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**ELECTRICAL & COMPUTER  
ENGINEERING**  
TEXAS A & M UNIVERSITY

## SEMINAR

### Room 1003 ETB

December 3, 2013 3:55-5:10 P.M.

### Measuring Current with a Negative Resistance

by

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**Abstract:** High currents are commonly measured through the use of a current transformer to step the current down to more manageable level. The residual flux in a real transformer, however, prevents this from being an error-free transfer. Modern current transformers come in varieties with different flux characteristics to let power designers "pick their poison" by optimizing for one type of measurement inaccuracy or another. We will show how we stepped back and how, by approaching the problem differently, we came up with the (deceptively) simple solution of using negative resistance circuits to just eliminate the flux and achieve breakthrough performance.

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**Garritt Foote** began his career at NI in July 1992 as an analog engineer with a BS in Electrical Engineering & Economics from Caltech. Over the last 21 years, Garritt has developed measurement and sensor conditioning products and defined new measurement and industrial product lines at NI. In addition to his analog circuit design skills, Garritt is an expert in sensors, converter technologies, and low power design techniques. He currently holds 15 patents.