

Kenneth Ball
Curriculum Vitae

NCSU Dept. of Mathematics
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Education

Ph.D.,	Mathematics, North Carolina State University,	2012 (Expected)
M.S.,	Mathematics, North Carolina State University,	2009
B.S. ^{†‡} ,	Physics, North Carolina State University,	2007
B.S. [†] ,	Applied Mathematics, North Carolina State University,	2007

[†]Magna Cum Laude

[‡]Completed college honors program

Professional Experience

2011–Present	Graduate Research Assistant	NCSU Dept. of Mathematics
2007–2011	Graduate Teaching Assistant	NCSU Dept. of Mathematics
2007	Physics Problem Coder	WebAssign, Inc.
2006–2007	Lab Instructor	NCSU Dept. of Physics
2004–2005	Lecture Assistant/Maple TA	NCSU Dept. of Mathematics

Research Experience

2008–Present	Worked with research advisor Dr. Dmitry Zenkov on variational integrat and the dynamics of particle systems.
2010–2011	Participated in year-long seminar on mathematical methods of general relativity led by James York, a recipient of the Heinemann prize.
2010	Attended BMS Summer School 2010 on <i>Discretization in Geometry and Dynamics</i> at Technische Universität Berlin. BMS is a joint graduate school of TU Berlin, Free University Berlin and Humboldt University.

Honors and Awards

2011–2012	Research support via NSF Grant DMS-0908995 (PI: Dmitry Zenkov)
2011	Research support via NSF Grant DMS0604108 (PI: Dmitry Zenkov)
2010	Full support for travel/lodging/registration at BMS Summer school 2010 provided by BMS (see above)
2008	REG (Research Experience for Graduate Students) Research and Travel Grant by NSF/NCSU Dept. of Mathematics

Publications

K. Ball and D. Zenkov, The Hamilton-Pontryagin Principle and the Hamel Equations, in Preparation.

K. Ball and D. Zenkov, Variational Integrators and Discrete Hamel Equations, in Preparation.

Presentations

2012	<i>Difference Equations for Long-Term Simulation of Mechanical Systems</i> , Contributed Talk, JMM: Boston, MA.
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- 2011 *The Hamilton-Pontryagin Principle and the Hamel Equations*, Minisymposium Talk, SIAM Southeast Atlantic Section Conference: Charlotte, NC.
- 2010 *The Hamilton-Pontryagin Principle and the Hamel Equations*, Poster Presentation, NCSU Graduate Research Symposium: Raleigh, NC.
- 2009 *The Hamilton-Pontryagin Principle and the Hamel Equations*, Poster Presentation, UNC-CH & College of Charleston (Cha-Cha) Days: Orlando, FL.

Professional Development

- 2011 *Faculty Careers Workshop*: Seminar led by Drs. Richard Felder and Rebecca Brent focusing on success strategies for early faculty members, course development, and active learning in the classroom.
- 2010–2011 *Preparing the Professoriate*: Successfully completed year-long seminar program administered by NCSU Graduate School. The program (which has a competitive application process open to doctoral candidates in all Ph.D. granting departments at NCSU) consisted of professional development in teaching and seminars focused on guiding participants through the early years of an academic career. Components of PTP included a semester of teaching observation, a semester of teaching an advanced undergraduate class as primary instructor, and biweekly seminars.

Teaching Experience (as Instructor of Record*)

<i>Semester</i>	<i>Course</i>	<i>Class Size</i>
Summer 2011	MA 341 Applied Diff Eqs.	20
Spring 2011	MA 341 Applied Diff Eqs.	100
Fall 2010	MA 141 Calculus I	100
Summer 2010	MA 111 Precalculus [†]	20
Spring 2010	MA 107 Precalculus I	36
Summer 2009	MA 111 Precalculus [†]	20
Spring 2009	MA 108 Precalculus II	30
Fall 2008	MA 107 Precalculus I	60

*Responsibilities fulfilled as instructor of record: writing syllabus, writing tests and final exam, preparing all lectures and supplementary course assignments, lectures, holding office hours, supervising assigned TA's and graders, submitting final grades to university registrar.

[†]Taught as a component of the Summer Transition Program (STP) administered by the College of Engineering; a Summer residential program for incoming minority engineering freshmen to get a head-start on math and science classes prior to the start of the regular academic year.