



U.S. Department of Energy's
Office of Science

DOE/NSF Science Research Internship Collaborations

American Chemical Society

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The U.S. Department of Energy is a Science Agency

Top Five Government Research Organizations for:

Physical Sciences	Mathematics & Computing	Life Sciences	Engineering
1. Energy (2,102)	1. DOD (1032)	1. HHS (20,996)	1. DOD (3,500)
2. NASA (1,026)	2. Energy (820)	2. USDA (1,537)	2. NASA (2,443)
3. DOD (633)	3. NSF (607)	3. DOD (1,047)	3. Energy (1,588)
4. NSF (615)	4. NASA (98)	4. NSF (490)	4. NSF (571)
5. HHS (382)	5. Commerce (75)	5. Energy (404)	5. DOT (253)

Numbers are FY 2003 dollars in millions - Source: NSF -- Preliminary Federal obligations for research, by agency and field of science and engineering: fiscal year 2003: Total Research by Agency and Field of Science and Engineering



Six Major Program Offices:

- **Advanced Scientific Computing Research**
 - Research and application of advanced computational tools to support DOE research.
- **Basic Energy Sciences**
 - Principal sponsor of fundamental research for the Nation in materials sciences and engineering, **chemistry**, geosciences, and bioscience as it relates to energy.
 - Synchrotron light sources, neutron sources, electron microscopy, etc.
- **Biological and Environmental Research**
 - Radiation and health. Human and environmental. Founder of the Human Genome Project,
- **Fusion Energy Sciences**
 - advance plasma science and fusion science and technology
- **High Energy Physics**
 - understand energy and matter at a fundamental level by investigating the elementary particles and the forces between them.
- **Nuclear Physics**
 - to advance our knowledge of the properties and interactions of atomic nuclei and nuclear matter and the fundamental forces and particles of nature.

