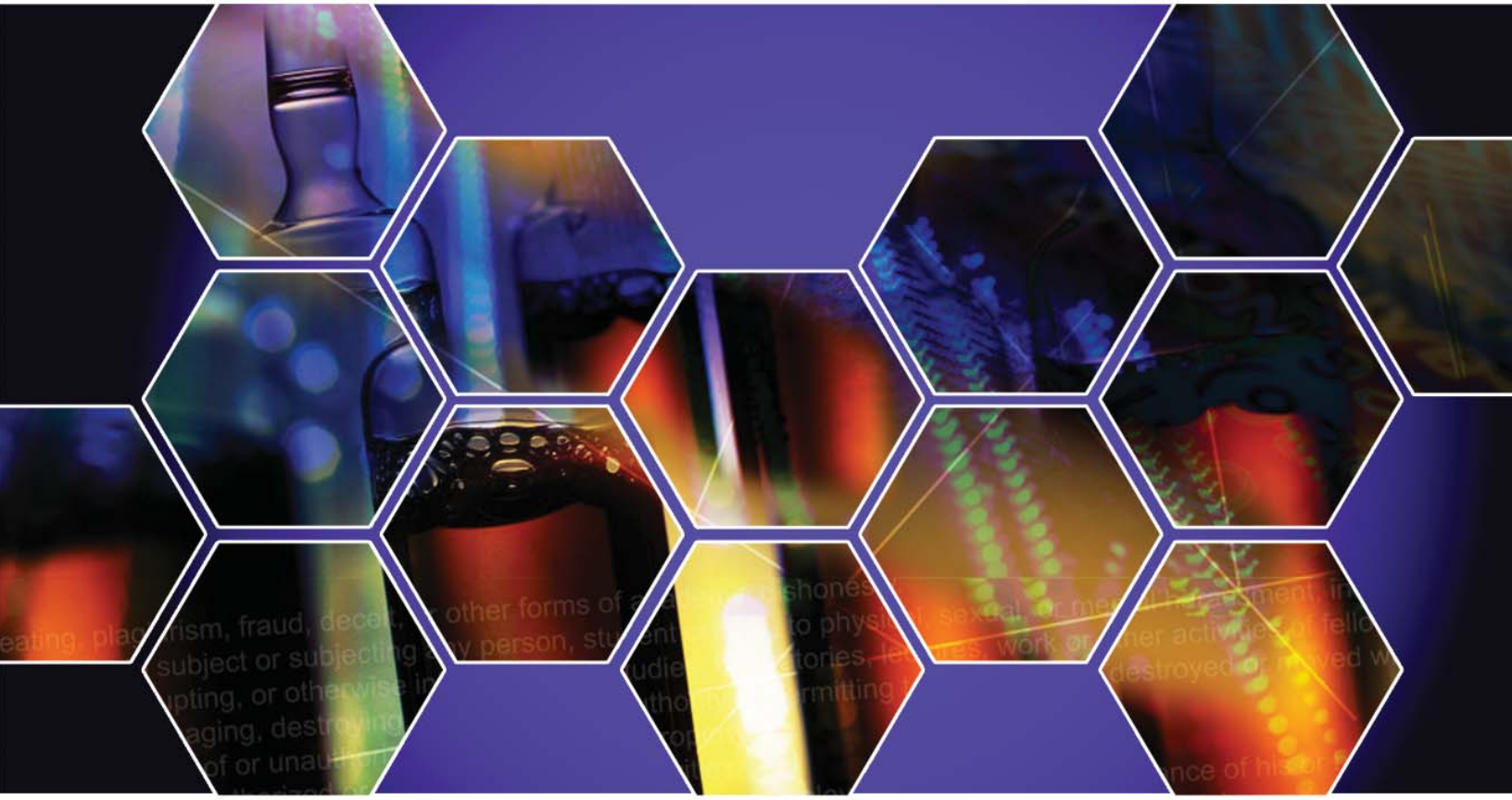
SERCh Competition

Program Book



Science Energy Research CHallenge

November 10th, 2008

Oak Ridge National Laboratory

U.S. DEPARTMENT OF ENERGY

Science and Energy Research Challenge (SERCh)

The first annual Science and Energy Research Challenge (SERCh), sponsored by the Department of Energy's (DOE) Office of Science, will take place November 9-10, 2008, at Oak Ridge National Laboratory. Eighty-five students have been selected to participate in this prestigious and highly competitive National poster competition.

Any undergraduate student that completed a research internship at one of the Department's National laboratories or was part of research project funded by the DOE during fiscal year 2008 was eligible to apply for SERCh. Students were required to submit a research abstract and poster as part of their application. A review committee selected the students that are participating in the event in November.

At the competition, each competitor will be judged twice in one of five categories listed below. The top three posters in each category will receive scholarships, $3,000 for 1st place, $1,500 for 2nd place, and $1,000 for 3rd place. One grand prize finisher will receive a $10,000 scholarship.

While the poster competition is the focus of the SERCh, participants will also hear from prominent scientists, attend seminars/workshops, and meet other like-minded students and faculty for invaluable networking.

Science and Energy Research Challenge poster categories:

- Biological Science
- Chemistry
- Materials Science and Engineering
- Environmental Science
- Physics

Bill Valdez

Department of Energy
Office of Science
Washington, DC 20585

November 10, 2008

Welcome to the first annual U.S. Department of Energy (DOE) Student Energy Research Challenge (SERCh). The research that you and other student researchers are presenting reflects the wide range of basic and applied science supported by DOE, and also reflects your commitment to pursuing research that is high in quality and reflects some of the most important national challenges we are confronting in energy, the environment and national security.

As you network with your fellow presenters and other scientists, you will meet researchers in the fields of high energy physics, genomics, nanoscience and many other areas of modern science. During 2008, more than 600 undergraduates were awarded research internships at the DOE's 17 national laboratories, in addition to the grants awarded to university faculty who employed student researchers. Your presence here highlights the achievement of all of those participants. In many ways, you are at the forefront of our Department's and Nation's scientific and technical work force for the future.

I join with your professors, your mentors, Oak Ridge National Laboratory, Oak Ridge Associated Universities, the Office of Biological and Environmental Research, the Office of Science and all of the Department of Energy in expressing my pride in the achievements you are demonstrating at this gathering. I congratulate you on your dedication to science and this recognition of your current accomplishments.

Best wishes for the future,

William J. Valdez, Director

Office of Workforce Development
for Teachers and Scientists

Office of Science

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Elizabeth Altman

University:	Suffolk County Community College
Major:	Psychology
Research Institution:	Brookhaven National Laboratory
Research Topic:	Testing the Validity of a Single Administration of the PSAP in Healthy Adult Males
Hometown:	Patchogue, New York
Professional Societies:	Phi Theta Kappa and CSTEP
Hobbies/Interests:	My interests lie in the field of neuropsychology. I am interested in the relationship between the brain and cognitive, behavioral, and emotional function.

Jeffery Ambrose

University:	Southern University at New Orleans
Major:	Biology
Research Institution:	Brookhaven National Laboratory
Research Topic:	Microbial Community Mapping from Long Island Pine Barren Forest Soil, New York
Hometown:	New Orleans, Louisiana

Marissa Anderson

University:	University of New Mexico
Major:	Biochemistry
Research Institution:	Los Alamos National Laboratory
Research Topic:	Flow Cytometric Analysis of Intrinsic Cellular Fluorescence Lifetime
Hometown:	Jenez Springs, New Mexico

Charysse Archer

University:	Middle Tennessee State University
Major:	Professional Mathematics
Research Institution:	Oak Ridge National Laboratory
Research Topic:	Feedback Control Loop for Laser Power Recycling Cavity
Hometown:	Clinton, Tennessee
Professional Societies:	Pi Mu Epsilon (Honor's Mathematics Fraternity), National Society of Collegiate Scholars
Hobbies/Interests:	I enjoy cooking and baking.

Mohammad Moin Baig

University:	Medgar Evers College
Major:	Biology
Research Institution:	Brookhaven National Laboratory
Research Topic:	My research project was on Protein Crystallization, where I crystallize the protein name putative Oxidoreductase which derived from Klebsiella Pneumoniae.
Hometown:	New York, New York
Professional Societies:	I have worked with New York Police Department.
Hobbies/Interests:	After participating in the research this summer, I am interesting in doing research.

Tyra G. Bunch

University:	Southern University at New Orleans
Major:	Biology
Research Institution:	Brookhaven National Laboratory
Research Topic:	Distribution Survey of the New York State Threatened Banded Sunfish (*Enneacanthus obesus*) in the Peconic River Drainage on Long Island
Hometown:	New Orleans, Louisiana
Hobbies/Interests:	Reading, traveling, spending time with my family

Gabriel Caceres

University:	Augustana College
Major:	Physics, Mathematics, Philosophy
Research Institution:	Fermi National Accelerator Laboratory
Research Topic:	Supersymmetric Dark Matter as the Source of the WMAP Haze
Hometown:	Naperville, Illinois
Professional Societies:	American Physical Society, American Astronomical Society of Physics Students
Hobbies/Interests:	Research, martial arts, reading, hanging out with friends

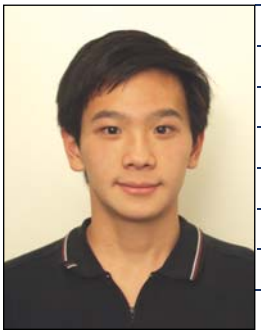
Caleb Carlin

University:	Michigan Technological University
Major:	Applied Physics
Research Institution:	Ames Laboratory
Research Topic:	Dicyanoamide: Its Role in Energetic Ionic Liquids
Hometown:	Ashwaubenon, Wisconsin
Professional Societies:	ACS and SPS
Hobbies/Interests:	Audio recording and editing, rollerblading, and PC gaming

