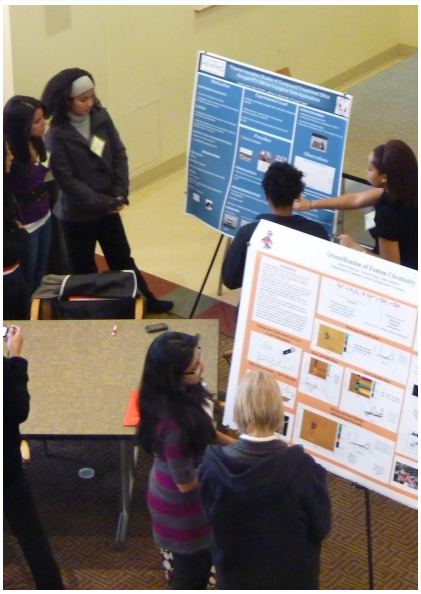
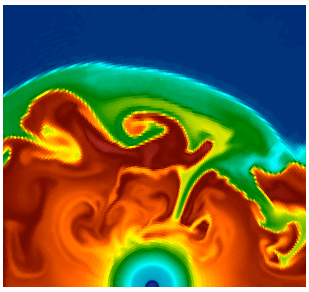
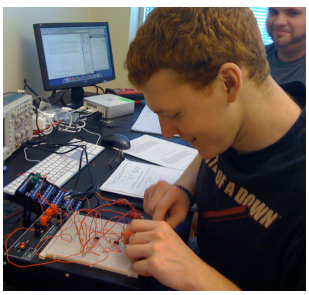




Undergraduate Physics Majors Handbook




2011-2012

Department of Physics
North Carolina State University
www.physics.ncsu.edu

Welcome

Director of Undergraduate Programs

John Blondin
400A Riddick Hall
Tel: 919.515.7096
Email: john_blondin@ncsu.edu
http://astro.physics.ncsu.edu/~blondin/research

On behalf of faculty, students, and staff, welcome to the Physics Department at North Carolina State University.

Our undergraduate program will challenge you every step of the way, and prepare you for whatever career you choose, be it in industry or consulting, teaching, or continuing on to do graduate work in physics or related fields. We believe that a strong background in physics is good preparation for whatever lies ahead.

Our upper-level core physics classes provide a rigorous coverage of physics that will deepen your understanding of, and ability to work with the basic principles of physics. Electives ranging from nuclear physics to astrophysics will introduce you to modern, advanced topics. We also strongly encourage all of our undergraduates to participate in current research, either with faculty on campus or through undergraduate research programs across the country and the globe.

The physics major at NC State combines the resources of a major research university with the ambience of a small college. Our ratio of physics majors to faculty of about 4 to 1 allows us to offer small classes, personal attention, and unparalleled opportunities for involvement in research. Our award-winning researchers and teachers guide students through a broad, rigorous curriculum, and our graduates have been highly successful in both academia and industry. Twelve of our faculty are members of the NC State Academy of Outstanding Teachers, six are Alumni Distinguished Undergraduate Professors, and fifteen are Fellows of the American Physical Society. Five faculty are recognized for both excellent teaching (ADUP) *and* research (APS Fellows).

Our student-faculty interaction is a hallmark of our undergraduate program. Take advantage of their open doors – get to know the faculty.

Quick Notes

- NC State University
  Department of Physics
  421 Suite, Riddick Hall
  2401 Stinson Drive
  Raleigh, NC 27695

  Tel: 919.515.2521
  Fax: 919.515.6538
  Web: www.physics.ncsu.edu

- Looking for physics students? Check out the SPS room, 317 Riddick Hall, or at www.physics.ncsu.edu/sps/

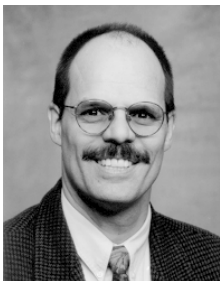
Quick Facts

- 53 Physics Faculty
- 198 Undergraduate Majors
- 16 PY students won UR grants in 2011
- $8M/year Research Funding
- 26 Bachelors Degrees awarded 5/2011
- 35 PY Freshmen 8/2011
- Recent graduate school destinations:
  - MIT
  - Berkeley
  - Harvard
  - Chicago
  - Cornell
  - Stanford
  - Illinois
  - Wisconsin

Who's Who

Department Head
Dr. Michael Paesler
Suite 421 Riddick Hall
paesler@ncsu.edu

If you have any concerns that are not being met by your instructors, mentors, or advisors, Professor Paesler can help ensure that your experience in our Department is a positive one.



