

# Dr. Nicholas E. Long

Stephen F. Austin State University  
Department of Mathematics and Statistics  
P.O. Box 13040, SFA Station  
Nacogdoches, TX 75962-3040

Phone: (936) 468-1822  
[longne@sfasu.edu](mailto:longne@sfasu.edu)  
<http://www.faculty.sfasu.edu/longne>

Research Interests	Symbolic Dynamics, Ergodic Theory, Algebraic Dynamics, and K-Theory.	
Education	Ph. D., Mathematics, Dissertation: Involutions of Shifts of Finite Type Advisor: Mike Boyle	May 2008
	B.S., Mathematics and B.S., Physics Summa Cum Laude, North Carolina State University	May 2002
Professional and Teaching Experience	<b>Stephen F. Austin State University</b> Nacogdoches, TX <i>Assistant Professor</i> Teaching Mathematics and Statistics Courses	June 2008-Present
	<b>University of Maryland</b> , College Park, MD <i>Teaching/Research Assistant</i> Nine semesters sole-contact teaching of algebra/pre-calculus, calculus, probability, introductory statistics, and mathematics for elementary education. Duties include writing syllabi, lesson plans, quizzes, and exams as well as grading and office hours. Led discussion sections for calculus, linear algebra, and engineering statistics. Duties included writing quizzes and sample problems as well as holding office hours, grading quizzes, exams, and homework. Proctored placement exams for incoming students and served as academic advisor to 1 <sup>st</sup> semester engineering students during initial course registration. Personal tutoring for all levels of undergraduate mathematics and statistics including abstract algebra and differential equations.	Aug. 2002 - May 2008
	<b>Los Alamos National Labs</b> , Los Alamos, NM <i>Graduate Research Assistant</i> Analysis of classical cosmologies and application for new quantization scheme. Programmed numerical simulations in C++ for quantized systems.	May 2002 - Dec. 2002
	<b>North Carolina State University</b> , Raleigh, NC <i>Research and Teaching Assistant</i> Teaching duties included leading and grading physics labs, leading calculus discussion sections, tutoring in Physics Tutorial Center, and grading for various undergrad math classes. Research projects included physical optics, nuclear magnetic resonance, and gravitation. Personal tutoring for undergraduate mathematics, engineering, and physics courses.	Aug. 1998-May 2002
	<b>Nortel Networks</b> and <b>North Carolina State University/ARL</b> , Raleigh NC <i>Summer Research Project and Consultant</i> Assisted in statistical analysis of engineering data and programming Excel for automated presentation of analysis.	May 1997-Sept 1997

Publications	Fixed Point Shifts of Inert Involutions <i>In Preparation</i>	
	Mixing Shifts of Finite Type with Non-Elementary Surjective Dimension Representations <i>In Preparation</i>	
	Strictly Order n Automorphisms of 1-Sided Shifts of Finite Type <i>In Preparation</i>	
	Involutions of Shifts of Finite Type: Fixed Point Shifts, Orbit Quotients, and the Dimension Representation, Ph.D Thesis <i>University of Maryland.</i>	
Mathematical Activities and Talks	R. W. Yeagy Colloquium Speaker	Spring 2008
	<a href="#">Symbolic Dynamics: Fixed Point Sets, Factor Maps, and Embeddings</a>	
	Student Dynamics Seminar	Fall 2007
	Co-founder and organizer	
	Talks on fixed point sets of shifts of finite type.	
	Dynamical Systems Inset, SciDAC Review Issue 3 Spring 2007 p. 48 ♦	
	University of Maryland VIGRE Research Interaction Team, <i>Symbolic Dynamics</i>	2004-2006
	Presented series of talks on	
	• The classification problem of irreducible shifts of finite type	Fall 2004
	• The action of finite order automorphisms on periodic points	Spring 2005
	• Introduction to K-Theory	Spring 2006
	Preliminary Oral Exam, University of Maryland	Oct. 2005
	<i>Counterexamples to the Shift Equivalence Conjecture</i> ♦	
	Spotlight on Graduate Research, Univ. of Maryland	2006
	Presentation: Embedding Finite Order Automorphisms ♦	
	Writing: Polynomial Matrices in Symbolic Dynamics ♦	
	University of Maryland VIGRE Research Interaction Team, <i>Algebraic Topology</i>	2003
	Honors Program Presentation, NCSU	April 2002
	<i>Negative Indices of Refraction</i>	

♦ An online copy can be found on my webpage at [www.faculty.sfasu.edu~longne](http://www.faculty.sfasu.edu~longne)

Awards and Honors	VIGRE Research Fellowship	Spring 2008
	Dissertation Fellowship University of Maryland Math Dept.	Fall 2007
	Summer Support from NSF Grants	Summer 2005, 2006
	Outstanding Undergraduate Teaching Award Dept. of Physics, North Carolina State University	May 2002
	College of Physical and Mathematical Sciences Honors Program Mathematics and Physics, North Carolina State University	May 2002
	Dean's List, North Carolina State University	1998-2002
	Mathematics Scholarship, North Carolina State University	Fall 1998
	COMAP Mathematical Contest in Modeling <i>Outstanding Winner</i>	Spring 1998
	Member of Pi Mu Epsilon	
Computer Skills	Programming in C/C++, Matlab, Maple, and LaTeX. Familiarity with Windows and Unix/Linux operating systems. I also have an interest in hardware and building computers.	
Service	Honor Council Board Member – Judicial Review Graduate student member of the board that reviews claims of academic dishonesty.	2004-2007
	Mentor to Incoming Graduate Students, University of Maryland	2004-2007
	Panelist, "Applying for Graduate School," UMD-CP	2005
	Volunteer tutoring for disable students at NCSU	2001-2002
Conferences Attended	Fall 2007 UMD-Penn State Dynamics Conference	State College, PA
	Spring 2007 UMD-Penn State Dynamics Conference Attended conference and organized the food and graduate student volunteers.	College Park, MD
	Spring 2006 UMD-Penn State Dynamics Conference Attended conference and organized the food and graduate student volunteers.	College Park, MD
	Fall 2005 Midwestern Dynamics Conference	Evanston, IL
	Spring 2005 UMD-Penn State Dynamics Conference	College Park, MD
	Fall 2004 UMD-Penn State Dynamics Conference	State College, PA
	Spring 2004 UMD-Penn State Dynamics Conference	College Park, MD