Wren Chan

University:	Carnegie Mellon University
Major:	Materials Science and Engineering
Research Institution:	National Energy Technology Laboratory
Research Topic:	Thermodynamic Assessment of Mo-rare Earth Systems Thermodynamic Assessment of V-rare Earth Systems
Hometown:	Brooklyn, New York
Professional Societies:	Material Advantage - ACerS, ASM International, TMS, AIST
Hobbies/Interests:	Go (Board Game), swimming, reading

Frank Chen



University:	Rice University
Major:	Electrical Engineering
Research Institution:	Los Alamos National Laboratory
Research Topic:	Ultrafast Control of Ferromagnetic Nanowires
Hometown:	Los Alamos, New Mexico
Professional Societies:	Student IEEE
Hobbies/Interests:	Piano, chess, ultimate frisbee, skiing, biking, tennis

Maria Chevtsova

University:	Princeton University
Major:	Mathematics
Research Institution:	Thomas Jefferson National Accelerator Facility
Research Topic:	Lead Foil Thickness Variation Measurements Using Gamma-Ray Attenuation
Hometown:	Newport News, Virginia
Hobbies/Interests:	Tennis, bridge, going to Broadway and the Opera, Japanese, German

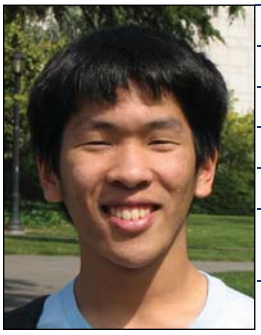
Danielle Chirdon

University:	University of Pittsburgh
Major:	Chemistry
Research Institution:	National Energy Technology Laboratory
Research Topic:	Infrared Spectroscopic Studies of Carbon Dioxide's Interaction with Coal and with a Coordination Polymer Probing the Ability of Such Materials to Mitigate Carbon Dioxide Emissions from Man Made Sources
Hometown:	Pittsburgh, Pennsylvania
Professional Societies:	The American Chemical Society Student Affiliates of the University of Pittsburgh
Hobbies/Interests:	My hobbies include ballet dancing and writing short stories or articles. I enjoy watching movies, and I am an avid fan of Pittsburgh hockey. I love spending free time with family, and I am involved with various volunteer projects. I have tutored students in math as well as in chemistry, and I also enjoy doing chemistry experiments with high school students during the University of Pittsburgh ACS Student Affiliates' Saturday Science program. In addition, I help with my brother's annual efforts to collect food during the Boy Scouts of America's spring food drive. Above all, I am most interested in finding ways to fuel the world cleanly and to reduce the impact which current means of power production have on the environment.

Maria Chistiakova

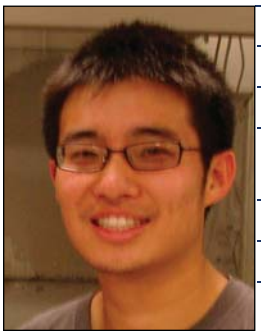
University:	University of California at Berkeley
Major:	Physics/chemical engineering
Research Institution:	Lawrence Berkeley National Laboratory
Research Topic:	Searching for dark matter through particle collisions
Hometown:	Berkeley, California
Hobbies/Interests:	Music, Harry Potter, books

Benjamin Chu



University:	University of California, Berkeley
Major:	Mechanical Engineering
Research Institution:	Lawrence Berkeley National Laboratory
Research Topic:	Evaluating Indoor Air Quality of Economizer Based Data Centers
Hometown:	Arcadia, California
Professional Societies:	Tau Beta Pi, Pi Tau Sigma, American Society of Mechanical Engineers
Hobbies/Interests:	Playing sports, photography, hiking, biking, traveling and reading magazines

Timothy Chung

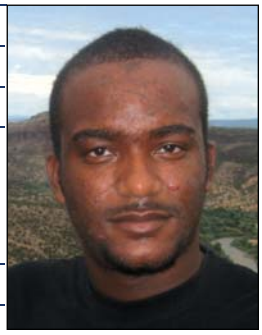


University:	University of California, Merced
Major:	Human Biology
Research Institution:	Lawrence Berkeley National Laboratory
Research Topic:	Preservation of Fluorescence in Transmission Electron Microscopy for Protein Localization
Hometown:	South Pasadena, California
Professional Societies:	Central Presbyterian Church, Intervarsity Christian Fellowship
Hobbies/Interests:	Swimming, running, snowboarding, hanging out with friends, playing super smash brothers, fellowship, reading the Bible

Trishelle Copeland-Johnson

University:	Seminole Community College
Major:	Chemical Engineering
Research Institution:	Oak Ridge National Laboratory
Research Topic:	Development of Carbon Fiber Production for Automotive Applications
Hometown:	Apopka, Florida
Professional Societies:	American Chemical Society, Phi Theta Kappa
Hobbies/Interests:	Television, video games, reading, sketching, piano, Japanese culture

Ezekiel Matthew David Crenshaw



University:	Cheyney University of Pennsylvania
Major:	Biology
Research Institution:	Los Alamos National Laboratory
Research Topic:	Purification of MBP Fused Mycobaterium Tuberculosis Proteins. The research conducted this summer involved purifying mycobacterium tuberculosis proteins and understanding the different methods taken to purifying these proteins.
Hometown:	Philadelphia, Pennsylvania
Hobbies/Interests:	My hobbies are listening to music and writing poetry. I am interested learning about different areas of science, especially biology. I am interested in learning more about different research that is being conducted because I would like to either go into medicine or research.

Matthew Cromwell

University:	Brigham Young University, Idaho
Major:	Mechanical Engineering
Research Institution:	Ames Laboratory
Research Topic:	Production of Pure Phase Multiferroic Materials by High Oxygen Pressure Annealing Processes
Hometown:	Rexburg, Idaho

Larry Cumberbatch

University:	North Carolina Central University
Major:	Physics
Research Institution:	North Carolina Central University
Research Topic:	Measurement of Multiple Star Configurations in Neutron-Deuteron Breakup
Hometown:	Brooklyn, New York
Professional Societies:	Society of Physics Students, American Physical Society
Hobbies/Interests:	Playing sports such as tennis, basketball, golf; Reading

Geoff Dann

University:	University of Washington
Major:	Biochemistry
Research Institution:	Pacific Northwest National Laboratory
Research Topic:	Liquid-Based Proteome Preparation Development for Poplar Leaf
Hometown:	Richland, Washington
Hobbies/Interests:	Alpha Sigma Phi fraternity, music, being active

Jonathan Dobson

University:	East Tennessee State University
Major:	Computer Science
Research Institution:	Oak Ridge National Laboratory
Research Topic:	Providing a Foundation for the Analysis of Large Data Sets and a Framework for Network Analysis
Hometown:	Kingsport, Tennessee
Hobbies/Interests:	Movies, video games, traveling, programming, and cooking

Diana Donati

University:	University of California, Davis
Major:	Materials Science and Engineering
Research Institution:	Los Alamos National Laboratory
Research Topic:	Strain Rate Dependent Mechanical Properties of Textured Beryllium
Hometown:	La Costa, California
Professional Societies:	The National Society of Collegiate Scholars
Hobbies/Interests:	I love anything that involves the outdoors (i.e. biking, hiking, camping, four wheeling, fishing, etc). I always stay active whether it is working out or playing sports. I love going on road trips and exploring new cities. On a more feminine note, I love doing handcrafts such as knitting and cross stitching.

James Dreessen

University:	University of South Dakota
Major:	Chemistry
Research Institution:	Argonne National Laboratory
Research Topic:	Identifying Efficient Implementation of MPPCs into Scintillator Systems
Hometown:	Freeman, South Dakota

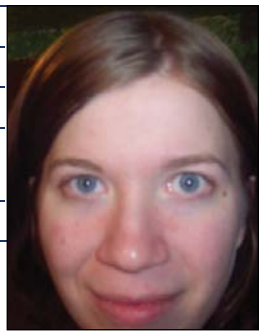
Jeffrey Eldred

University:	College of William & Mary
Major:	Physics and Mathematics
Research Institution:	Thomas Jefferson National Accelerator Facility
Research Topic:	Identifying Efficient Implementation of MPPCs into Scintillator Systems
Hometown:	Williamsburg, Virginia
Hobbies/Interests:	Parliamentary Debate Team, movies, RPGs, programming

Michael A. Estrella

University:	St. Francis College
Major:	Biology and Chemistry
Research Institution:	Brookhaven National Laboratory
Research Topic:	*In Situ* Studies of CeO_{2-x}/CuO_{1-y} Catalyst during the Water-Gas Shift Reaction using X-ray Diffraction and X-ray Absorption Near-edge Spectroscopy
Hometown:	Brooklyn, New York
Professional Societies:	ACS, NOBCChE

Rachel Fairbank



University:	Cornell University
Major:	Genetics
Research Institution:	Oak Ridge National Laboratory
Research Topic:	Characterization of Poplar and Switchgrass by Atomic Force Microscopy
Hometown:	Dryden, New York

Benjamin Fenker

University:	Vanderbilt University
Major:	Physics
Research Institution:	Thomas Jefferson National Accelerator Facility
Research Topic:	Secondary Cherenkov Detectors in Qweak
Hometown:	Yorktown, Virginia

Daniel Fink

University:	University of Rochester
Major:	Chemical Engineering
Research Institution:	Lawrence Berkeley National Laboratory
Research Topic:	The impact of electrolyte degradation on lithium ion battery performance
Hometown:	Medford, New Jersey
Professional Societies:	American Institute of Chemical Engineers, Engineers for a Sustainable World
Hobbies/Interests:	Hiking, cycling, rock climbing, jazz saxophone, alternative energy

Vicky Lynn Giese

University:	California Polytechnic University
Major:	Molecular & Cellular Biology
Research Institution:	Brookhaven National Laboratory
Research Topic:	The Effects of Physical and Chemical Water Quality Parameters on the Distribution of Aquatic Invertebrates within the Carmans River on Long Island, New York
Hometown:	Santa Maria, California
Professional Societies:	SACNAS (Society for Advancement of Chicanos and Native Americans in Science), and ASBMB (The American Society for Biochemistry and Molecular Biology)
Hobbies/Interests:	I enjoy hiking and camping along the coastal regions of California. Gardening is also a passion of mine.

