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SEMINAR

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Understanding the Design of the Next Generation of Science e-Textbooks

by

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Abstract This presentation discusses a series of investigations and theoretical constructs relevant to understanding the next generation of e-textbooks in K-12 science. Examples include a modified Delphi design to assess instructional designer's perceptions of *E. O. Wilson's Life on Earth*, a high school biology textbook available for the iPad or iBooks; an investigation of the quantity and distribution of Interactive Graphical Elements (IGE) in high school physics textbooks; and an analysis of Project-Based Learning (PBL) activities in *E. O. Wilson's Life on Earth* as an exemplar for inquiry learning. Additionally, the nature of collaborative research between STEM and STEM education and the design, implementation, and evaluation of NSF Broader Impacts will be discussed.

Scott Slough, EdD, is an Associate Professor of Science Education in the Department of Teaching, Learning, and Culture at Texas A&M University. His research interests include technology-enhanced instructional design in science and mathematics; Project-Based Learning (PBL); program evaluation; geoscience education; integration of graphics and text; and change in schools, especially as it relates to technology. He is author/co-author of over 45 peer-reviewed articles, including articles in journals such as *School Science and Mathematics*, *Journal of Computers in Mathematics and Science Teaching*, *Reading Psychology*, *Journal of Educational Multimedia and Hypermedia*, and *Physics Education*. He is also co-editor of a recent book *Project-Based Learning: An Integrated Science, Technology, Engineering, and Mathematics (STEM) Approach*. Dr. Slough also has served as a PI/Co-PI on over 20 externally funded grants and contracts in excess of \$15 million and as an external evaluator on an additional \$5 million. Dr. Slough has extensive experience planning, developing, and implementing project-based, technology-enhanced K-16 STEM curricula and the recruitment and retention of underrepresented groups in STEM and STEM education.

