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Colorado State University's
Information Science and Technology Center
(ISTeC) Special Seminar
and

Abell Distinguished Lecture in Engineering

Dr. Neal C. Gallagher

Dean, College of Engineering and Computer Science
University of Central Florida

"Why Aren't There More Engineering Students?"

Friday, November 7, 2008
Reception: 12:30 p.m.
Lecture: 1:00 – 2:00 p.m.
Location: CSU Wagar 231

ABSTRACT

For a generation, universities and industry have been reaching out to K-12 students and teachers in an effort to improve student interest and performance in STEM subjects. It is common for universities to sponsor days on campus for teachers as well as student groups. At the same time, programs are in place to help students with remedial material before and after they enter the university. The National Science Foundation, as well as others, has spent millions upon millions of dollars in support of programs focused on outreach to K-12 in general, as well as under represented groups in particular. Corporations encourage their employees as well as retirees to reach out to schools, science museums, and even YMCA's in support of STEM education. About every two years it seems we see another monograph or report, using countless charts and graphs and scary numbers, predicting disaster for our country's competitive position if this situation does not improve.

In spite of these considerable efforts, engineering enrollments have been in decline since the mid 1980's. Is it time for a shift in focus? And what should we be doing to correct the situation?

As a 60 year old professor and father who has worked in science, math, and engineering for a lifetime, I have the added experience of currently having two young children in 2'nd, and 4'th grade. This has sharpened my vision as to what works, and does not work, in K-5 science and math. I have a new perspective and new views as to what needs to be done to address our broad challenges for preparing students to be the next generation of engineers.

While I will spend some time discussing why I think our efforts, to date, have not fully succeeded, I will try to focus on what I think will work, and how to bring a new era of excitement into science and math education. I will have numerous examples of how and what I do when I enter the K-5 classroom.

SPEAKER BIOGRAPHY

After receiving his BS degree in Physics in 1971 from Loyola College in Baltimore, Neal Gallagher went on to earn an MA and an MSE in electrical engineering, both in 1973, from Princeton University. He earned his Ph.D. in electrical engineering from Princeton University in 1974.

Dr. Gallagher spent two years on the faculty of Case Western Reserve University before moving to Purdue where he was a professor for 18 years. From 1994 to 1999, Dr. Gallagher chaired the Department of Electrical and Computer Engineering at the University of Delaware. He then moved to Colorado State University where he served as Dean of Engineering. In 2004, Dr. Gallagher joined the University of Central Florida as Dean of Engineering and Computer Science.

Neal Gallagher's technical interests are in optics, information coding, digital signal processing, and electro-magnetics. He has done seminal work in his field with over 2000 citations to his published work.

Dr. Gallagher has been active in service of the Institute of Electrical and Electronic Engineers (IEEE), the Optical Society of America (OSA), and SPIE, The International Society of Optical Engineering. He has served OSA as both editor of the journal *Applied Optics*, and as General Chair of the 1998 Annual meeting. Dr. Gallagher was the founding general chair of the first ITCOM conference for SPIE. He is a fellow of the IEEE, the OSA, and SPIE.

Dr Gallagher has five children and is passionate about his family. He thoroughly enjoys photography and has won a few amateur contests.

To arrange a meeting with the speaker, please contact H.J. Siegel at (970) 491-7982
or HJ@ColoState.edu.

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