Michalena Grosshans

University:	Ohio Northern University
Major:	Biology
Research Institution:	Idaho National Laboratory
Research Topic:	Development of Bioforensic Methods for Brucella abortus
Hometown:	Idaho Falls, Idaho
Professional Societies:	The American Society for Biochemistry and Molecular Biology, Beta Beta Beta
Hobbies/Interests:	Music, EMT, hiking, friends, and learning to cook

Tyler Guzzardo

University:	University of Michigan
Major:	Nuclear Engineering and Radiological Sciences
Research Institution:	Oak Ridge National Laboratory
Research Topic:	Sensitivity Study of Electron Dose Distributions in Inhomogeneous Water Phantoms
Hometown:	Brighton, Michigan
Professional Societies:	Alpha Nu Sigma, National Nuclear Engineering Honor Society
Hobbies/Interests:	Hiking, golfing, and photography

Ryan Joseph Hanson

University:	Allegheny College
Major:	Cell Biology
Research Institution:	Oak Ridge National Laboratory
Research Topic:	Poly(N-isopropylacrylamide-co-Acrylic Acid) Scaffolds Prepared with Nerve Growth Factor as a Transfer System for the Treatment of Parkinson's Disease
Hometown:	Presto, Pennsylvania

Valerie Hanson

University:	Hamilton College
Major:	Physics
Research Institution:	Oak Ridge National Laboratory
Research Topic:	Using Electron Paramagnetic Resonance to Calculate Absolute ^{3}He Polarization
Hometown:	Greenville, Rhode Island
Hobbies/Interests:	I want to become an engineer. I play rugby. I enjoy taking apart and repairing electronics. I play guitar and saxophone.

Sara Haque

University:	Centre College
Major:	Mathematics
Research Institution:	Oak Ridge National Laboratory
Research Topic:	Mathematical Modeling of Fatty Acid Oxidation in Skeletal Muscle Cells
Hometown:	Knoxville, Tennessee

Joseph T. Heard

University:	Syracuse University
Major:	Mathematics
Research Institution:	Brookhaven National Laboratory
Research Topic:	Faraday Effects Significance on the Detection of Virtual Pairs and Anomalous Space-Time Curvature
Hometown:	Philadelphia, Pennsylvania
Professional Societies:	National Society of Black Engineers
Hobbies/Interests:	Football, musician and fiction writing

Ian Higginson

University:	University of Idaho
Major:	Electrical Engineering
Research Institution:	Los Alamos National Laboratory
Research Topic:	Development of Signal Modulation Methods and Control Systems for a Ground-based Pulsar: the Superluminal Source
Hometown:	Longview, Washington
Professional Societies:	IEEE
Hobbies/Interests:	Backpacking, biking, tennis, soccer, guitar, running, computers, renewable energies, mathematics, logic puzzles, music, and pretty much anything relating to electrical engineering

Carissa Humrickhouse

University:	Whitworth University
Major:	Physics
Research Institution:	Pacific Northwest National Laboratory
Research Topic:	Effect of Carbon Addition on Simulated Hanford Tank Waste Melting Rate
Hometown:	Selah, Washington
Hobbies/Interests:	Amateur astronomy, tennis, billiards, travel interests, nuclear energy

A. Andrew D. Jones, III

University:	Massachusetts Institute of Technology
Major:	Mathematics & Mechanical Engineering
Research Institution:	Oak Ridge National Laboratory
Research Topic:	Mathematical and Experimental Characterizations of the Chemical Vapor Infiltration Process
Hometown:	Tallahassee, Florida
Professional Societies:	National Society of Black Engineers, American Institute of Chemical Engineers
Hobbies/Interests:	Reading, writing, cycling as a collection of hobbies. Fluid dynamics as a general interest.

Yonatan Kahn

University:	Northwestern University
Major:	Physics, math, music performance
Research Institution:	Thomas Jefferson National Accelerator Facility
Research Topic:	A New Method for Extracting Neutron Structure Functions from Nuclear Data
Hometown:	San Jose, California
Professional Societies:	APS, Phi Beta Kappa
Hobbies/Interests:	French horn, music composition

Ali Kareem

University:	University of the Virgin Islands
Major:	Biology
Research Institution:	Pacific Northwest National Laboratory
Research Topic:	Development of Infrared and Raman Spectral Databases for Characterization of Hanford Tank Waste Samples
Hometown:	St. Croix, Virgin Islands
Professional Societies:	Institute of Food Technologists, MBRS-RISE Scholar
Hobbies/Interests:	Basketball, Chi Kung, watching movies

Brita Kilburg

University:	Loras College
Major:	Biology
Research Institution:	Ames Laboratory
Research Topic:	Quantifying the Infectious Period of Bean Leaf Beetles and the Latent Period of Bean Pod Mottle Virus in Soybean
Hometown:	Maquoketa, Iowa
Professional Societies:	At Loras, I belong to DES (A national Catholic Honor Society), Student Senate (Treasurer of the Junior Class), LEAF, Health Science Club, and the Honors program.
Hobbies/Interests:	I like playing tennis and reading. I also enjoy music and am involved with the women's choir at my college.

Joseph R. Koby

University:	New Mexico Tech
Major:	Materials Engineering
Research Institution:	Los Alamos National Laboratory
Research Topic:	Limitations of the Preisach Model: Experiments on Sedimentary Rocks
Hometown:	Espanola, New Mexico
Hobbies/Interests:	Anything having to do with explosives, outdoor sports, fractal "art", and gadgets (just to name a few)

Kaelynn Koch

University:	Iowa State University
Major:	Physics
Research Institution:	Ames Laboratory
Research Topic:	Transcriptional Repressor AcrR
Hometown:	Ames, Iowa

Jessica Kubicek

University:	University of New Mexico
Major:	Biology
Research Institution:	Los Alamos National Laboratory
Research Topic:	Detection of the Antigen 85 Complex, a Tuberculosis-Specific Biomarker, in Patient Urine using a Waveguide-Based Optical Biosensor for Potential Tuberculosis Diagnostic Applications
Hometown:	Los Alamos, New Mexico
Hobbies/Interests:	I enjoy playing and coaching soccer, skiing, salsa dancing, cooking, and playing with my extremely energetic toddler. My scientific interests are in biochemistry, molecular biology, and microbiology.

Bradley Landgraf

University:	Allegheny College
Major:	Chemistry
Research Institution:	Oak Ridge National Laboratory
Research Topic:	The Development of a Novel Thermodenuder for Internal Combustion Engine Emissions Analysis
Hometown:	Chicora, Pennsylvania
Professional Societies:	Phi Lambda Upsilon, Psi Chi
Hobbies/Interests:	Reading, traveling, music, playing tennis, watching movies

Joao C. Luna

University:	Barry University
Major:	Chemistry
Research Institution:	Lawrence Berkeley National Laboratory
Research Topic:	Photochemical Modification of Silica-base Monoliths with Nanolayer of Fluorinated Methacrylate
Hometown:	Morelia, Michoacan, Mexico
Professional Societies:	Student Member of the American Chemical Society
Hobbies/Interests:	Sports such as strength training are among my favorite hobbies. Also, reading and listening to music occupy an important place in my life.

Kasey R. Lund

University:	Montana State University
Major:	Physics
Research Institution:	Montana State University
Research Topic:	Investigation of Coal Gas as a Fuel Source for Solid Oxide Fuel Cells
Hometown:	Miles City, Montana
Professional Societies:	Society of Physics Students, Montana Army National Guard, HiTEC Montana State Solid Oxide Fuel Cell Group
Hobbies/Interests:	Guitar, hockey, soccer, reading, painting, weight lifting, running, cooking, wine tasting, traveling, and volunteering

Carmen Maldonado

University:	Southern University at New Orleans
Major:	Biology
Research Institution:	Brookhaven National Laboratory
Research Topic:	Population Assessment of the New York State Threatened Banded Sunfish (*Enneacanthus obesus*) Conducted in Zeke's Pond and the Peconic River
Hometown:	New Orleans, Louisiana
Professional Societies:	Beta Kappa Chi, National Scientific Honor Society, Vice President, 2008-2009; National Institute of Science First Fifty Knights, Beta Beta Beta, National Biological Honor Society Who's Who Among College Students, Thurgood Marshall Scholar Scholarship for Excellence in Natural Sciences, Scholar Program for Excellence in Science, Mathematics and Computer Technology Scholar, Louisiana Alliance for Minority Participation Scholar
Hobbies/Interests:	My hobbies and interests include studying science. In addition to this I enjoy reading novels and cooking.

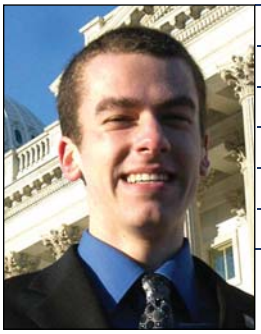
Amanda Manley

University:	College of DuPage
Major:	Animal Science
Research Institution:	Argonne National Laboratory
Research Topic:	Investigation of a Porous Electrolyte Layer in a Stainless Steel Supported Solid Oxide Fuel Cell to Help Oxygen Electrode Adhesion
Hometown:	Wheaton, Illinois
Professional Societies:	Phi Theta Kappa, M.A.N.R.R.S.(Minorities in Agriculture, Natural Resources, and Relates Sciences), and I am a 4-H Leader.
Hobbies/Interests:	I am quite fond of agricultural activities. I currently tend two beehives, and raise dairy goats.

Garrett Marino

University:	Massachusetts Institute of Technology
Major:	Atmospheric Science
Research Institution:	Oak Ridge National Laboratory
Research Topic:	False Spring Occurrence over the Southeastern United States, 1901-2007
Hometown:	Hazlet, New Jersey
Professional Societies:	American Meteorological Society (AMS)
Hobbies/Interests:	Weather forecasting, golf, numismatics, and last but not least, research!

