



# Dupont Summit 2014

..... Science, Technology, and Environmental Policy Issues

December 5, 2014 ❖ Historic Whittemore House, Washington, DC

The Policy Studies Organization

## **Budding Scholars Conference**

Dana Martin – Pfeiffer University

### **"Application of Complex Science to the Work and Education of Nurses"**

The profession of nursing is a complex system that constantly interacts with the health care environment. Within health care facilities, patient health outcomes are influenced by many factors including, but not limited to, the educational levels of the nurses caring for the patients, nurse to patient ratios, and constant changes in the healthcare system. In nursing, clinical decisions should be based evidence-based practice, critical thinking skills, caring, and the nursing process (Dehmer, Hackl, Emmert-Streib, Schulc, & Them, 2013). While these important areas of decision-making are taught in nursing programs across the country, research indicates that baccalaureate-prepared nurses are better equipped educationally to promote positive patient outcomes; in fact, the Institute of Medicine recommended that 80% of the nursing workforce be baccalaureate-prepared by the year 2020 (Aiken, 2014; IOM, 2010). Two components of nursing education that are deeply incorporated within baccalaureate nursing education and in nursing clinical practice are pattern management and nursing research. Nurses learn to analyze patterns in patients' holistic clinical situations. Utilizing the nursing process, nurses establish circuitry to evaluate patients' responses to nursing interventions (Wolf-Branigin, 2013). From that evaluation information, nurses determine patterns over time between nursing interventions that the nurse has performed and the patients' responses to those interventions; nurses then analyze those patterns to give it meaning to the nurse-patient relationship. Next, the nurse explores the regulations and policies that guide the work of nurses and examines how delays affect patient outcomes (Wolf-Branigin, 2013). The purpose of this presentation is to identify ways in which complexity science can be applied to the work and education of nurses.

### **References**

- Aiken, L. H. (2014). Baccalaureate nurses and hospital outcomes: More evidence. *Medical Care*, 52(10), 861-863.
- Dehmer, M., Hackl, W. O., Emmert-Streib, F., Schulc, E., & Them, C. (2013). Network nursing: Connections between nursing and complex network science. *International Journal of Nursing Knowledge*, 24(3), 150-156.
- Institute of Medicine of the National Academies (IOM) (2010). *The future of nursing: Leading change, advancing health*. Washington, DC: National Academy of Sciences.
- Wolf-Branigin, M. (2013). *Using complexity theory for research and program evaluation*. New York, NY: Oxford University Press.

### **Biography**

**Dana Martin** has been a registered nurse for 17 years and received her Doctor of Nursing Practice degree in May 2014 from Gardner-Webb University in Boiling Springs, North Carolina. She currently works as an Assistant Professor at Pfeiffer University in Misenheimer, North Carolina. Her specialty areas in nursing and nursing education include community/public health nursing, nursing education simulation, nursing pharmacology, and fundamentals and concepts of nursing practice. She will be presenting a research study on nursing simulation at the American Association of Colleges of Nursing's 2014 Baccalaureate Nursing Education Conference in Baltimore in November.