Dir. of Graduate Programs
Dr. Harald Ade
204A Riddick Hall
py-grad-program@ncsu.edu

Professor Ade is Director of the Graduate Physics Program, and can be a valuable source of information for physics majors thinking about graduate school.

Executive Assistant
Ms. Rebecca Savage
Suite 421 Riddick Hall
rebecca_savage@ncsu.edu

Becky is the ultimate source of information in the Department. If you can't get an answer to your question from the rest of the faculty or staff, go ask Becky.

Undergraduate Secretary
Ms. Ina Lunney
204 Riddick Hall
ina_lunney@ncsu.edu

Ina serves as the secretary for both the graduate and undergraduate programs. Most academic forms either begin or end in her office. Either Ina, your Advisor, or Professor Blondin should be your first point of contact for Department-related questions.

Assistant Dept. Head
Mr. Keith Warren
Suite 421 Riddick Hall
keith_warren@ncsu.edu

Keith manages much of the operation of the Department, including support personnel, classes and laboratories.

Department Accountant
Ms. Chastity Buehring
Suite 421 Riddick Hall
chastity_buehring@ncsu.edu

Chastity handles all financial transactions for the Physics Department, including the student bi-weekly payroll and any University-related travel.

Advisors

Physics majors at NC State are assigned an academic advisor from the Physics Faculty who will assist students in planning academic programs suited to their interests and abilities and their career objectives. Students are encouraged to consult with their advisor whenever they have questions or concerns, but at a minimum, students must meet with their advisor once a semester prior to registering for classes for the next term.

The Director of Undergraduate Programs in Physics (DUP) serves as the academic advisor for entering freshmen prior to and during their first semester on campus. In the spring of their first year, most physics majors will be assigned to another member of the faculty who will serve as their advisor for the remainder of their time in the physics program. These advisors have less then a dozen advisees, helping maximize personal attention to each student. Students who are not yet matriculated into the Physics Program are encouraged to contact the DUP with their questions and concerns. If at any time, a physics major wishes to work with a different advisor, he/she may request a change of advisors from the DUP.

Talk with your Advisor – Early and Often!


John Blondin (DUP)


David Haase


David Brown


Hans Hallen


Dan Dougherty


Paul Huffman


Laura Clarke


Stephen Reynolds


Karen Daniels


Gail McLaughlin


Kenan Gundogu


Thomas Scaefer

Physics Classes

Introductory Sequence

PY 201/202/203: A three-semester introductory sequence for Physics Majors covering mechanics, waves, thermodynamics, electricity and magnetism, special relativity, atomic physics and an introduction to quantum physics and the Schrodinger equation. These courses include a laboratory component and a 75-minute recitation section each week to help students develop advanced problem-solving skills and improve their understanding of basic physics.

Advanced Courses

PY 411-412 (Mechanics): A two-semester sequence in particle and continuum mechanics at the intermediate level. The first semester focuses on single particle dynamics and the second semester focuses on dynamics of systems of particles and continua.

PY 414-415 (Electricity & Magnetism): A two-semester sequence in electromagnetic theory using the methods of vector calculus at an intermediate level.

PY 401-402 (Quantum Physics): A two-semester sequence that introduces students to the basic principles of quantum physics with an emphasis on selected applications to atoms, molecules, solids, nuclei and elementary particles.

PY 413 (Thermodynamics): An introduction to statistical mechanics and thermodynamics, the statistical study of physical systems emphasizing the connection between the statistical description of macroscopic systems and classical thermodynamics.

Laboratory Sequence

PY 252 (Instrumentation and Data Analysis): This course introduces second-year physics students to the use of common laboratory equipment, data acquisition methods and analysis.

PY 452 (Advanced Physics Laboratory): This course is restricted to senior physics students. Students work on three major experiments of their choosing over the course of the semester and present their results in a formal research talk at the end of the course.

