

# Kris H. Green

## Home

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## Education

- **Ph.D. Applied Mathematics**, University of Arizona, May 1999. Dissertation: *Gravitational Aspects of Tachyon Domain Walls*.
- **MS Applied Mathematics**, University of Arizona, December 1996.
- **BS Engineering Physics**, University of Tennessee, *Cum Laude*, May 1994. Honors Thesis: *An Analysis of Planetary Helium*.

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## Professional Experience

- **Director of the Science Scholars Program**, St. John Fisher College. Spring 2002-present.
- **Assistant Professor**, St. John Fisher College, Math Science and Technology Department. September 1999 to present.
- **Graduate Associate in Teaching**, University of Arizona, Mathematics Department, August 1994 to May 1999. Responsible for preparing and presenting lectures, writing and grading tests, grading homework and assigning course grades for a variety of courses over five years.
- **Adjunct Faculty**, Pima Community College, West Campus, Summer 1997. Served as an adjunct faculty member. Taught basic mathematics course for the Summer Bridge Program to help first generation college students make the transition to college.
- **Math and Science Tutor**, University of Tennessee, Knoxville, September 1992 to December 1993. Served as a math, physics, and engineering tutor for the Educational Advancement Program, helping non-traditional and disadvantaged students survive college.
- **Summer Science Fellow**, University of Tennessee, Physics Department, Summer 1993. Worked under Dr. J. Burgdorfer and Dr. J. Mueller numerically studying the excited states of helium.
- **Summer Science Fellow**, University of Tennessee, Physics Department, Summer 1992. Worked under Dr. A. Sanders studying ways to minimize self-gravitation of microgravity crystal growing experiments in a satellite.

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## Publications

- "A Solution to Einstein's Field Equations for a Tachyonic Gas: Possible Astrophysical Applications", with W. John Cocke. *Astrophysics and Space Science*. 286(2): 327-346. Jan 2003.
- NCATE Program Report and rejoinders: Undergraduate 7-12 Mathematics Teacher Preparation Program at Fisher.
- NCATE Program Report and rejoinders: GMST 7-12 Mathematics Teacher Preparation Program at Fisher.
- NCATE Program Report and rejoinders: GMST 7-12 Science Teacher Preparation Program at Fisher.
- "It's not the fall that gets you, it's the sudden stop at the end", Report for the Southeastern Caving and Rescue Group.
- "Creating Successful Calculus Writing Assignments", PRIMUS: *Problems, Resources, and Issues in Mathematics Undergraduate Studies*, Volume XII, Number 2, June 2002.
- "An Analysis of Planetary Helium", *Research Papers from the 1993 Science Alliance Research Fellows Program in Physics*, University of Tennessee, 1993.
- "Mathematically Minimizing Gravity", *Research Papers from the 1992 Science Alliance Research Fellows Program in Physics*, University of Tennessee, 1992.

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### Teaching Experience

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#### St. John Fisher College, Rochester, NY

- Fall 2003. MATH 170 Introduction to Mathematical Modeling. GMST 511 Integrating Instructional Technology into Learning. MSTE 310 Dynamics of the Physical World. ITDY 160 Science Scholars Learning Community. Continued supervision of one GMST student in his research (GMST 641). Worked with one Mathematics student on Independent study for Science Scholars Research. ITDY 162 Sophomore Science Scholars Seminar. ITDY 262 Junior Science Scholars Seminar.
- Spring 2002. MATH 222 Differential Equations. HNRS 116 May the Force Be With You. MSTA 130 Mathematical Modeling and Quantitative Analysis (2 sections). Continued supervision of four GMST students in their research (GMST 641). ITDY 162 Sophomore Science Scholars Seminar.
- Fall 2002. MATH 170 Introduction to Mathematical Modeling. MSTE 310 Dynamics of the Physical World. MSTA 160 Science Scholars Learning Community. GMST 511 Integrating Instructional Technology into Learning. Supervised four GMST students in their research (GMST 640). ITDY 162 Sophomore Science Scholars Seminar.
- Spring 2002. MSTA 130 Mathematical Modeling and Quantitative Analysis (2 sections). MATH 222 Differential Equations. MSTA 161 Science Scholars Learning Community II.
- Fall 2001. MSTA 130 Mathematical Modeling and Quantitative Analysis. MSTE 310 Dynamics of the Physical World. MSTA 160 Science Scholars Learning Community (2 sections).
- Summer 2001. MSTE/MATH 211 Mathematical Explorations in the Real Numbers.
- Spring 2001. MATH 122 Calculus II. MSTA 130 Mathematical Modeling and Quantitative Analysis. MATH 222 Differential Equations. GMST 511 Instructional Technology in Learning (with Beth Napoli).
- Fall 2000. MATH 120 Calculus I. MSTE 310 Dynamics of the Physical World. MSTE 211 Mathematical Explorations in the Real Numbers. CSCI 150 Computer Applications I. MSTA 130 Mathematical Modeling and Quantitative Analysis.
- Summer 2000. GMST 570 Modeling Change in Mathematics and Science.
- Spring 2000. MATH 122 Calculus II. MSTE 310 Dynamics of the Physical World. GMST 511 Integrating Technology into Learning (with Beth Napoli).
- Fall 1999. MATH 120 Calculus I. MSTE 211 Mathematical Explorations in the Real Numbers. GMST 500 Foundations of Math Science and Technology (with Doug Llewellyn).