Brian D. McCarthy



University:	Massachusetts Institute of Technology
Major:	Chemistry
Research Institution:	Oak Ridge National Laboratory
Research Topic:	AES Analysis of a Two-Step Nitride Coating Process
Hometown:	Hillsboro, Oregon
Hobbies/Interests:	Reading, cooking, enjoying nature, spending time with friends

Carlton McMullen

University:	Jackson State University
Major:	Microcomputer Technology
Research Institution:	Pacific Northwest National Laboratory
Research Topic:	Optimization and Fabrication of Laminated Steel Armor
Hometown:	Little Rock, Arkansas
Professional Societies:	Arkansas Dr. Martin Luther King Commission Free Masonry West Jackson Masonic Lodge # 697 of Jackson Mississippi Royal Arch Mason, PHA. Phillips Ch. # 46-A SME (Society for Manufactures and Engineers), NAIT (National Association for Industrial Technologist), NAACP (National Association for the Advancement of Colored People) Mr. NAACP, NSBE (The National Society of Black Engineers), Ronald E. McNair Scholars Program
Hobbies/Interests:	I am really interested in circuitry design and modification, and computational research geared towards optimizing products, as well as playing saxophone.

Elizabeth Millings

University:	SUNY at Stony Brook
Major:	Chemistry
Research Institution:	Brookhaven National Laboratory
Research Topic:	[F-18]Fluoride for Peptide and Protein Labeling
Hometown:	Central Islip, New York
Professional Societies:	American Chemical Society Student Affiliates
Hobbies/Interests:	Medical research, nutrition, history, piano, violin, singing, sewing, horseback riding

Romarie Morales

University:	University of Puerto Rico
Major:	Mathematics
Research Institution:	Pacific Northwest National Laboratory
Research Topic:	Through-Container Measurement of Acoustic Signatures for Classification/Discrimination of Liquid Explosives (LEs) and Precursor Threat Liquids from Non-Threat Liquids
Hometown:	Guayanilla, Puerto Rico
Professional Societies:	American Statistical Association, SACNAS (Society for Advancement of Chicanos and Native Americans in Science, Society for Industrial and Applied Mathematics (SIAM)
Hobbies/Interests:	A high profile interest that I possess is being able to contribute with the development of tools that may help fortify the National Security of the United States of America. One of my biggest passions is preparing my self academically so that, in the future, I can help solve the economic constraints that Puerto Rico is going through. Since the United States economy has a mayor impact on the Puerto Rican society, in my spare time I pay close attention to the policies, financial and political moves that the federal government approves. I also have a great interest in historical events that define the political environment of a country. On the other hand, I also enjoy reading, listening to music, dancing, and playing sports.

Molly Renee Nelis

University:	Rose-Hulman Institute of Technology
Major:	Electrical Engineering and Mechanical Engineering
Research Institution:	Los Alamos National Laboratory
Research Topic:	Use of Collocated Sensor/Actuators for Vibration Suppression and Structural Health Monitoring
Hometown:	Grand Haven, Michigan
Professional Societies:	ASME IEEE
Hobbies/Interests:	Rock climbing, cycling, human powered vehicle, Delta Delta Delta, knitting, fractals

Evelyne Ntam

University:	Morgan State University
Major:	Chemistry
Research Institution:	Morgan State University
Research Topic:	The Development of Cyanine Dyes as a Potential Chemo-Therapeutic Agent
Hometown:	Silver Spring, Maryland
Professional Societies:	ACS (American Chemical Society, ASCB (American Society of Cell Biology), AAI (American Association of Immunology), NOBCChE (National Organization of Black Chemists and Chemical Engineers)
Hobbies/Interests:	I enjoy reading, the arts and physical fitness.

Oleg Ovchinnikov

University:	University of Tennessee
Major:	Physics
Research Institution:	Oak Ridge National Laboratory
Research Topic:	Non Grid AFM
Hometown:	St. Petersburg, Russia

Zachary Aaron Owens

University:	Walters State Community College
Major:	Computer engineering
Research Institution:	Oak Ridge National Laboratory
Research Topic:	Simulation of High Power Electromagnetic Wave Heating in the Fusion Plasma
Hometown:	Tulsa, Oklahoma
Hobbies/Interests:	I like reading about all types of technology and physics. I am also learning Polish, which is my wife's native language. I am constantly reading and watching anything educational to help expand my knowledge of what is in this universe and how it may work.

Erica Palma

University:	Stony Brook University
Major:	Biomedical Engineering
Research Institution:	Brookhaven National Laboratory
Research Topic:	Functionalization of Gold Nanoparticles with DNA
Hometown:	Mastic Beach, New York
Professional Societies:	Stony Brook Chapter of the Biomedical Engineering Society (BMES)
Hobbies/Interests:	Baking, cooking, beach and boating and the outdoors

Jacques Eric Pape

University:	Morehouse College
Major:	Applied Physics and International Relations
Research Institution:	Oak Ridge National Laboratory
Research Topic:	RF Quadrupole Ion Cooler for Negative Ions
Hometown:	Chicago, Illinois
Professional Societies:	National Society of Collegiate Scholars
Hobbies/Interests:	With a world facing a very acute energy crisis, I foresee nuclear engineering as the way of the future. I have a strong passion for this particular energy source and I believe the over the next 10 years, the US government will be compelled to invest heavily in the Nuclear energy sector. On an international scale, organizations such as the International Atomic Energy Agency should be given more attention as they help resolve key issues between nuclear and non-nuclear powers.

Alexander Pegram

University:	Middle Tennessee State University
Major:	Physics
Research Institution:	Oak Ridge National Laboratory
Research Topic:	Optimization of Spontaneous Parametric Down Conversion Parameters
Hometown:	Murfreesboro, Tennessee
Professional Societies:	American Physical Society
Hobbies/Interests:	Physics homework

Victoria Perez

University:	The University of Texas – Pan American
Major:	Biology
Research Institution:	Argonne National Laboratory
Research Topic:	Purification and Crystallization of Proteins
Hometown:	Donna, Texas
Professional Societies:	Habitat for Humanity
Hobbies/Interests:	Painting, listening to music

Zachary Pierpoint

University:	Pennsylvania State University
Major:	Physics
Research Institution:	Fermi National Accelerator Laboratory
Research Topic:	Calibration of and Preliminary Results for a NUMI Beam Coincident Neutron Detector in the MINOS Tunnel
Hometown:	Bethlehem, Pennsylvania

Kiran Rangaraj

University:	University of California, Berkeley
Major:	Biochemistry
Research Institution:	Lawrence Berkeley National Laboratory
Research Topic:	Where Multifunctional DNA Repair Proteins Meet: Mapping the Interaction Domains between XPG and WRN
Hometown:	Milpitas, California

Pawan Rastogi

University:	Columbia University
Major:	Chemistry
Research Institution:	Los Alamos National Laboratory
Research Topic:	Sensitizing and Protecting Lanthanide Ion Emission Using Optically Active Nanocrystals
Hometown:	South Hempstead, New York
Professional Societies:	American Chemical Society, Phi Beta Kappa
Hobbies/Interests:	On the whole I enjoy spending time with friends and doing anything outdoors, including hiking, mountain biking, fishing, and camping. I volunteer at my local Medical Center on my days off and as an aspiring physician I try to incorporate my medical interests within my research.

Jesse Resnick

University:	Westminster College
Major:	Chemistry
Research Institution:	Los Alamos National Laboratory
Research Topic:	Synthesis of Non-Fouling and Chemically Functional Films for Bio-sensing Applications
Hometown:	Salt Lake City, Utah
Professional Societies:	American Chemical Society, Tri-Beta Biological Honors Society, Silverado Hospice Brighton Ski Patrol, Pajarito Ski Patrol
Hobbies/Interests:	Skiing, climbing, biking, trying to learn about theoretical physics, golf, soccer, and cooking/eating food

Katherine Rosenfeld

University:	Yale University
Major:	Physics and Astronomy
Research Institution:	SLAC National Accelerator Laboratory
Research Topic:	Probing the Jet Content of Blazars using Approximate Methods
Hometown:	Piedmont, California
Hobbies/Interests:	Juggling, drama tech, backpacking

Emir D. Rubi

University:	Barry University
Major:	Chemistry
Research Institution:	Lawrence Berkeley National Laboratory
Research Topic:	Our work focuses primarily on the synthesis of porous alumina-based monolithic structures and their potential application as separation media in Microscale Liquid Chromatography.
Hometown:	Miami, Florida
Professional Societies:	I am a member of the U.S. Army Chemical Corps Regimetal Association. I am also a member of the Phi Theta Kappa Honor Society.
Hobbies/Interests:	My hobbies include playing sports, soccer in particular. I am also an avid reader and film enthusiast. I also like listening to live music from many different genres. I am also a big fan of outdoor activities like hiking and trail biking.

Nathaniel Sanchez

University:	University of New Mexico
Major:	Mechanical Engineering
Research Institution:	Los Alamos National Laboratory
Research Topic:	Shock Initiation Properties of the HMX Based Explosive PBX-N9
Hometown:	Chimayo, New Mexico
Professional Societies:	Pi Tau Sigma (International Mechanical Engineering Honor Society), ASME (American Society of Mechanical Engineers) Student Chapter
Hobbies/Interests:	Camping, hiking, hunting, fishing, four-wheeling, skiing; shock waves and material behavior at high strain rates

Ramy M. Sayed

University:	Middle Tennessee State University
Major:	Pre-medicine/biology/chemistry
Research Institution:	Oak Ridge National Laboratory
Research Topic:	The forewarning analysis uses scalp EEG, which is non-invasive. Scalp EEG data measure electrical activity produced by the brain. The analysis involves over two hundred datasets (more than 80 GB). Initial work on 60 well-characterized datasets involved training of the method by Dr. Lee Hively (primary mentor) with a goal of forewarning of known epileptic events, and providing no forewarning for non-event data. The present work involves analysis of test data, which presently are uncharacterized. Correct (non-)forewarning of (non-)events in these data provide an acid test of the method. Reliable seizure forewarning would allow preventive action, reduce morbidity and mortality, and improve patients' quality of life. Consequently, the objective of this work is retrospective analysis of human brain-wave (electroencephalogram, EEG) data to forewarn of epileptic events.
Hometown:	Nashville, Tennessee
Professional Societies:	SNMA, NSCS, Pre-scripts, Chemistry Club MTSU Chapter
Hobbies/Interests:	Computer blogging, soccer, computer programming, football, basketball, racquetball, anatomy!