Electives

PY 328 (Stellar and Galactic Astrophysics)
PY 341 (Space-time Physics)
PY 506 (Nuclear & Subatomic Physics)
PY 507 (Elementary Particle Physics)
PY 516 (Physical Optics)
PY 517 (Atomic and Molecular Physics)
PY 519 (Biological Physics)
PY 525 (Computational Physics)
PY 543 (Astrophysics)
PY 552 (Intro to Plasma Physics)

Required courses for Physics Majors

Physics majors are required to have 120 credits including:

- PY 201/202/203; PY 252/452; PY 401/402, 411/412, 413, 414/415
- MA 141, 241, 242; MA 341, 301, 405; Statistics, Programming, and Numerical Methods
- CH 101/102 and a Basic Science Elective
- Technical Electives (9 cr)
- General Education Plan, including Humanities (6 cr), Social Sciences (6 cr), PE (2 cr), an additional HSS course (3 cr), and Interdisciplinary Perspectives (5 cr)
- Free Electives (6 cr)

Suggested Schedule for Physics Majors

FRESHMAN YEAR

Fall Semester	*Credit*	*Spring Semester*	*Credit*
PY 201 University Physics I	4	PY 202 University Physics II	4
CH 101 Chemistry- A Molecular Science	3	MA 241 Analytical Geometry & Calculus II	4
CH 102 General Chemistry Laboratory	1	Basic Sciences Elective	3
MA 141 Analytical Geometry & Calculus I	4	Introduction to Computing	3
ENG 101 Academic Writing and Research	4		
PMS 100 **or** E 115 Orientation	1		
	17		*14*

SOPHOMORE YEAR

Fall Semester	*Credit*	*Spring Semester*	*Credit*
PY 203 University Physics III	4	PY 411 Mechanics I	3
MA 242 Calculus III	4	MA 342 Applied Differential Equations	3
GEP Humanities Requirement	3	ST 380 Prob & Stat for the Physical Sci.	3
GEP Social Sciences Requirement	3	GEP Humanities Requirement	3
PE 1XX Fitness and Wellness Course	1	Free Elective	3
	15		*15*

JUNIOR YEAR

Fall Semester	*Credit*	*Spring Semester*	*Credit*
PY 412 Mechanics II	3	PY 413 Thermal Physics	3
PY 414 Electrodynamics I	3	PY 415 Electrodynamics II	3
MA 401 Applied Differential Equations II	3	MA 405 Linear Algebra	3
Computing/Numerical Methods	3	Advanced Writing/Speaking	3
GEP Interdisciplinary Perspectives Req.	3	GEP Social Sciences Requirement	3
	15		*15*

SENIOR YEAR

Fall Semester	*Credit*	*Spring Semester*	*Credit*
PY 401 Quantum Physics I	3	PY 402 Quantum Physics II	3
PY 452 Advanced Physics Lab	3	Technical Elective	3
GEP Interdisciplinary Perspectives Req.	2-3	Technical Elective	3
Technical Elective	3	GEP Additional Breadth Requirement	3
Free Elective	3	Free Elective	3
Physical Education Elective	1		
	15-16		*15*

Research

If we knew what we were doing, it wouldn't be called Research.
-Albert Einstein

Physics and research go hand in hand. A physicist does not spend her day solving problems whose answers are in the back of a book. A physicist uses knowledge of a fundamental set of principles to solve new problems. Experiencing this 'original research' first-hand is an integral part of a physics education. We strongly encourage all of our physics majors to get involved in research, either with faculty on campus or through off-campus programs available through the NSF, DOE, NASA, and labs and Universities around the world. Don't wait – starting in your third year is often too late.

Getting Started

Off-Campus: Most off-campus research is done over the summer, through organized programs at universities and national labs. These are competitive positions -- apply early and often! Typical deadlines are in January and February, so it is wise to get started on your searching/applying over winter break. Note that this may require a recommendation letter. Think ahead.

On-Campus: Students can do research on campus as a paid job, for academic credit (PY 499), or as a volunteer. In all cases, you should be ready to commit at least 15 hours per week for a full semester or more.

Finding the right position can be difficult, but a little persistence usually pays off. The first step is to identify your own interests and do a little research to find out what kind of research is going on in the department. You can find broad descriptions of research on the web, but your best source of information will be other physics students.