#### University of Arizona, Tucson, AZ

- Spring 1999, Fall 1998, Spring 1998, Spring 1997, Fall 1996. MATH 223 Multivariable Calculus.
- Fall 1997, Summer 1997. MATH 254 Introduction to Ordinary Differential Equations.
- Summer 1996, Fall 1995 (two sections), Fall 1994. MATH 116 Introduction to College Algebra.
- Spring 1996. MATH 123 Elements of Calculus for Business Students.
- Spring 1995, Intermediate College Algebra.

#### Pima Community College, Tucson, AZ

- Summer 1997, Basic Mathematics, for the *Bridges for Education* Program.

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### Computer Skills

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- Experience designing stand-alone software applications for learning with Macromedia Flash MX.
- Expertise in Microsoft Office, particularly Excel and the add-in StatPro.
- Expertise with *ODE Architect*, software for dynamically solving differential equations.
- Experience designing simulations and using them in class with *Interactive Physics 2000*.
- Experience programming in FORTRAN, C, Pascal, and Basic.
- Familiar with Windows, DOS, and UNIX operating systems.
- Word processing in LaTeX, Microsoft Word.
- Familiarity with HTML, Matlab, Maple, Mathematica, and other software packages.

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## *Honors*

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- Received faculty development grant for Summer 2003 – Spring 2004 (\$2700) for development of interactive tools to enhance the teaching of MSTA 130.
- Received a “Shining Star” award from a student MSTA 130 (Spring 2003).
- Nominated for Teaching Award (2001-2002) at St. John Fisher College
- Project NExT Fellow – MAA sponsored project on New Experiences in Teaching (1999-2000).
- Earned brown belt in Isshinryu Karate in 1993.
- Tennessee Scholar (1990-1994)
- Barry Goldwater Scholar (Fall 1992-Spring 1994)
- National Merit Finalist (1990)

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## *Activities and Professional Development*

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### Professional Organization Memberships

- National Council of Teachers of Mathematics (NCTM) Member (2000-present).
- Mathematical Association of America (MAA) Member (1999-present).
- American Mathematical Society (AMS) Member (1994-present).

### Course Development

- Working on MSTE 215 Dynamics of the Physical World – a blend of the original MSTE 310 that includes Earth Science topics (looked at through the lens of physics)
- New honors course (HNRS 116) for both first year Science Scholars and first year Honors students. This is a science content core course using the *Star Wars* films (and related materials) as its basis.
- Developed (and continuing to develop) MSTA 130 Mathematical Modeling and Quantitative Analysis (with Allen Emerson). This course has now completely replaced the old MATH 117 course.
- Science Scholars Learning Community (MSTA 160 and 161). This was completely revised in fall 2002 (new partner in the LC, new topic) and it now satisfies the writing requirement for ENGL 101. Dr. Franz and I have further refined the course and writing assignments.
- Developed GMST 570 Modeling Change in Mathematics and Science.
- Developed MSTE 310 Dynamics of the Physical World (now taught 5 times).
- Developed MSTE 511 Integrating Technology into Learning (with Beth Napoli). Revised this course and taught it solo in fall 2002. Further revision for solo teaching in Fall 2003 and Spring 2004.