Julia Scheevel

University:	Rice University
Major:	Physics
Research Institution:	Los Alamos National Laboratory
Research Topic:	Needs-Based Agent Schedule Generation using Genetic Algorithms
Hometown:	Austin, Texas
Professional Societies:	American Physical Society
Hobbies/Interests:	I am currently the drum major of The MOB, the Rice University Marching Owl Band.

Dain Schroeder

University:	Big Bend Community College
Major:	Computer Sciences
Research Institution:	Lawrence Berkeley National Laboratory
Research Topic:	Mac and PC Performance Analysis
Hometown:	Quincy, Washington

Nicholas Sewell

University:	University of Tennessee, Knoxville
Major:	Chemical and Biomolecular Engineering
Research Institution:	Oak Ridge National Laboratory
Research Topic:	Chemical Vapor Deposition of an Aluminum - Aluminum Nitride Composite
Hometown:	Powell, Tennessee
Hobbies/Interests:	Poetry, Frisbee Golf, Baseball, Football, Soccer

Danna Sharp

University:	East Tennessee State University
Major:	Biology
Research Institution:	Oak Ridge National Laboratory
Research Topic:	Photosystem I for Artificial Sight (Standardized of PSI Isolation by Hydroxylapatite Chromatography and Incorporation into Liposomes)
Hometown:	Knoxville, Tennessee
Professional Societies:	Talent Expansion in Quantitative Biology
Hobbies/Interests:	I am interested in alternative energy research, and I occasionally play soccer.

Nyesha Smith

University:	Southern University at New Orleans
Major:	Biology
Research Institution:	Brookhaven National Laboratory
Research Topic:	Metabolic Fingerprint from Long Island Pine Barren Forest Soil, NY
Hometown:	New Orleans, Louisiana

Benjamin A. Spott

University:	Kent State University
Major:	Biotechnology
Research Institution:	Oak Ridge National Laboratory
Research Topic:	Enzyme Catalysis in Fuel Cells
Hometown:	Solon, Ohio
Hobbies/Interests:	I am the president of my social fraternity, Alpha Epsilon Pi. I enjoy working out, running, racquetball, bowling, frisbee, and working on cars. I am interested in clean and renewable sources of energy.

Ha'Wanna St. Cyr

University:	Southern University at New Orleans
Major:	Biology
Research Institution:	Brookhaven National Laboratory
Research Topic:	Ecological Study of the Pine Barren Ponds of Long Island, NY: Sediment Chemistry
Hometown:	New Orleans, Louisiana
Professional Societies:	Delta Sigma Theta Sorority, Inc. (President 08-09), Beta Kappa Chi (BKX) National Scientific Honor Society, National Institute of Science (NIS) (Treasurer 07-08, 08-09), Beta Beta Beta (Tri Beta) National Biological Honor Society (Treasurer 07-08, 08-09), Student Government Association Senator, Who's Who Among College Students, Louisiana Alliance for Minority Participation Scholar (LAMP), Program for Excellence in Science, Mathematics, and Computer Technology Scholar (PESMaCT), Minority Science and Engineering Improvement Program Scholar (MSEIP), and Global Alliance of Education and Language Association Scholar (GAELA).
Hobbies/Interests:	Reading, traveling, networking, mentoring, playing my violin, playing sports, enjoying music, and shopping.

Marc Stevens

University:	Nicholls State University
Major:	
Research Institution:	Pacific Northwest National Laboratory
Research Topic:	Friction Factors Appropriate to Ultra-filtration in the Treatment of Radioactive Waste
Hometown:	Patterson, Louisiana

Keiko Tanaka

University:	University of California, Berkeley
Major:	Engineering Physics
Research Institution:	Lawrence Berkeley National Laboratory
Research Topic:	Etching Various Shapes in Silicon Nitride Wafers
Hometown:	Rancho Palos Verdes, California
Professional Societies:	Epsilon Pi
Hobbies/Interests:	Reading books, listening to music, and running

Christin Walker

University:	East Tennessee State University
Major:	
Research Institution:	Oak Ridge National Laboratory
Research Topic:	Verifying Drying Equipment Design Parameters
Hometown:	Knoxville, Tennessee

Jeremy Walker

University:	University of Tennessee
Major:	Undetermined
Research Institution:	Oak Ridge National Laboratory
Research Topic:	RealityVision
Hometown:	Farragut, Tennessee
Hobbies/Interests:	Computers and sports

Mary Weston

University:	DePauw University
Major:	Biochemistry
Research Institution:	Idaho National Laboratory
Research Topic:	Metabolic Engineering of *Alicyclobacillus acidocaldarius* via Electroporation for the Production of Biodegradable Plastics.
Hometown:	Cascade, Idaho
Hobbies/Interests:	I enjoy martial arts, formally studying Hapkido, Tae Kwon Do and Brazilian Jiu-jitsu. I am a member of Chemistry Club and D.U.C.K.S (the academics team). I enjoy musical activities and various sports, especially volleyball.

Michael Wiederoder

University:	Michigan State University
Major:	Biosystems Engineering
Research Institution:	Lawrence Livermore National Laboratory
Research Topic:	Fundamental Studies on Diffusion Rate Nanomaterials through Nanopores
Hometown:	Midland, Michigan
Hobbies/Interests:	Soccer, singing acapella music, volunteering

Whitney Wutzler

University:	The Ohio State University
Major:	Chemical Engineering (Nuclear Engineering minor)
Research Institution:	Oak Ridge National Laboratory
Research Topic:	Continuous Load Cell Monitoring
Hometown:	Westerville, Ohio
Professional Societies:	American Institute of Chemical Engineers, Institute of Nuclear Materials Management
Hobbies/Interests:	I'm obviously interested in chemistry, but I'm really intrigued by the nuclear industry and national security. Other than science, I enjoy music of all kinds, I play piano and guitar, and I also make my own jewelry.

Chuan Zhang

University:	University of North Carolina at Chapel Hill
Major:	Chemistry (Polymer)
Research Institution:	University of North Carolina at Chapel Hill
Research Topic:	At UNM: Effect of ZnO morphology on methanol steam reforming activity of Pd/ZnO catalysts. Currently at UNC: Microscopy of different ZnO nanostructures synthesized via hydrothermal route and chemical vapor deposition
Hometown:	Lancaster, Ohio
Professional Societies:	AICHE
Hobbies/Interests:	Basketball, weight lifting, ping tong, learning about different cultures, traveling, investing

DOE National Laboratories

Ames Laboratory

Argonne National Laboratory

Brookhaven National Laboratory

Fermi National Accelerator Laboratory

Idaho National Laboratory

Lawrence Berkeley National Laboratory

Lawrence Livermore National Laboratory

Los Alamos National Laboratory

National Energy Technology Laboratory

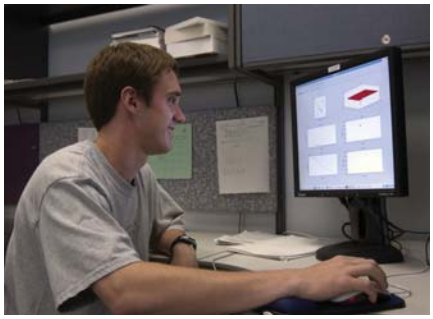
Oak Ridge National Laboratory

Pacific Northwest National Laboratory

SLAC National Accelerator Laboratory

Thomas Jefferson National Accelerator Facility

Ames Laboratory
Ames, Iowa



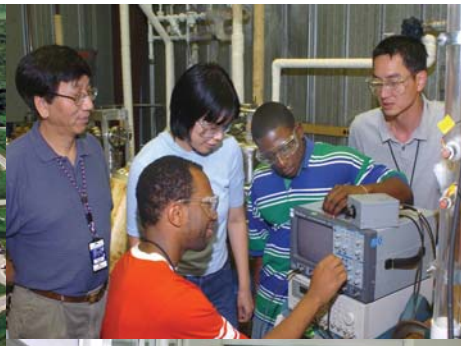
Scientists at the Department of Energy Office of Science's Ames Laboratory seek solutions to energy-related problems through the exploration of chemical, engineering, materials and mathematical sciences, and physics.

Established in the 1940s with the successful development of the most efficient process to produce high-purity uranium metal for atomic energy, Ames Lab now pursues much broader priorities than the materials research that has given the Lab international credibility.

Responding to issues of national concern, Lab scientists are actively involved in innovative research, science education programs, the development of applied technologies, and the quick transfer of such technologies to industry. Uniquely integrated within a university environment, the Lab stimulates creative thought and encourages scientific discovery, providing solutions to complex problems and educating tomorrow's scientific talent.

Ames Laboratory is located in Ames, Iowa, on the campus of Iowa State University. Iowa State's 2,000-acre, park-like campus is home to more than 25,000 students. Ames is approximately 30 minutes north of Des Moines, Iowa's capital city.

Argonne National Laboratory
Argonne, Illinois



Argonne National Laboratory descends from the University of Chicago's Metallurgical Laboratory, part of the World War Two Manhattan Project. The laboratory has about 2,900 employees, including about 1,000 scientists and engineers. Argonne occupies 1,500 wooded acres in DuPage County, Illinois, about 25 miles southwest of Chicago's Loop. Argonne research falls into broad categories:

- Basic science seeks solutions to a wide variety of scientific challenges. This includes experimental and theoretical work in biology, chemistry, high energy and nuclear physics, materials science, and mathematics and computer science.
- Scientific facilities help advance America's scientific leadership and prepare the nation for the future. These facilities are used by scientists thousands of scientists and students from the U.S. and abroad. The laboratory is also home to the Advanced Photon Source, the Center for Nanoscale Materials, the Intense Pulsed Neutron Source, and the Argonne Tandem Linear Accelerator System.
- Energy resources programs help insure a reliable supply of efficient and clean energy for the future. Argonne scientists and engineers are developing advanced batteries and fuel cells, as well as advanced electric power generation and storage systems.
- Environmental management includes work on managing and solving the nation's environmental problems and promoting environmental stewardship.
- National Security has increased in significance in recent years for the nation and for Argonne research. Argonne capabilities developed over the years for other purposes are helping to counter the threats of terrorism.