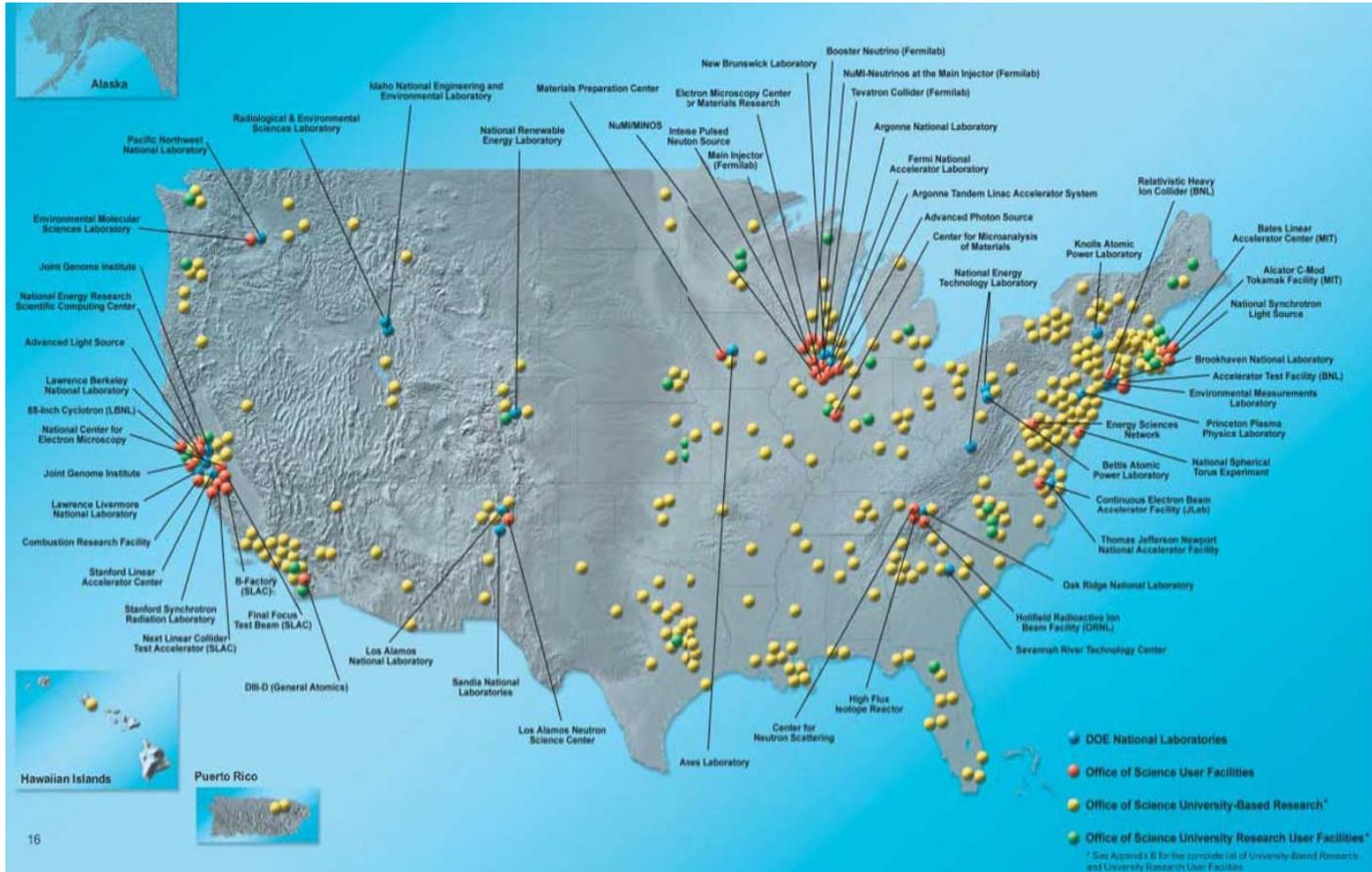


National Laboratories





Science Presence



10 National Labs, Research at 280 Universities
and 42 Major Scientific User Facilities



World Class Facilities



Chemistry Department at BNL:

- Experimental and theoretical programs studying imaging and neuroscience,
- Charge transfer for energy conversion,
- Chemistry with ionizing radiation,
- Catalysis and surface science,
- Nanoscience
- Combustion, and
- Nuclear chemistry.

Chemistry Department at ANL:

- Analytical Assets
- Photosynthesis
- Cluster Studies
- Atomic Physics
- Catalyst Design
- Heavy Elements
- f-Electron Interactions
- Computational Materials and Electrochemical Processes
- Radiation and Photochemistry
- Biological Materials Growth Facility
- Chemical Dynamics
- Nanophotonics
- Chemical Transformation Mechanisms
- Coordination Chemistry
- Actinide Facility



World Class Facilities



Chemistry Department at LBNL

- Atomic, Molecular and Optical Sciences
- Catalytic Science
- Chemical Physics
- The Glen Seaborg Center for Actinide Science

Chemistry Department at PNNL

- field hydrology
- interfacial chemistry
- organic analytical
- processes
- supercritical fluids



World Class Facilities

Chemistry Department at ORNL

- Fusion Science > Material Development
- Fusion Science
- Environmental Sciences > Climate Change
- Instrumentation and Measurement
- Materials Science > Surfaces and Thin Films
- Environmental Sciences > Ecological Management





Undergraduate Laboratory Research Internships



Science Undergraduate Laboratory Internship

Community College Institute



Pre-Service Teacher Program



Undergraduate Internships

- Research experience at an Office of Science Laboratory
- 10 week summer internships
- 16 week semester internships
- \$400 per week stipend
- Travel included
- Housing allowance included
- Students required to write a science abstract and a research paper
- Outside evaluation conducted each year



Undergraduate Internships

- Required Deliverables:
 - Research abstract
 - Research paper (10 pages)
 - Pre & Post questionnaires
 - PST Students - Education
Module/Journal/Digital Portfolio
- Publish *Journal of Undergraduate Research*



Science Undergraduate Laboratory Internships (SULI)



Paid internships for undergraduate students enrolled in two or four year institutions and interested in advancing their scientific and technical expertise and graduate school and career options.



Community College Institute (CCI) In Science and Technology



*Career training internship
in all branches of
science,
mathematics,
and
engineering.*

Community College
students enter the
scientific work force
and expand career
options.

**Award Winning Program
for College Students**

Semi-Finalist for Harvard
Award

“Innovations in American
Government”

Recognized by the White
House Initiative on Educational
Excellence for Hispanic
Americans as an exemplary
program.



Pre-Service Teachers (PST)

Don't just teach science, math, or technology; Do it!



Paid summer research internships at one of the National Laboratories. Each intern works with both a research mentor and a Master Teacher.

