#### **CUNY – NYCCT**

# Brookhaven National Laboratory: A Research Opportunity November 20, 2012

Noel Blackburn

Manager University Relations and DOE Internship

Programs

http://www.bnl.gov/education



### **National Labs with funding from WDTS**





# **Pacific Northwest National Laboratory (PNNL)**





# **Lawrence Livermore National Laboratory (LBNL)**





# Oak Ridge National Laboratory (ORNL)





# **Argonne National Laboratory (ANL)**





### **About Brookhaven National Laboratory**

Established in 1947 on Long Island, Upton, New York,
Brookhaven is a multi-program national laboratory operated by
Brookhaven Science Associates for the U.S. Department of
Energy (DOE). Six Nobel Prizes have been awarded for
discoveries made at the Lab.

Brookhaven has a staff of approximately 3,000 scientists, engineers, technicians and support staff and over 4,000 guest researchers annually.

#### **MAJOR FACILITIES:**

- Relativistic Heavy Ion Collider (RHIC)
- Center for Functional Nanomaterials (CFN)
- Photon Sciences (NSLS/NSL II)
- Alternating Gradient Synchrotron (AGS)
- Laser-Electron Accelerator Facility (LEAF)
- New York Blue
- Positron Emission Tomography (PET)
- Solar Farm

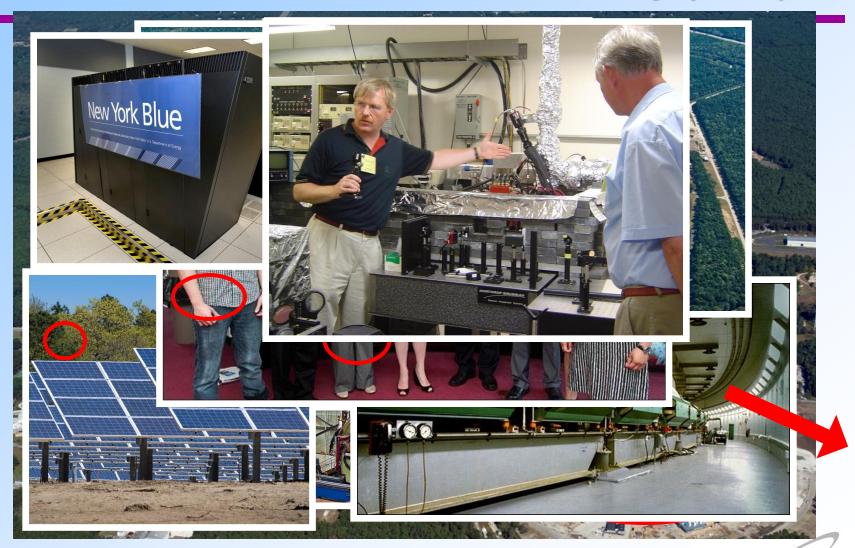


# **Aerial View of BNL & RHIC Ring**





# **Brookhaven National Laboratory (BNL)**



# **The RHIC Tunnel**







### **Beam line at NSLS**





# **PET Facility**







# **NSLS Building**







#### **College Mini-Semester/CSTEP Mini-Course**

- Open to 2 yr. and 4 yr. math and science majors
- 1 week Winter program
- Lectures, Workshops and Tours
- Interactive research labs
- Research presentation and paper
- Reverse interview with BNL Scientists



#### **DOE Internship Programs:**

- Science Undergraduate Laboratory Internship (SULI)
- Community College Internship (CCI)
- Visiting Faculty Program





#### **BNL Internship Programs:**

- Science Undergraduate Research Program(SURP)
- Community College Research Program (CCRP)
- College Research Team Program (CRTP)
- Brookhaven Pre-Service Teacher Program (BPST)
- Brookhaven Teaching Fellows Program (BTFP)



