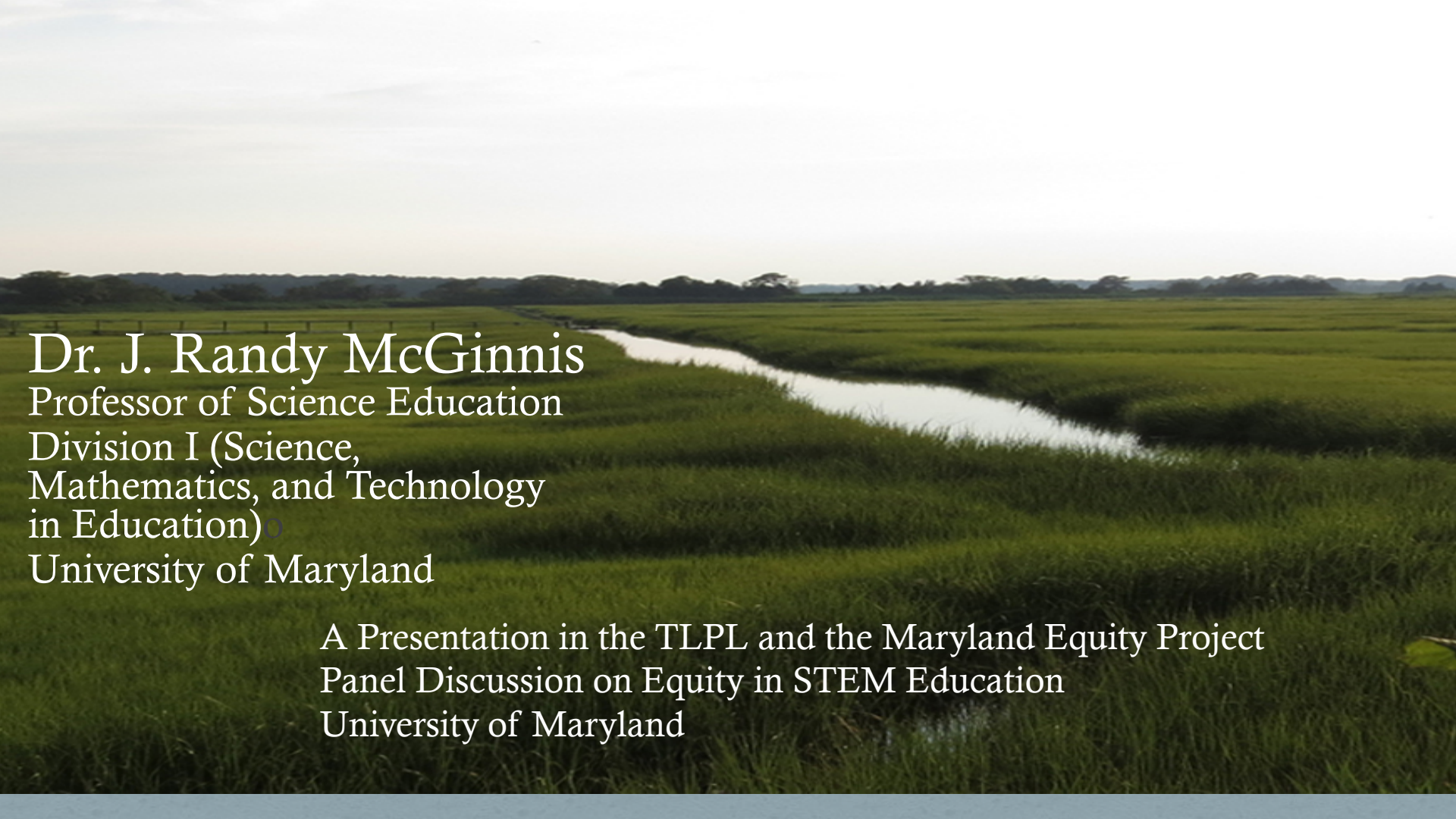

Dr. J. Randy McGinnis

Professor of Science Education

Division I (Science, Mathematics, and Technology in Education)

University of Maryland

A Presentation in the TLPL and the Maryland Equity Project Panel Discussion on Equity in STEM Education

University of Maryland

My Research Specialization

I specialize in the study of (i) science teacher learning with emphasis in socioscientific issues, exceptionality, and bridging formal and informal education and (ii) learners' understanding of science.

Studies Reported in the Literature

Investigations in:

I. Science Teacher Education Across the Continuum

II. Learning in Science

- **Focus on Traditionally Underserved Learners**
- **Focus on Climate Change Education**
  (Theoretical Framework: learning progressions with a sociocultural perspective)

Research: Without Funding

Studies in science teacher preparation that focus on gender and exceptionality

Example Publications

McGinnis, J. R, & Stefanich, G. (2007). Special needs and talents in science learning. In S. K. Abell and N. G. Lederman (Eds.), *The handbook of research in science education (*pp. 287-318*).* Mahwah, New Jersey: Lawrence Erlbaum Press.

McGinnis, J. R. (2013). Teaching science to learners with special needs. Special Issue, Diversity and Equity in Science Education (O. Lee & C. Buxton, Eds.), *Theory into Practice, 52*(1), 43-50. DOI: 10.1080/07351690.2013.743776

McGinnis, J. R., Kahn, S. (accepted, 2014). Special needs and talents in science learning. In N. G. Lederman (Ed), *The handbook of research in science (2nd Edition).* New York, NY: Routledge.

McGinnis, J. R. (2003). The morality of inclusive verses exclusive settings: Preparing teachers to teach students with developmental disabilities in science. In D. Zeidler (Ed.), *The role of moral reasoning on socio-scientific issues and discourse in science education* (pp. 195-216). Netherlands: Kluwer.

McGinnis, J. R., & Pearsall, M. (1998, October). Teaching elementary science methods to women: A male professor's experience from two perspectives. *Journal of Research in Science Teaching*, 35(8), 919-949.

Research: Supported by Funding

Major projects supported by the National Science:

• Maryland Collaborative for Teacher Preparation (MCTP)
(1994-
2004)http://terpconnect.umd.edu/~toh/MCTP/WWW/MCTPHomePage.html

• Project Nexus (www.DrawnToScience.org)
2005-2013

• MADE CLEAR (www.ClimateEdResearch.org)
2011-2017

Current Studies in MADE CLEAR

"Preparing Future Elementary Teachers to Teach About Sustainability through Non-Formal Science Education and Climate Change Education"

Research Questions:

1) **How did participants evolve in their understandings of climate change through participation in the professional development academy?**
2) **How did participants understand learning progressions as potentially informative for their science teaching practices related to climate change, particularly its regionally-relevant aspects?**

Current Studies in MADE CLEAR

"Investigating Science Educators' Conceptions of Climate Science and Learning Progressions in a Professional Development Academy on Climate Change Education"

Research Question:
In what ways can a sustainability-themed science methods course that models the teaching of climate change via a blended learning strategy contribute to teacher candidates' thinking about sustainability and climate change education?

University of Maryland MADE CLEAR Learning Sciences Research

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