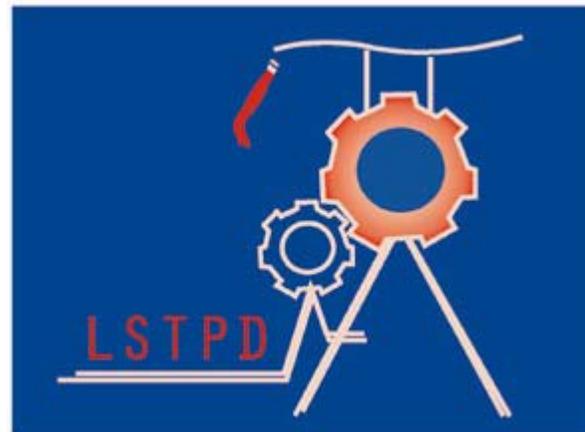


Graduate/Faculty Programs

Faculty and Student Teams

Laboratory Science Teacher
Professional Development

Used Energy Related
Laboratory Equipment



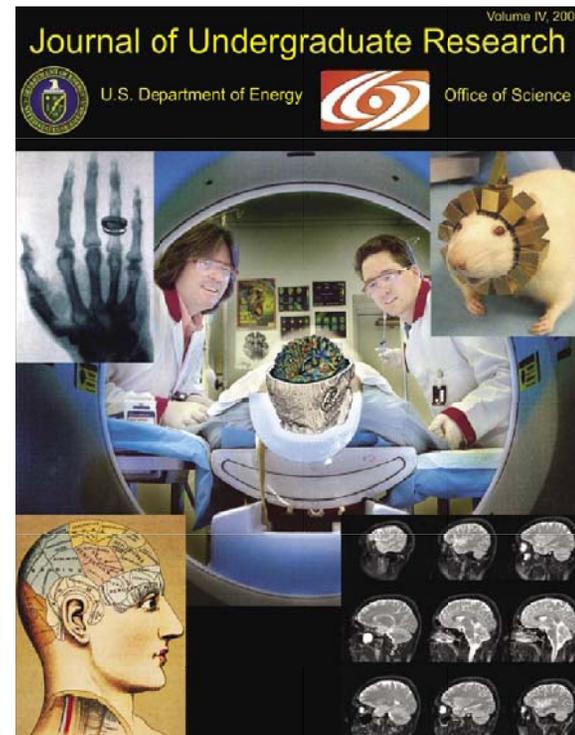
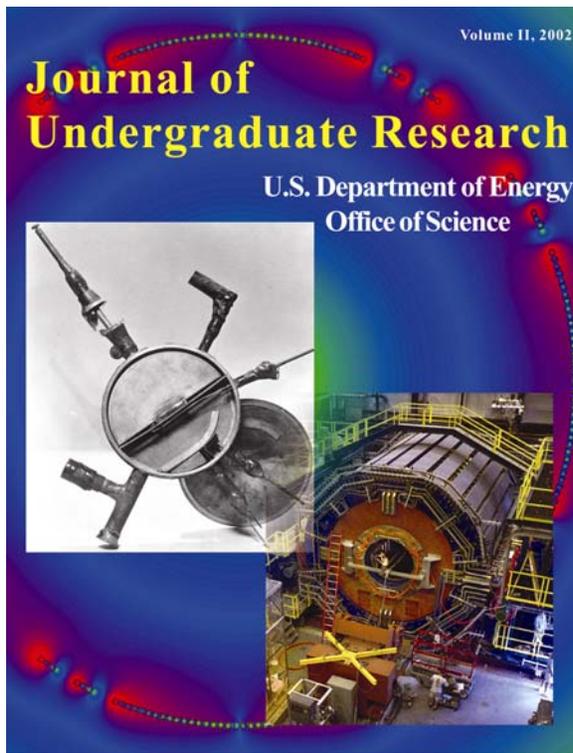
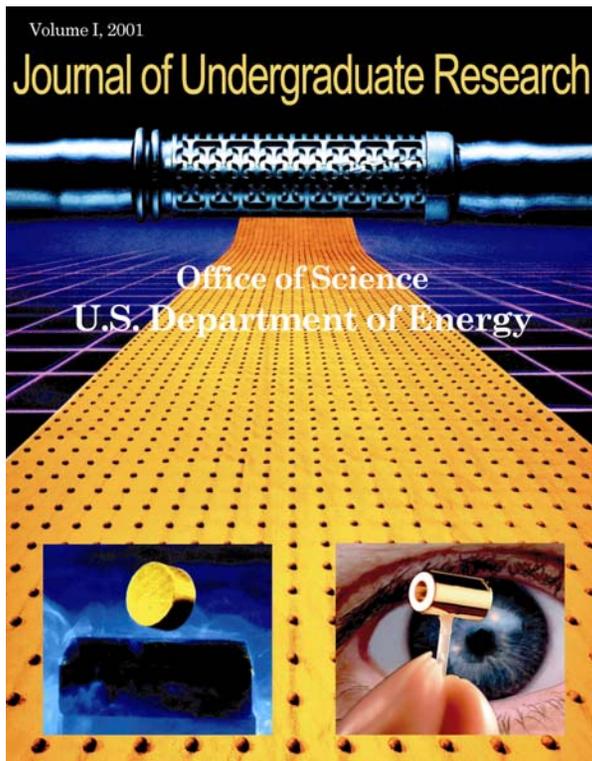


Faculty and Student Teams (FaST)

- Paid summer research internships at one of the National Laboratories for teams including one faculty member and up to three students.
- Priority given to schools receiving less than 50% Federal research funding
- Partnership with NSF



Journal of Undergraduate Research



U.S. Department of Energy



Office of Science

Online Information

www.scied.science.doe.gov