

# M. Nicholas J. Moore

## Education and Professional Preparation

University of Tennessee, Knoxville	Mathematics	B.S. 2005
University of North Carolina, Chapel Hill	Mathematics	Ph.D. 2010
Courant Institute of Mathematical Sciences, NY	Mathematics	Postdoc 2010-2014

## Employment and Appointments

2014-2020	Faculty, Mathematics Department Florida State University	Tallahassee, FL
2020-2022	Faculty, Mathematics Department US Naval Academy	Annapolis, MD
2022-present	Faculty, Mathematics Department Colgate University	Hamilton, NY

## Products

### *5 most relevant products, beginning from the most relevant*

S.H. Chiu, M.N.J. Moore, B.D. Quaife. Viscous Transport in Eroding Porous Media. *Journal of Fluid Mechanics*, **893** (2020). **Selected for JFM cover art in volume 893.**

J.M. Huang and N.J. Moore. Morphological attractors in natural convective dissolution. *Phys. Rev. Lett.* **128**, (2022). **Featured in Physics and Editor's Suggestion in PRL**

B. Quaife and M.N.J. Moore. A boundary-integral framework to simulate viscous erosion of a porous medium. *Journal of Computational Physics*, **375**, 1-21 (2018).

M. McCurdy, M.N.J. Moore, X. Wang. Convection in a coupled fluid-porous media system. *SIAM Journal on Applied Mathematics*, **79**(6), (2019).

P.S. Eastham, M.N.J. Moore, N.G. Cogan, Q. Wang, and O. Steinbock. Multiphase modeling of precipitation-induced membrane formation. *Journal of Fluid Mechanics*, **888**, (2020).

### *Other Products*

M.N.J. Moore. Riemann-Hilbert problems for the shapes formed by bodies dissolving, melting, and eroding in fluid flows. *CPAM*, **70**(9), 1810-1831 (2017).

J.M. Huang, M.N.J. Moore, L. Ristroph. Shape dynamics and scaling laws for a body dissolving in fluid flow. *Journal of Fluid Mechanics*, **765**, R3 (2015).

M.N.J. Moore, L. Ristroph, S. Childress, J. Zhang, M.J. Shelley. Self-similar evolution of a body eroding in a fluid flow. *Phys. Fluid*, **25**, 116602 (2013).

Majda, A. J., Moore, M. N. J., Qi, D. (2019). Statistical dynamical model to predict extreme events and anomalous features in shallow water waves with abrupt depth change. *PNAS*, **116**(10), 3982-3987.

Bolles, C. T., Speer, K., Moore, M. N. J. (2019). Anomalous wave statistics induced by abrupt depth change. *Physical Review Fluids*, **4**(1), 011801.

### **Synergistic Activities**

1. Contributed interview and research material for educational video entitled “Using Mathematics to Optimize Wing Design” published by CPALMS. CPALMS is the State of Florida's official source for standards information and course descriptions for K-12 education.
2. Co-organized SIAM Southeast Atlantic Sectional (SEAS) meeting, with B. Quaife, X. Wang and X. Wang. The meeting was held at Florida State University in Spring 2017. The organizers encouraged undergraduate and graduate student presentations, and organized awards for the best student talks.
3. Supervised undergraduate student research with several students at FSU, the USNA, and Colgate University, including Tyler Bolles at FSU (Honors thesis advisor), Cole Martin and Luke Termorshuizen at the USNA, and Emma Zeng at Colgate University (serving as Emma’s senior thesis advisor).