Once you have identified a few professors with whom you might want to work, talk to them about your interests and goals. Remember, there is not likely to be a 'job' waiting for you. More often it is up to you to convince the professor that you would be a valuable addition to the research group.

Quick Note

For more information about research in the NCSU Physics Department visit: www.physics.ncsu.edu/research

NC State Undergraduate Research Grants

Of the approximately 120 grants given out each year by the NC State Office of Undergraduate Research, Physics students have received an average of 15 per year for the last several years. These small awards are intended to support research for one or two semesters. In many cases this award has lead to longer involvement and support from the faculty through external research funding.

Proposals will be due sometime late in the spring semester. Interested students should begin by finding a research mentor. The student will work with the mentor in defining the research project and writing the three-page proposal. In many cases the mentor already has ideas for good undergraduate research projects, but original ideas from the student are encouraged. The selection process has gradually become more competitive, so the proposal must be well written and convey a clear description of the work the student will do and the scientific impact of the project.

Society of Physics Students

What does the Society of Physics Students do?

The Society of Physics Students organizes events such as seminars, tours, trips, and socials for all physics majors. Popular events include Bad Physics Movie Night and the annual Alumni Dinner, where students hear from Physics Alumni about life after a Physics degree. SPS volunteers also participate in outreach activities, including physics demonstration shows on campus, an astronomy night at Centennial Campus Middle School, Family Science Night at nearby Washington Elementary School, and more.

Why should you join the Society of Physics Students?

All Physics Majors are considered members of the NC State Chapter of SPS, but everyone is encouraged to join the national SPS organization (www.spsnational.org). Membership is cheap ($20/yr) and includes a subscription to *Physics Today*, student membership in a professional society (i.e., American Physical Society or American Astronomical Society), and access to numerous services, scholarships and opportunities.

Perks of being a Society of Physics Students member

All Physics Majors are welcome to use the Society of Physics Students room, 317 Riddick Hall. Just ask another physics student for the code. This room contains computers, couches, textbooks, books, magazines, and whiteboards. You can come at your leisure and stay as long as you like. Plus, you get the added bonus of knowing people that are in your classes.

Helpful Hints:

- **Society of Physics Students**
  317 Riddick Hall

  Web: www.physics.ncsu.edu/sps
- **To join…**
  Drop by room 317 during any of the meetings listed on the webpage
- **2010-2011 Officers:**
  Tony Allen: Co-President
  Tim Canty: Co-President
  Mary Burkey: Outreach Coordinator
  Mark Schillaci: PAMS Council Rep.
  Bryan Allen: Treasurer
  Christ Pope: Senior Rep.
  Kevin Barkett: Junior Rep.
  Adrienne Cage: Sophomore Rep.
  Steven Corley: Freshman Rep.

Study Abroad

Spending a summer, a semester, or an entire year overseas is a growing trend among physics students at NC State University. Recent students have spent semesters in Japan, Mexico, England, Germany and France and Sweden.

Leeds University, UK

Monash University, South Africa

Hong Kong Polytechnic

Lancaster University, UK

Lund University, Sweden

Bogazici University, Turkey

Why should Physics majors Study Abroad?

- Distinguish yourself and your resume with a global experience.
- Immerse yourself in a new culture and gain exposure to diverse viewpoints.
- Take GEP, major, and minor courses toward your degree.
- Enhance problem solving techniques and cross-cultural competence.
- Graduate on time!

Can I afford it?

- Yes! For many programs, students pay NCSU tuition and fees.
- Financial aid and scholarships travel with you.
- The SAO awards over $150,000 in scholarships annually.

How do I get started?

- Visit the Study Abroad Office website to investigate your options
- Contact the SAO to schedule a General Advising Session
- Discuss course options with Prof. Blondin

Study Abroad Office

Find the Study Abroad Office at:
315 First Year College Commons
Tel: 919.515.2087
Email: study_abroad@ncsu.edu
www.studyabroad.ncsu.edu

The Study Abroad Website is the place to get started: You can search through a long list of schools around the world, find program-specific details like cost and deadlines, and being the application process.

The Study Abroad Office has compiled an abbreviated list of exchange programs (below) where NC State students can take upper-level physics classes taught in English.