Argonne's Division of Educational Programs provides workforce development for faculty and students from universities to regional K-12 schools.

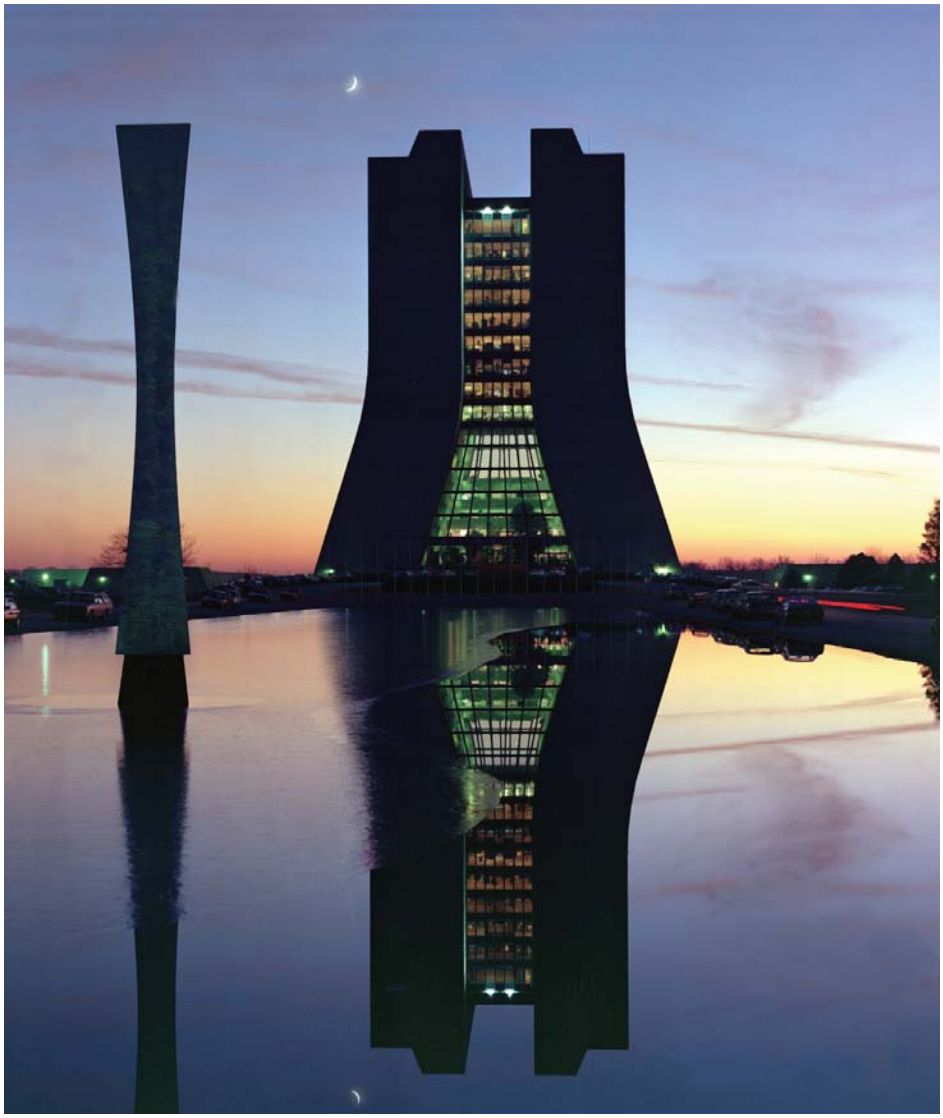
Brookhaven National Laboratory
Upton, New York

Established in 1947, Brookhaven National Laboratory is a Department of Energy, Office of Science multidisciplinary laboratory managed by Brookhaven Science Associates, a company founded by Battelle and Stony Brook University. Home to six Nobel Prizes, Brookhaven conducts research in the physical, biomedical, and environmental sciences, as well as in energy technologies and national security.

Located on a 5,300-acre site on eastern Long Island, New York, Brookhaven builds and operates major scientific facilities available to university, industry and government researchers. Among those facilities are the world's newest accelerator for nuclear physics research, the Relativistic Heavy Ion Collider (RHIC), and the National Synchrotron Light Source (pictured here) where approximately 2,500 researchers use beams of light, from x-rays to ultraviolet and infrared, to study materials as diverse as computer chips and proteins. In the near future, the Center for Functional Nanomaterials will be built at Brookhaven, one of five Department of Energy centers where researchers will study materials on the scale of a billionth of a meter, or only a few atoms.

A wide variety of both basic and applied research is conducted at Brookhaven. For instance, scientists are investigating the building blocks of matter using RHIC, the roots of drug addiction and brain metabolism using positron emission tomography, the effects of space radiation on astronauts using the newly built NASA Space Radiation Laboratory, and the effects of increased carbon dioxide in ecosystems. Brookhaven researchers also develop new technologies as varied as detectors for national security and oil burners with improved efficiency.

Fermi National Accelerator Laboratory
Batavia, Illinois

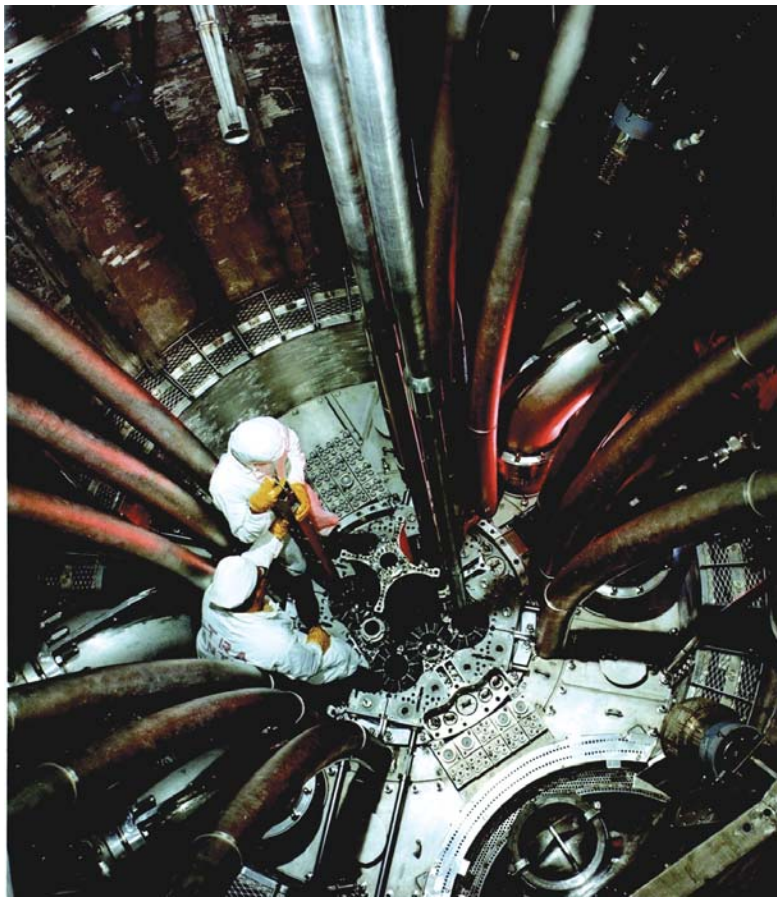


Fermi National Accelerator Laboratory (Fermilab) is one of the world's foremost laboratories dedicated to high-energy physics research. It is operated for the Department of Energy Office of Science by a consortium of 90 research-oriented universities. More than 3,000 scientists from around the world use Fermilab for their experiments.

Fermilab is located on a 6,800-acre site about 35 miles west of Chicago, Illinois. The laboratory is home to the Tevatron Collider, the world's highest-energy particle accelerator. Two large detectors analyze the Tevatron's proton-antiproton collisions to unveil the fundamental forces and particles of the universe. Scientists at Fermilab discovered the bottom quark and the top quark, and first observed the tau neutrino.

Fermilab operates the world's most powerful proton beam for creating neutrinos. The Center for Particle Astrophysics at Fermilab includes groups studying cosmic rays, supernovae, dark energy and other phenomena.