### Program and Curriculum Development

- Development of the Science Scholars Program. I initiated the growth of the scholarship program from just a freshman-year learning community to a four-year program including a research component and a seminar providing students an opportunity for shadowing experiences and professional development.
- Developed new curriculum for MSTE – which is being renamed to MSTI (Mathematics Science and Technology Integration) to re-focus the major as an interdisciplinary liberal arts program in mathematics and science, using technology.
- Working to revise MATH major to meet NCATE standards (in conjunction with department)

### Committee Work

- Core revision committee representing the mathematics, natural sciences, and technical sciences. St. John Fisher College, Fall 2003 – present.
- Served on the PETAL (Program for the Enhancement of Teaching And Learning) committee, Fall 2001 through Spring 2003. We sponsored several faculty development workshops and created a “Teaching and Learning Circle” initiative to allow faculty ongoing faculty development with their peers.
- Serve on the Educational Technology Steering Committee (ITSC) since Fall 2000. Also chaired the sub-committees on facilities and laptop initiatives at St. John Fisher College. This sub-committee coordinated

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efforts at design and supervised construction of the new Ralph Wilson Building to ensure that the classroom space would meet faculty expectations and standards.

- Served on the search committee to hire new mathematics/mathematics education faculty member in spring of 2001. Committee recommended hiring of Dr. Erica Johnson.
- Member of the organizing committee for the first annual Mathematics Graduate Day. University of Arizona. Spring 1999.

### Other Professional Development Activities

- Developed and maintained (until Summer 1999) web site for vector calculus located at [www.math.arizona.edu/~vector](http://www.math.arizona.edu/~vector).
- Organized the Applied Math Brown Bag Graduate Seminar at University of Arizona (1996-1997).

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## *Presentations*

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### Contributed Paper Sessions

- Session on Courses Below Calculus: A New Focus: “A New Vision of Mathematics for Management Students”. With Dr. Allen Emerson. AMS/MAA Joint Meetings. January 2004.
- Session on Programs that Illustrate Recommendations of the Mathematical Education of Teachers Document: “I Saw Two Paths: Parallels Between the MET Document and the MST Major at SJFC”. AMS/MAA Joint Meetings. January 2001.
- Session on Implementation of National Projects on Local Campuses: “Mathematics, Science and Technology Integration for Teachers”. January 2001.
- Session on Innovative Uses of the World Wide Web in Teaching Mathematics: “Group Journal Writing Using BlackBoard CourseInfo”. January 2001.
- MAA Session at Mathfest 2000 on Innovative Uses of the Internet in Mathematics Classrooms: “Three Different Methods for Incorporating the Internet”. August 2000.
- Summer Science Alliance in Physics Mini-Conference: “Planetary States of Helium”. University of Tennessee. August 1993.
- Southeast Regional Students of the American Physical Society Meeting: “Mathematically Minimizing Gravity”. Oak Ridge National Laboratory. Spring 1993.
- Summer Science Alliance in Physics Mini-Conference: “Mathematically Minimizing Gravity”. University of Tennessee. August 1992.

### Poster Presentations

- Project NExT/Young Mathematician’s Network Poster Session: “An Alternative Mathematics Course for Business/Management Majors”. AMS/MAA Joint Meetings. January 2002.
- “Alternative Worlds: Building Planets for Fun and Understanding”. Learning Community Workshop at St. John Fisher College. Fall 2001.
- Project NExT/Young Mathematician’s Network Poster Session: “Between Science Fiction and Mathematical Fact: the Tachyon”. AMS/MAA Joint Meetings. January, 2000.
- Mathematics Graduate Day Poster Session: “Interactions of Tachyon Walls with Galaxies”. University of Arizona. Spring 1999.

### Workshops

- “The Hardest Part of Teaching”. PETAL Workshop for St. John Fisher faculty. March 2003.
- “The Write Way to Learn Mathematics I and II”. Workshops for Pittsford, Penfield and Brighton Middle and High School Mathematics Teachers. With Casey Vaccaro. November 2000.
- “Communicating Mathematics”. Workshop for Webster Middle and High School Mathematics Teachers. March 22, 2000.
- Assisted in producing the Tech Prep Sessions for Area High School teachers (with Beth Napoli). St. John Fisher College. Fall 1999 – Spring 2000.

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- RIMS Workshop for High School Students: “Einstein's Way Cool Notion of Motion” (with Brian Walton and Guadalupe Lozano). University of Arizona. October 17, 1998. Repeated on October 24, 1998.

### Panel Discussions and Swap Sessions

- Sharing Session on Teacher Education Programs for Project NExT Fellows: “Overview of MST Courses at SJFC”. AMS/MAA Joint Meetings. January, 2000.
- Mathematics Graduate Day Panel Discussion: “Mathematics – The Phantom Menace”. University of Arizona. Spring 1999.