Lancaster University
University College Cork
University of Leeds
University of Copenhagen
Lund University
Monash University
University of Wollogong
Hong Kong Polytechnic
Bogazici University

"Life in Sweden is going great so far! I'm taking a quantum mechanics course until mid-March and then two electives: Introductory Swedish and Swedish Social Policy…It's been a life-changing adventure to live abroad and to immerse myself in an entirely new culture"

-Adam Dunn, current PY student

Colloquia & Seminars

The Physics Department hosts a large number of colloquia and seminars each year. Undergraduates are sometimes shy about attending events they see advertised in the departmental weekly calendar, even though the subjects may sound quite interesting. Don't be-the seminars and colloquia are open events that you're welcome to attend. The percentage of a talk that you will likely be able to understand varies widely from one seminar to another, and from one speaker to another. If you can understand the title and it sounds interesting, then there's a fair change you'll be able to keep up for a while. (Keep in mind that most people there will not generally follow the whole talk.)

The physics Colloquium on Monday afternoon (4pm) is intended to be a broad-based presentation that physicists in all subfields have a chance to enjoy. When it adheres to that ideal, it is often accessible to undergrads as well. Refreshments are served in the Hearth prior to the Monday colloquium. This is an excellent opportunity to mingle with faculty and graduate students. Stop by, grab a cookie, and chat about physics… or Wolfpack football.

Most of the other topical seminars are usually very detailed talks for specialists in the fields, but if you watch the announcements you'll occasionally find one in which a speaker from outside the field is giving a more general talk. These can be quite interesting.

The Physics Department also hosts three major speaking events each year, the L. H. Thomas Lecture, the Derieux Lecture, and the Sayers Lecture. Don't miss them!

Quick notes:

Colloquium Notices

- www.physics.ncsu.edu/news/colloquia

Physics Colloquia

- 4:00 PM on Mondays
  301 Riddick Hall

Colloquia in other Departments

- Chemistry
  www.ncsu.edu/chemistry/new/seminars.html
- MEAS
  www.meas.ncsu.edu/05-seminars.html
- Mathematics
  www.math.ncsu.edu/events
- Statistics
  www.stat.ncsu.edu/seminars
- Chemical Engineering
  www.che.ncsu.edu/home/seminars.html
- Electrical Engineering
  www.ece.ncsu.edu/seminars
- Materials Sciences
  www.mse.ncsu.edu/seminar

Colloquia at other Institutions

- UNC Physics
  www.physics.unc.edu/events/colloquia
- Duke Physics
  www.phy.duke.edu/news/colloquium-current.php

Honors Programs

Students have multiple opportunities to pursue academics above and beyond the traditional physics degree. The University Honors Program and University Scholars Program are open to incoming freshmen.

The Physics Department Honors Program offers talented upper-classmen an opportunity to develop their academic potential by increased involvement and participation in Physics research, Physics projects, independent study in Physics, advanced Physics courses, Physics seminars, and Physics colloquia.

Admissions

Students are nominated by the Honors program adviser. Nominations are based on academic performance and by ability to profit from the Honors program experience. A minimum GPA of 3.5 in Physics courses and an overall GPA of 3.0 is required for initial admission, which is usually in the junior year.

Requirements

- Have an overall GPA at graduation of 3.4 or better.
- Completed Honors Contract, submitted to Honors Program Director.
- Complete 3 hours of PY 499 (Independent Research), submit a written report based on this research to the Physics Honor Program Committee.
- Complete 9 hours of 500-level Physics courses. One 400-level Physics course taken with the Student-Faculty Contract for Honors Credit may be substituted for a 500-level course.
- Demonstrate satisfactory participation in *Society of Physics Students* activities, and Physics Department seminars and colloquia.

Recognition

Successful completion of the Honors program in Physics is recognized by award of a certificate signed by the dean of the College of Physical and Mathematical Sciences and the Director of the PAMS Honors Program, by having an "Honors" seal on the student's diploma, and by the addition of the phrase "completed Honors Program in Physics" to the student's permanent transcript.

University Honors Program

Our mission is to prepare excellent students for admission to and success within graduate and professional schools, for excellent jobs in the chosen field of study, and to position students for major national scholarships and fellowships.

Completion of the UHP requires:

- 12 credit hours of HON courses
- An Honors Capstone Project
- Cumulative GPA > 3.25

www.ncsu.edu/honors

University Scholars Program

Our mission is to introduce students to the visual and performing arts, to encourage them to consider critical issues drawn from the sciences and contemporary affairs, to offer them opportunities to connect their academic and personal goals, and through these experiences empower them to be informed citizens, ethical leaders, and active contributors to out society.