Idaho National Laboratory
Idaho Falls, Idaho

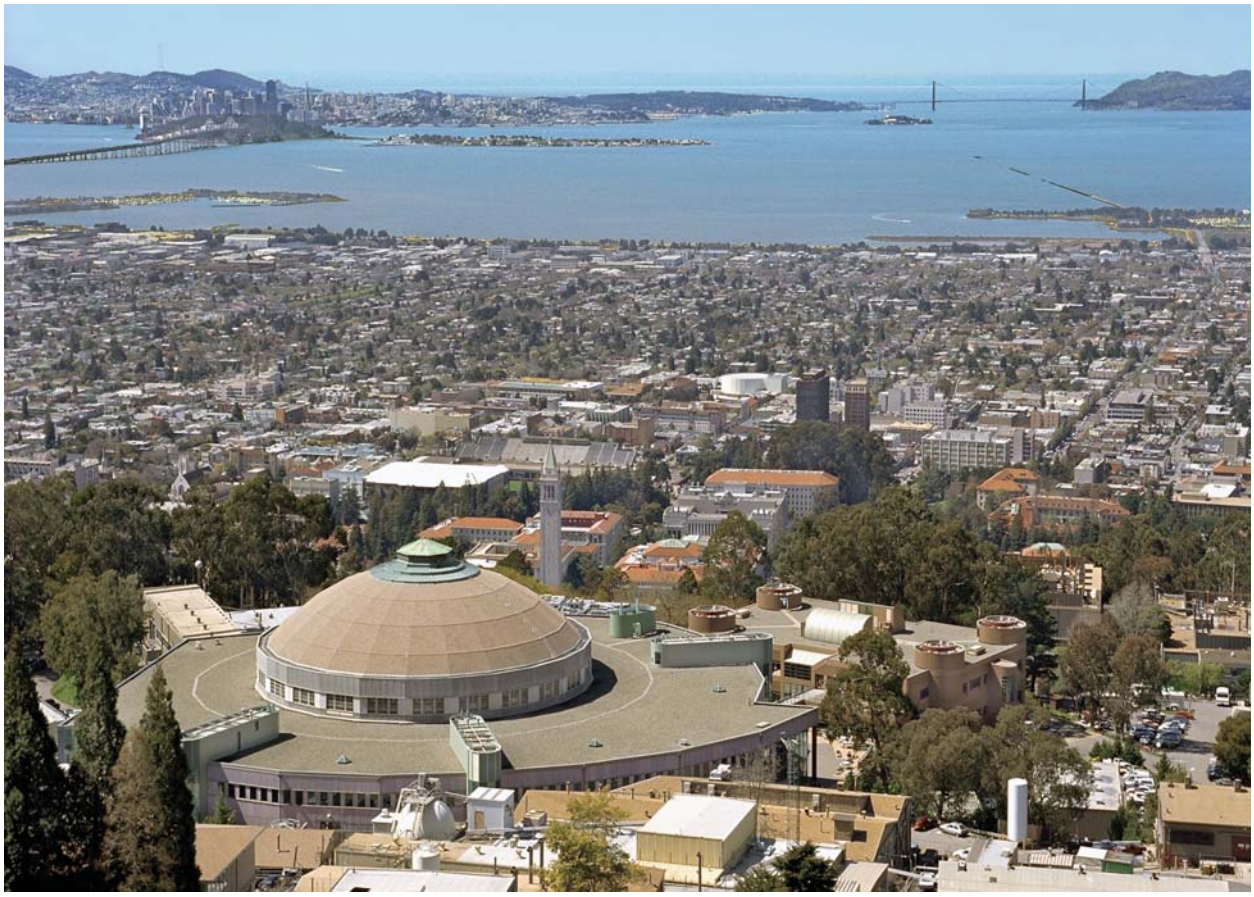


In operation since 1949, The Idaho National Laboratory (INL) is a science-based, applied engineering National Laboratory dedicated to supporting the U.S. Department of Energy's missions in nuclear and energy research, science, and national defense.

INL stands out as a unique national and international resource. Notably, the Lab has been formally designated as the nation's command center for advanced civilian nuclear technology research and development, and is home to the unparalleled Critical Infrastructure Test Range, with assets as diverse as an isolable electric grid and wireless test bed. Leveraging these and numerous other distinguishing features, the Lab and its more than 3,300 scientists, engineers and support personnel build on the potential and promise of the theoretical for the benefit of the real world.

Located in southeast Idaho, INL covers 890 square miles of the Snake River Plain between Idaho Falls and Arco, Idaho. Offices and laboratories are also in the city of Idaho Falls (population 50,000), located about two hours from Grand Teton and Yellowstone national parks and other areas offering prime recreational opportunities.

Lawrence Berkeley National Laboratory
Berkeley, California



Lawrence Berkeley National Laboratory's research and development includes new energy technologies and environmental solutions with a focus on energy efficiency, electric reliability, carbon management and global climate change, and fusion. Frontier research experiences exist in nanoscience, genomics and cancer research, advanced computing, and observing matter and energy at the most fundamental level in the universe.

Ernest Orlando Lawrence founded the Berkeley Lab in 1931. Lawrence is most commonly known for his invention of the cyclotron, which led to a Golden Age of particle physics—the foundation of modern nuclear science—and revolutionary discoveries about the nature of the universe. Berkeley Lab's Advanced Light Source is its premier national user facility centrally located on the lab site overlooking the San Francisco Bay.

Lawrence Livermore National Laboratory
Livermore, California

Lawrence Livermore National Laboratory (LLNL) applies cutting-edge science and engineering to enhance the nation's security. When LLNL was founded in 1952, the consuming national security concern was the nuclear arsenal of the Soviet Union and, for years, our energies, talents and resources were focused on that threat. Today, new perils have arisen that are radically different and vastly more complex, and we are directing our world-class scientific and technological resources against these threats. Assuring the safety, security, and reliability of the nation's nuclear weapon stockpile continues to be the foremost responsibility of LLNL. We are also pushing the frontiers of science and technology to make breakthroughs that will be enable us to meet future needs in national and global security, energy and environment, and economic competitiveness.

LLNL is home to some of the world's most powerful supercomputers, including BlueGene/L, first on the TOP500 list of supercomputers with a sustained world-record speed of 478.2 teraflops. LLNL also supports unique experimental facilities, including the Center for Accelerator Mass Spectrometry, the High Explosives Applications Facility, and the 192-beam National Ignition Facility, which is the world's largest laser system. Our researchers typically work in multi-disciplinary teams, where experts in physical and life sciences, engineering, and computations collaborate to devise and demonstrate solutions to nationally important problems.

LLNL offers numerous opportunities for outstanding scholars and postdoctoral fellows to complement their academic endeavors and enable them to work on exciting areas of research using our advanced experimental facilities and computing resources. Laboratory scientists, many of whom are leading experts in their fields, guide and collaborate with student researchers and have earned numerous commendations as outstanding mentors.

On the local level, the Laboratory offers a wide array of student science enrichment and teacher development programs tied to LLNL science and technology that benefit more than 25,000 K-12 students and teachers each year. Programs include college-accredited teacher research academies and research internships, community science lectures, a science and engineering project competition, tours for school groups, and special educational outreach events.

LLNL is located on a mile-square site at the eastern edge of the Livermore Valley, roughly an hour from San Francisco, two hours from the Pacific Ocean, and three hours from the Sierra Nevada mountains. The Laboratory is managed for the Department of Energy's National Nuclear Security Administration by Lawrence Livermore National Security LLC, a consortium of Bechtel National, University of California, Babcock & Wilcox, Washington Division of URS Corporation, and Battelle.

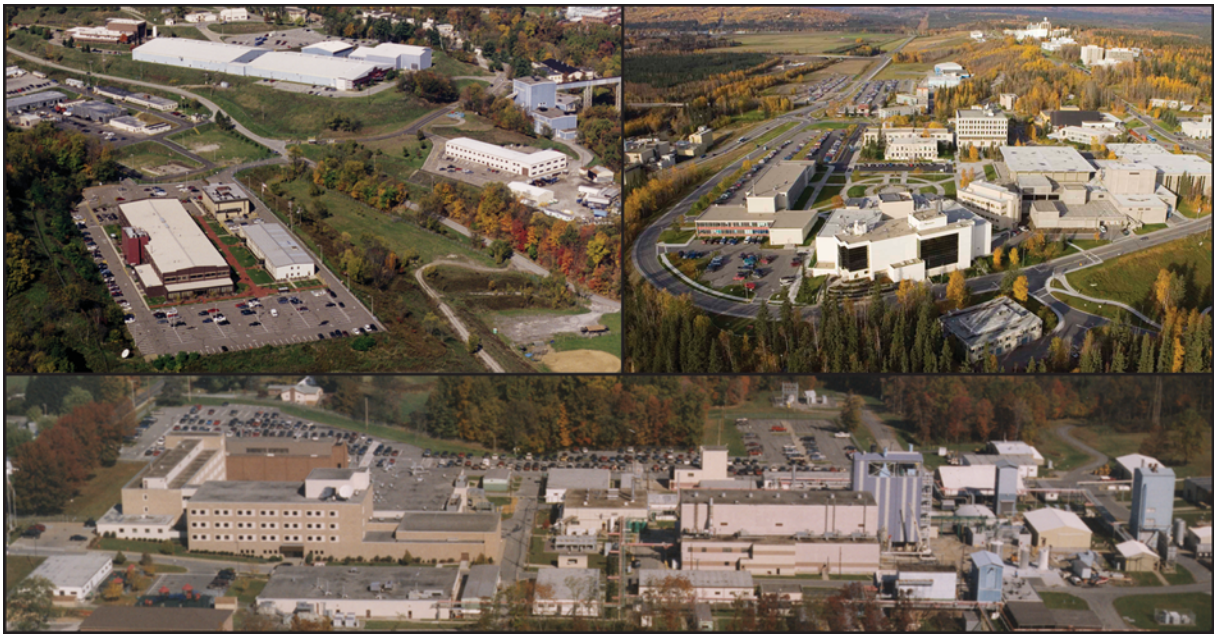
Los Alamos National Laboratory
Los Alamos, New Mexico

The Los Alamos National Laboratory (LANL), located in the Jemez Mountains of northern New Mexico, offers the opportunity for students to work at a multi-disciplinary, world-class research facility while enjoying a truly unique environment. Long known for its artistic community, northern New Mexico also offers a variety of exciting outdoor recreational opportunities, including rock climbing and hiking in the adjacent mountains and canyons, proximity to the Rocky Mountains, and exceptional skiing opportunities at many nearby locations.

We offer a diverse research experience for undergraduate and graduate students as a means of assuring the continued vibrancy of the science, engineering, and technology at the laboratory. Serve your internship with us and you will have the opportunity to work in a team environment with some of the world's top scientists and engineers on critical issues involving our national security, environment, infrastructure, and security. We offer internship opportunities in areas that include: Biology, Chemistry, Computer Science, Physics, Mathematics, Materials Science, Environmental Science, and Engineering: Chemical, Civil, Computer, Electrical, Mechanical, Nuclear, and Software.

If you are a problem solver and independent thinker, a team player, a good communicator, like a hands-on approach, and are self-motivated, we offer you the challenge of an internship at Los Alamos National Laboratory.