### Other Presentations

- Presentation to the Business College regarding the content and philosophy of MSTA 130. Discussion on how to meet the needs of the management students and faculty with the course.
- Faculty development workshop at Fisher: Experiences with Teaching Writing Across the Curriculum. January 2003.
- Math Awareness Month at Fisher: “An Inflationary (Balloon) Model of the Universe”. April 26, 2001.
- CCLI Consortium Meeting of the Seven Colleges: “Overview of MST Courses” (with Carol Freeman). SUNY Oswego. October 1-2, 1999.
- Entry Level Mathematics Colloquium: “The Roots of MAPLE Run Deep” (with Ed Alexander). University of Arizona. Spring 1999.
- Applied Math Graduate Student Brown Bag: “In This Episode, MacGyver Builds a Time Machine Out of String”. University of Arizona. Fall 1998.
- First Year Graduate Student Review: Vector Calculus. University of Arizona. September 1998.
- First Year Graduate Student Review: Vector Calculus (with Karl Bauer). University of Arizona. September 1997.
- First Year Graduate Student Review: Phase Plane Analysis. September 1997.
- Review of Calculus: Paid by Hughes Engineering to help with returning masters and MIS students. Tucson, AZ. Fall 1997.
- Applied Math Graduate Student Brown Bag: “Kaluza-Klein Theories in Relativity”. University of Arizona. Fall 1996.
- Applied Math Graduate Student Brown Bag: “Fish and Relativity Stink in Three Days: An introduction to Relativity for Mathematicians”. University of Arizona. Spring 1996.

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### **Workshop Participation**

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- Faculty development workshop. St. John Fisher College. January 2003.
- Teaching and Learning Circle: Writing Across the Curriculum. St. John Fisher College. Summer and Fall 2002.
- Eisenhower Grant Workshops. Fall 2002.
- PETAL Workshop. St. John Fisher College. January 2000.
- Eisenhower Grant Participant – Partners in Structuring Student Centered Learning Environments in Math Science and Technology. St. John Fisher College. Fall 1999 – Fall 2001.

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### **Conferences Attended**

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- AMS/MAA Joint Meeting in Phoenix, AZ. January 7-11, 2004.
- Seaway Section Meeting of the MAA. Rochester Institute of Technology. November 2003.
- ICTCM (International Conference on Technology in Collegiate Mathematics Education) in Orlando, FL. November 2002.
- Learning Community Conference in Maryland. March 2002.
- AMS/MAA Joint Meeting in San Diego. January 5-9, 2002.
- Syllabus Conference in Santa Clara, CA. Summer 2001.
- AMS/MAA Joint Meeting in New Orleans. January 10-13, 2001.
- Seaway Section meeting of the MAA. SUNY Fredonia. October 2000.
- Project NExT (Part III) for 1999-2000 Fellows at MAA Mathfest in Los Angeles. August 2000.

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- AMS/MAA Joint Meeting in Washington, DC. January 18-23, 2000.
- Project NExT (Part II) for 1999-2000 Fellows at AMS/MAA Joint Meetings in Washington, DC. January 18-22, 2000.
- MathFest (MAA National Meeting) at Brown University in Providence, RI. August 1999.
- Project NExT (Part I) for 1999-2000 Fellows at MAA Mathfest in Providence, RI. August 1999.
- Mathematics Graduate Day for the Department of Mathematics and the Program in Applied Mathematics at the University of Arizona. May 1999.
- Seventh Annual Teaching and Technology Conference for Arizona Educators in Tucson, AZ. January 23, 1999.
- AMS/MAA Joint Meeting in San Antonio Texas. January 13-16, 1999.
- ITEC: Education Technology Exposition in Tucson, AZ. Spring 1998.
- International Conference on Modern Mathematical Models of Time and their Applications to Physics and Cosmology in Tucson, AZ. April 11-14, 1996.
- Southeast Regional Meeting of the American Physical Society at Oak Ridge National Laboratory. May 1993.

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### **Community Service**

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- Neighborhood volunteer for The Leukemia and Lymphoma Society, Fall 2003.
- Youth program co-director, Twelve Corners Presbyterian Church, 2002-2003 Academic Year.

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### **Personal Interests**

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- Train in the martial arts: Isshinryu Karate and Tai Chi (Yang style, simplified form).
- Avid *Star Wars* collector and scholar.
- Enjoy hiking, rock climbing and biking.