The USP offers students:

- The Scholars Forum
- A film series, a discussion series focused on current events, and a book club
- Tickets to plays, concerts, films, galleries, museums, and more
- Field trips
- Access to honors courses
- Activities focused on leadership development, outdoor education and service
- Early course registration privileges
- A diverse, energetic and fun residential community in the Scholars Village in Sullivan Hall

www.ncsu.edu/univ_scholars

Senior Awards

Rodney I. McCormick Award is presented to a graduating senior in recognition of *outstanding research.*

Dr. Rod McCormick graduated from St. Albans High School in 1964 and in 1968 magna cum laude from West Virginia State College. Upon graduation, Rod was commissioned as a Second Lieutenant in the Field of Artillery. Highlights of his 20 year Army career include service in Germany, Battery Commands in Vietnam and Fort Sill, and positions as a Battalion Executive Officer, and Deputy Division Inspector General, with the 82nd Airborne Division. During his assignment as the chief of the Technical Support Office at RTP, Rod received a Master's Degree in 1973 and his Ph. D. in Physics in 1987.

In 1992 he accepted the position he held at the time of his death, Special Assistant for Project Development at NC State University. He was the driving force behind the successful proposal to the DoD's Technology Reinvestment Program for establishing "A Regional Technology Alliance for High Aspect Ratio MEMS" led by MCNC.

Wesley Doggett Award is presented to a graduating senior in recognition of *outstanding scholarship.*

Wesley Doggett received the NCSU Physics Department's Outstanding Student Award in 1952. When he graduated with the first graduating class in the world's first Bachelor of Nuclear Engineering program (with High Honors) in NCSU's Physics Department and with the Bachelor of Electrical Engineering degree (in absentia), he was selected to be the "Outstanding Engineering Senior." He was awarded two of the first pre-doctoral fellowships offered by the newly created National Science Foundation that supported his initial graduate studies at UC-Berkeley during 1952-54. He was the first undergraduate student from NCSU to receive his Master's and PhD in Physics at Berkeley, a program that he completed in three and one-half years. He attributes this success to his excellent undergraduate preparation at NCSU by the Departments of Physics, Electrical Engineering and Mathematics.

In 1958 he rejoined the NCSU Physics Department as a full professor, from 1964-68 he served as Assistant Dean of PAMS and retired as Professor Emeritus of Physics in 1993. Professor Doggett is a member of the NCSU's Academy of Outstanding Professors.

Richard Patty Award is presented to a graduating senior in recognition of *outstanding leadership.*

Richard Patty received his PhD from Ohio State University in 1960; afterwards he served in the US Army from 1961-1962. In 1964 he joined the Physics Department at NC State. His research involved the transmission of infrared radiation in the atmosphere and measurement of airglow from the upper atmosphere. Within NCSU, he served on numerous committees at the department, college and university levels, served as chair of the NCSU Academy of Outstanding Teachers, and served four two-year terms on the Faculty Senate. He has receive numerous awards including NCSU Outstanding Teaching Awards (1969,1974 and 1983), Alumni Award for Excellence in Teaching (1974), UNC Board of Governors Teaching Award (1999), Alexander Quarles Holladay Medal for Excellence (1995), and many others.

Professor Patty served as head of the Physics Department from 1976-1995, a period of significant development for the Physics Department and retired in 1996. Since retirement he has continued to teach on a part-time basis and served as interim head of the Department of Marine, Earth and Atmospheric Sciences (199-2001).

Scholarships

Physics

In addition to University- and College-based scholarships, the Physics Department at North Carolina State University offers a few merit and need-based scholarships to Physics Majors. Interested students should submit a physics scholarship application, available on the Physics Department web site.

Nancy Chung Memorial Scholarship
Chris and Odile Gould Scholarship
Thomas A. Hill Scholarship Award
Webassign Physics Scholarship

Caldwell Fellows

Created to honor the legacy of Chancellor John T. Caldwell, the program carries on the spirit and ideals that made him such a memorable part of the University. The program is rooted in the premise that investment in the lives of promising young adults makes a difference; the students who comprise the Caldwell Fellows are a community of leaders driven by service, not self-interest.

