

**Dr. Dylan Erin McNamara**

Assistant Professor

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**Education**

- 2006, Ph.D., Oceanography, University of California San Diego – Scripps Institution of Oceanography, Thesis Paper: Emergence in Coupled Human-Landscape Interactions: Combined Numerical and Agent-based Models for Barrier Island Resorts and Flood Disaster and Response in New Orleans.
- 1999, M.S., Physics, San Diego State University, Thesis Paper: Characteristics and Applications of a Zero Degree Twist Nematic Liquid Crystal Spatial Light Modulator.
- 1996, B.S., Physics, Salisbury University, Phi Beta Kappa, Summa Cum Laude (3.9 GPA).

**Appointments**

- August 2008 – Present, Assistant Professor, Department of Physics and Physical Oceanography, University of North Carolina - Wilmington.
- June 2007 – July 2008, Postdoctoral Research Scientist, Nicholas School of the Environment and Earth Sciences, Duke University, Supervisor – Dr. Brad Murray.
- Dec 2006 – March 2007, Postgraduate Researcher, Rohwer Laboratory, San Diego State University, Supervisor – Dr. Forest Rohwer
- 1999 – 2006, Graduate Research Assistant, Complex Systems Laboratory, Cecil and Ida Green Institute of Geophysics and Planetary Physics, Scripps Institution of Oceanography, Supervisor – Dr. Brad Werner.
- 2001 – 2002, Adjunct Oceanography Instructor, Palomar College, Supervisor – Alan Trujillo.
- 1996 – 1999, Teaching Assistant, San Diego State University Physics Department (Outstanding teaching assistant award 1998).

**Publications**

- Magliocca, N., McNamara, D., Murray, A., Long-Term Morphological Effects of Artificial Dune Construction in the Outer Banks of North Carolina. In review at *Journal of Geophysical Research – Earth Surface*.
- Smith, M., Slott, J., McNamara, D. and Murray, A., Beach nourishment as a dynamic capital accumulation problem. In Press at *Journal of Environmental Economics and Management*.
- Murray, A., Lazarus, E., Ashton, A., Baas, A., Coco, G., Coulthard, T., Fonstad, M., Haff, P., McNamara, D., Paola, C., Pelletier, J., and Reinhardt, L., Geomorphology, complexity, and the emerging science of the Earth's surface. *Geomorphology*, 103: 496-505.
- McNamara, D. and Werner, B., Coupled Barrier Island-Resort Model: 1. Emergent instabilities induced by strong human-landscape interactions. *Journal of Geophysical Research – Earth Surface*, 113, F01016, 2008.
- McNamara, D. and Werner, B., Coupled Barrier Island-Resort Model: 2. Tests and predictions along Ocean City and Assateague Island National Seashore, Maryland. *Journal of Geophysical Research – Earth Surface*, 113, F01017, 2008.
- Werner, B. and McNamara, D., Dynamics of coupled human landscape systems, *Geomorphology*, 91 (3), 2007.
- Davis, J., Smith D., McNamara, D., Cottrell, D., Campos, J., Fractional Derivatives – Analysis and Experimental Implementation”, *Applied Optics-IP*, 40(32) 5943, 2001
- Davis, J., McNamara, D., Cottrell, D., Sonehara, T., Two-Dimensional Polarization Encoding with a Phase-Only Liquid-Crystal Spatial Light Modulator, *Applied Optics-OT*, 39(10), 1549 2000
- Davis, J., McNamara, D., Cottrell, D., Campos, J., Image Processing with the Radial Hilbert-Transform: Theory and Experiments, *Optics Letters*, 25(2), 99, 2000.
- Davis, J., McNamara, D., Cottrell, D., Analysis of the Fractional Hilbert Transform, *Applied Optics-IP*, 37(29), 6911, 1998.

### **Conference and Invited Presentations**

- “Coupled Morpho-Economic Dynamics at the Coastline” Invited presentation given at the Woods Hole Oceanographic Institution, 2009.
- “What will the North Carolina Coastline Look Like in 50 years?” Invited presentation given at the UNCW Geology Dept, 2009.
- “Emergence in Coupled Human Landscape Systems” Invited presentation given at the National Center for Earth Surface Dynamics, 2008.
- “Dynamics of Coupled Human Landscape Systems” Invited presentation given at the Binghamton Geomorphology Symposium, 2007.

- “Emergence in Coupled Human Landscape Systems” Invited presentation given at EOS Department, Duke University, 2008.
- “Emergence in Coupled Human Landscape Systems” Invited presentation given at the San Diego State University, Computational Science Research Center, 2007.
- “New Orleans after Hurricane Katrina: An Unnatural Disaster?” Given at the Fall 2005 American Geophysical Union Meeting in San Francisco, California.
- “Emergent Behavior of Coupled Barrier Island - Resort Systems” Given at the Fall 2004 American Geophysical Union Meeting in San Francisco, California.

### **Synergistic Activities**

- Scientific Advisor on the Environmental Issues Team and member of the Surfrider Foundation
- Coach of the UNCW surf team
- Member of the American Geophysical Union
- Coastal Working Group Member for the Community Surface Dynamics Modeling System
- Organizing committee for Complex Systems Group at Scripps
- Frequent appearances on community radio station radioActive San Diego to explain the science of complexity

### **Collaborators/References**

- Dr. Giovanni Coco, New Zealand Institute of Water and Atmospheric Research.
- Dr. Brad Murray, Nicholas School of the Environment and Earth Sciences, Duke University.
- Dr. Martin Smith, Nicholas School of the Environment and Earth Sciences, Duke University.
- Dr. Stuart Sandin, Scripps Institution of Oceanography, University of California - San Diego.
- Dr. Brad Werner, Cecil and Ida Green Institute of Geophysics and Planetary Physics, University of California - San Diego.