inquiry course and degree plans for promotion of students into the teaching profession. This presentation highlights the outcomes of our efforts in preparing qualified physics teachers who possess the knowledge base for teaching physics and the self-efficacy needed to retain them in the classroom.