Each spring new Fellows are selected from the first year students who entered NC State the previous fall. Selection is based upon academic excellence, critical thinking and creativity; extraordinary promise for leadership; exceptional character; and the desire and commitment to engage in the Fellows rigorous program of leadership development. To enable their development, Fellows are awarded funds for experiential learning and a tuition stipend. Funds are annually renewable for three years based on a student's maintenance of the entrance criteria and demonstration of engagement in the programs ideals.

Interested?

You can find more information about John T. Caldwell and the Caldwell Fellows as well as the application online at: www.ncsu.edu/caldwell/

The application is due in January, and the new Fellows are chosen in February.

National Awards

Physics Majors have been very successful in competition for national awards, including the Goldwater Scholarship for rising seniors in science and engineering, the Astronaut Scholarship Foundation, the Marshall Scholarship and NSF Graduate Fellowships. Success at this level requires maintaining an exemplary academic record, as well as developing an outstanding research portfolio. To accomplish the latter requires getting involved in research as early as possible. The NC State Undergraduate Research Grants program, with applications due in the spring of each year, is an excellent way for freshmen to get started.

Directory

Faculty

Name	Office	Tel	Email	Research
Ade, Harald	258A Riddick Hall	919.515.1331	harald_ade@ncsu.edu	Soft Condensed Matter
Aspnes, David	100A Research Bldg. II	919.515.4261	aspnes@unity.ncsu.edu	Condensed Matter
Beichner, Robert J.	246 Riddick Hall	919.515.7226	beichner@ncsu.edu	Physics Education
Bernholc, Jerzy	121 Partners III	919.515.3126	bernholc@ncsu.edu	Nanoscience/Materials
Blondin, John M.	400A Riddick Hall	919.515.7096	john_blondin@ncsu.edu	Astrophysics
Brown, David	400M Riddick Hall	919.515.7471	david_brown@ncsu.edu	Astrophysics/Relativity
Nardelli, Marco	125 Partners III	919.513.0514	mbnardelli@ncsu.edu	Nanoscience/Materials
Clark, Laura	143 Riddick Hall	919.513.7359	laura_clark@ncsu.edu	Nanoscience/Materials
Cotanch, Stephen R.	400B Riddick Hall	919.515.3316	cotanch@ncsu.edu	Nuclear/Particle Physics
Daniels, Karen E.	258C Riddick Hall	919.513.7921	karen_daniels@ncsu.edu	Nonlinear Dynamics
Dougherty, Daniel	155 Partners III	919.513.2610	dan_dougherty@ncsu.edu	Nanoscience/Materials
Ellison, Donald C.	400L Riddick Hall	919.515.7227	don_ellison@ncsu.edu	Astrophysics/Relativity
Frohlich, Carla	400K Riddick Hall	919.515.3441	carla_frohlich@ncsu.edu	Astrophysics
Golub, Robert	160A Riddick Hall	919.515.0357	rgolub@ncsu.edu	Nuclear Physics
Gould, Chris	160K Riddick Hall	919.515.8760	chris_gould@ncsu.edu	Nuclear Physics
Gundogdu, Kenan	145 Riddick Hall	919.513.3409	kenan_gundogdu@ncsu.edu	Condensed Matter
Haase, David G.	160E Riddick Hall	919.515.6118	david_haase@ncsu.edu	Nuclear Physics
Hallen, Hans	258F Riddick Hall	919.515.6314	hans_hallen@ncsu.edu	Nanoscience/Materials
Heyward, Keith	309A Riddick Hall	919.513.3001	keith_heyward@ncsu.edu	Physics Demonstrations
Huffman, Paul	160D Riddick Hall	919.515.3314	paul_huffman@ncsu.edu	Nuclear Physics
Ji, Chueng R.	400C Riddick Hall	919.515.3478	chueng_ji@ncsu.edu	Nuclear/Particle Physics
Kneller, James	400E Riddick Hall	919.513.4826	jim_kneller@ncsu.edu	Physics
Krim, Jacqueline	145 Partners III	919.515.7865	jkrim@unity.ncsu.edu	Nanoscience/Materials
Lazzati, Davide	400N Riddick Hall	919.513.0926	davide_lazzati@ncsu.edu	Astrophysics
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