

# Conor Schlick

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## SUMMARY

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Ph.D. candidate in Engineering Sciences and Applied Math at Northwestern University, researching nonlinear dynamical systems, numerical methods for solving partial differential equations, and mixing and segregation in granular flows.

## EDUCATION

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**Northwestern University**, Evanston, IL

Doctor of Philosophy candidate in Engineering Sciences and Applied Math

Anticipated 2014

Master of Science in Engineering Sciences and Applied Math

June 2011

Advisers: Richard M. Lueptow and Julio M. Ottino

**Boston College**, Chestnut Hill, MA

Bachelor of Science in Physics and Mathematics

May 2010

Magna cum Laude

## RESEARCH EXPERIENCE

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**Graduate Research Assistant**, Northwestern University, Evanston, IL

May 2011 – present

- Developed numerical methods and algorithms for solving partial differential equations
- Authored five scientific papers for journal publication
- Presented research at two conferences and numerous group meetings
- Mentored and collaborated with less experienced graduate students
- Modeled segregation in bi-disperse granular heap flow and tumbler flow
- Analyzed mixing properties of various fluid flows
- Prepared annual report for the National Science Foundation Grant CMMI-1000469

**Undergraduate Research Assistant**, Boston College, Chestnut Hill, MA

June 2009 – August 2009

- Numerically researched phonon dispersions in graphite
- Presented at three research meetings

**Undergraduate Research Assistant**, Boston College, Chestnut Hill, MA

October 2008 – May 2009

- Experimentally studied carbon nanotubes and thermoelectric materials
- Assisted graduate students, prepared samples, and other general laboratory duties

## TEACHING EXPERIENCE

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**Teaching Assistant**, Northwestern University, Evanston, IL

September 2011 – June 2012

- Teaching assistant for courses in complex networks, vector calculus, and differential equations
- Led recitation sessions, held office hours, graded exams and homework

**Grader and Tutor**, Boston College Math Department, Chestnut Hill, MA

September 2007 – May 2010

- Tutored students in introductory mathematics courses
- Corrected homework assignments for various mathematics courses

## SKILLS

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- Numerical methods and algorithms, Data analysis, Parallel computations, Mathematical modeling.
- Proficient in MATLAB, C++, and Mathematica.
- Experienced in Technical presentations and Technical writing

## HONORS

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- Paul J. Sally award for Excellence in Mathematics, Boston College Mathematics Department
- Member of Phi Beta Kappa

2010  
2010

## PROFESSIONAL AFFILIATIONS

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- Pi Mu Epsilon (math honor society)
- Society for Industrial and Applied Mathematics
- American Physical Society

## PUBLICATIONS

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**Conor P. Schlick**, Ivan C. Christov, Paul B. Umbanhowar, Julio M. Ottino, and Richard M. Lueptow, "A mapping method for distributive mixing with diffusion: Interplay between chaos and diffusion in time-periodic sine flow", *Phys. Fluids* 25, 052102 (2013).

Yi Fan, **Conor P. Schlick**, Paul B. Umbanhowar, Julio M. Ottino, and Richard M. Lueptow, "Modeling size segregation of granular materials: the roles of segregation, advection, and diffusion", to appear in *J. Fluid Mech.*

**Conor P. Schlick**, Paul B. Umbanhowar, Julio M. Ottino, and Richard M. Lueptow, "Competitive autocatalytic reactions in chaotic flows with diffusion: Final state prediction from the finite-time Lyapunov exponent", submitted to *Chaos*

**Conor P. Schlick**, Yi Fan, Austin Isner, Paul B. Umbanhowar, Julio M. Ottino, and Richard M. Lueptow, "Modeling size segregation of granular materials in bounded heaps ", in preparation for *Powder Technol.*

**Conor P. Schlick**, Yi Fan, Paul B. Umbanhowar, Julio M. Ottino, and Richard M. Lueptow, "Granular segregation in bidisperse tumbler flow: A parameter study and scaling laws", in preparation for *Phys. Rev. E*

## CONFERENCE PRESENTATIONS

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**Conor P. Schlick**, Ivan C. Christov, Paul B. Umbanhowar, Julio M. Ottino, and Richard M. Lueptow, "A Mapping method for mixing with diffusion", American Physical Society's Division of Fluid Dynamics, San Diego, CA, 2012.

**Conor P. Schlick**, Yi Fan, Paul B. Umbanhowar, Julio M. Ottino, and Richard M. Lueptow, "Modeling segregation of bidisperse granular materials: A parametric study", American Physical Society's Division of Fluid Dynamics, Pittsburgh, PA, 2013.

**Conor P. Schlick**, Paul B. Umbanhowar, Julio M. Ottino, and Richard M. Lueptow, "Chaotic flow and the finite-time Lyapunov exponent: Competitive autocatalytic reactions in advection-reaction-diffusion systems", American Physical Society's Division of Fluid Dynamics, Pittsburgh, PA, 2013.