National Energy Technology Laboratory
Pittsburgh, Pennsylvania and Morgantown, West Virginia



The National Energy Technology Laboratory (NETL) is a U.S. Department of Energy (DOE) national laboratory that produces technological solutions to America's energy challenges. The laboratory focuses on finding tools and processes that simultaneously address the three overarching issues that characterize today's energy situation in the United States: energy affordability, supply security, and environmental quality.

NETL has three research sites—in Albany, Ore., Morgantown, W.Va., and Pittsburgh, Pa.—that conduct a broad range of energy and environmental research and development (R&D). NETL also has small offices, in Tulsa, Okla., and Fairbanks, Alaska, that address challenges unique to those energy-rich regions. All five locations support DOE's mission to advance the national, economic, and energy security of the United States.

As the only national laboratory owned and operated by DOE, NETL is unique in how it conducts research and in the relationships it forms with industry, academia, and other research organizations. First and foremost, NETL conducts cutting-edge R&D on site. About one-quarter of NETL's approximately 1,200 Federal and contractor employees are directly engaged in onsite research.

NETL also applies its extensive project-management capabilities to shape, fund, and manage research throughout the United States and in more than 40 foreign countries. The laboratory's research portfolio includes more than 1,300 projects, with a total award value of nearly $11 billion and private sector cost-sharing of nearly $6 billion.

In addition, NETL conducts studies of complex, large systems and the interactions among those systems. Published results of the studies provide strategic information and analysis to the policymakers responsible for providing direction and funds to ensure that America has a continuing supply of clean, affordable energy.

Oak Ridge National Laboratory
Oak Ridge, Tennessee

Oak Ridge National Laboratory is the Department of Energy's largest science and energy laboratory. Managed since April 2000 by a partnership of the University of Tennessee and Battelle, ORNL was established in 1943 as part of the secret Manhattan Project to pioneer a method for producing and separating plutonium. Today ORNL has a research portfolio in excess of $1.3 billion, a staff of more than 4,200 and approximately 3,000 guest researchers (undergraduates, graduate students, postgraduates, teachers, and faculty) who spend two weeks or longer each year in Oak Ridge. The recently completed $1.4 billion Spallation Neutron Source, located adjacent to the new Center for Nanophase Materials Sciences, is rapidly making Oak Ridge one of the world's foremost locations for the study of materials. ORNL's National Leadership Computing Facility now houses the world's most powerful open science supercomputer and soon will house a computer capable of a mind-boggling 1000 trillion calculations per second. Each of these facilities will work closely with ORNL's new Bioenergy Science Center, funded by DOE to develop breakthrough technologies for cellulosic ethanol.

Since 2000, UT-Battelle has provided more than $8 million in support of math and science education, economic development, and corporate volunteerism in the greater Oak Ridge region as well as various civic, cultural and public awareness activities related to the Department of Energy's mission.

Pacific Northwest National Laboratory
Richland, Washington

Pacific Northwest National Laboratory (PNNL), on the sunny eastern side of Washington State, is one of the U.S. Department of Energy's (DOE) ten national laboratories, managed by DOE's Office of Science. PNNL also performs research for other DOE offices as well as government agencies, universities, and industry to deliver breakthrough science and technology to meet today's national needs. PNNL is home to the William R. Wiley Environmental Molecular Sciences Laboratory, a DOE Office of Science national science user facility. PNNL also operates a marine research facility in western Washington.

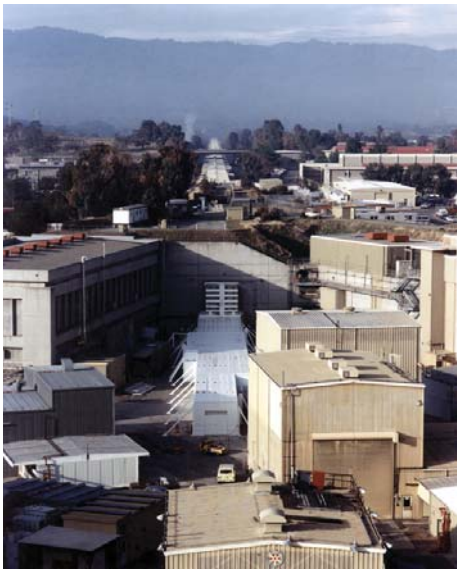
Our Laboratory 1) provides the facilities, unique scientific equipment, and world-renowned scientists/engineers to strengthen U.S. scientific foundations for fundamental research and innovation; 2) prevents and counters acts of terrorism through applied research in information analysis, cyber security, and non-proliferation of weapons of mass destruction; 3) increases U.S. energy capacity and reduces dependence on imported oil through research of hydrogen and biomass-based fuels; and 4) reduces the effects of energy generation and use on the environment.

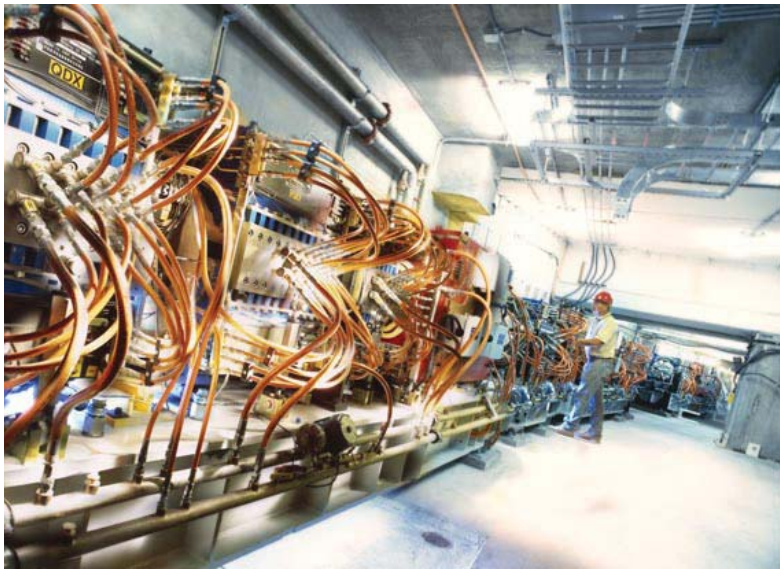
We champion science, technology, engineering and mathematics (STEM) education from "grade school to grad school" in order to support the "college and workforce ready" agenda of the Nation, DOE, our region and local communities. We help to develop and educate the scientists and engineers of tomorrow. We strive to impact STEM education by acting as a catalyst for sustainable positive change on national, regional and local levels. This includes providing thought leadership, creating business-in education partnerships, participating in scalable initiatives, and advancing the progress of existing programs that have proven results, but require additional resources and partnerships to broaden their impact.

The Laboratory consistently attracts some of the world's leading scientific talent and engages them in our education programs. Student research opportunities at PNNL include, but are not limited to, appointments in atmospheric science and global change, computational sciences, experimental chemistry, marine sciences, molecular biology, environmental studies, remediation, environmental microbiology, wildlife and fisheries biology, materials research, process science and engineering, economics and political science.

PNNL is located at the confluence of the Columbia, Snake and Yakima rivers within driving distance of the Blue and Cascade mountain ranges. The region is known for year round outdoor recreational opportunities, fine wines, and the community's commitment to the arts.

SLAC National Accelerator Laboratory
Menlo Park, California





SLAC is one of the world's leading laboratories for research in high-energy physics (HEP), particle astrophysics and cosmology, and synchrotron radiation research.

SLAC's HEP program seeks answers to fundamental questions about the ultimate structure of matter and the forces between these fundamental particles. The BABAR experiment investigates matter/anti-matter asymmetry and is the current focus of the HEP program. In addition, a vigorous R&D program is focused on realizing the next generation electron collider — the International Linear Collider, as part of a world-wide effort.

The Kavli Institute at SLAC for Particle Astrophysics and Cosmology bridges theoretical and experimental physics communities, and brings their combined strengths to bear on some of the most challenging and fascinating problems in particle astrophysics and cosmology to help us understand the birth and evolution of the universe.

The Stanford Synchrotron Radiation Laboratory (SSRL) at SLAC, provides high intensity x-ray beams for molecular and atomic scale studies in physics, biology, chemistry, medicine, and environmental science. The Linac Coherent Light Source (LCLS), a facility to provide even more intense x-ray capability is now under construction. Pioneering experiments at LCLS will advance our understanding of everything from the hidden physics inside planets, to how proteins function as the engines of life, to building nanotechnology devices for the backbone of future industry and technology.

Thomas Jefferson National Accelerator Facility
Newport News, Virginia

The Thomas Jefferson National Acceleration Facility, or Jefferson Lab, is a nuclear physics research laboratory located in Newport News, Virginia. Nuclear physics research scientists who use Jefferson Lab are on a journey of discovery into the nucleus of the atom. Their goal is to develop a roadmap of matter that helps unlock the secrets of how the universe is put together. Nuclear physics funding from the Department of Energy provides Jefferson Lab with leading-edge instrumentation, world-class facilities and training and support for the people involved in these pursuits. Forefront nuclear physics research conducted at Jefferson Lab provides solid foundations for other fields. The accumulation of new results and the intellectual training of new generations of scientists foster important advances in medicine, chemistry and other sciences.

Scientists at Jefferson Lab use the Continuous Electron Beam Accelerator Facility — the first large-scale application of superconducting radiofrequency technology — to conduct physics experiments. Using accelerated electron beams, experimenters probe the sub-nuclear realm. Using this same technology, Jefferson Lab has built the world's brightest high average power Free Electron Laser that offers unique capabilities for defense, industry, basic research and medicine.

Office of Science Program Offices

The Department of Energy's Office of Science is the single largest supporter of basic research in the physical sciences in the United States. It oversees and is the principal Federal funding agency of the Nation's research programs in high energy physics, nuclear physics, and fusion energy sciences. The Office of Science sponsors fundamental research programs in basic energy sciences, biological and environmental sciences, and computational science. In addition, the Office of Science is the Federal Government's largest single funder of materials and chemical sciences, and it supports unique and vital parts of U.S. research in climate change, genomics, life sciences, and science education.

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