# **DOE Internship Programs @ BNL**

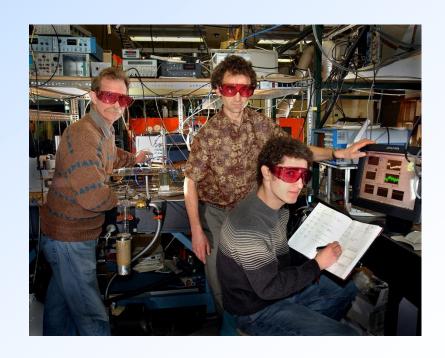
#### **Community College Internship (CCI):**



- Community College Students who are math, science or technology majors
- 10 week paid summer program (\$500 per week; Free Housing and Roundtrip Transportation)
- Participate in enrichment modules
- Produce abstract, poster and research paper

#### Science Undergraduate Laboratory Internship (SULI)

- Open to math, physical and life sciences, engineering, computer science and technology majors
- 10-week paid Summer program
- 16-week paid Spring and Fall programs
- Participate in enrichment modules
- Produce abstract, poster and research paper





#### **Visiting Faculty Program (VFP):**

 One faculty with or without 1-2 undergraduate or graduate students working alongside BNL scientists on a research project

- 10 week paid Summer program
- Launch point to develop and strengthen university research capacity
- Create sustainable relationships





#### **Brookhaven Pre-Service Teacher Program (BPST):**



- 10 Week Summer Program
- Upper Division Students
- Assigned to a Mentor
- Work With a Master Teacher
- Produce an Educational Module with a poster



# **Closing Program**

- Graduate/Professional School Panel Discussion
- Grad Fair
- Poster Session
- Oral Presentations





### **DOE Summer Internship Programs**

#### **Time Line**

- October 09, 2012 applications open
- Jan. 10, 2013 application process CLOSES
- Jan. 29, 2013 completed applications open for Lab viewing
- Within 2-3 weeks DOE funding are exhausted
- Summer Internship starts June 03<sup>rd</sup>, 2013
   ends Aug 09<sup>th</sup>, 2013



# **OEP Summer Internship Program**





# DOE wants the Best & Brightest

#### **GPA Calculation:**

```
Engl. 101 - 3 crs.
                   A (4.0)
                             = 12.0
                                             Engl. 101 - 3 crs.
                                                                          = 12.0
                                                                A (4.0)
Math 204 - 3 crs.
                   A^{-}(3.7) = 11.1
                                             Math 204 - 3 crs.
                                                                A- (3.7)
                                                                          = 11.1
Chem. 301 - 5 crs.
                   B (3.0) = 15.0
                                                                C (2.0)
                                                                          = 10.0
                                            Chem. 301 - 5 crs.
                                                                A (4.0)
                   A (4.0)
                             = 12.0
                                             Math 204 - 3 crs.
                                                                          = 12.0
Math 204 - 3 crs.
Total
         - 14 crs.
                                50.1
                                             Total
                                                      - 14 crs.
                                                                              45.1
Semester GPA
                   = 50.1 / 14
                                             Semester GPA
                                                                = 45 1 / 14
         GPA
                   = 3.58
                                                       GPA
                                                                = 3.22
```

The Difference between Honor Roll or not is the attention to details in class.

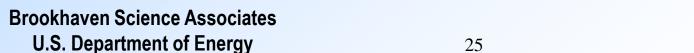


# **The Pathway It Works**



#### **BNL Website**









#### **Educational Programs**

Teachers lome About

Students College Faculty

Mentors

News

Follow Us









Programs & Contests

Information

#### **Now Featuring**



#### 2nd Annual SCI-ED Day

hosted at BNL on November 6, 2012. provides a professional development opportunity for elementary and secondary science teachers.



#### Open Space Stewardship Program 2012 Teacher Workshops

Fosters partnerships between schools (grades K-12), land stewards, local communities, and government agencies.



#### The Science Learning Center

offers programs to students in grades 1-12, featuring interactive exhibits, handson labs, and programs that demonstrate basic scientific principles

#### **Current News**



Local High School Sisters Win Major Award for Studies at Brookhaven Lab

Twins Shweta and Shilpa Iyer won Siemens Regional Finalist Honors for work on new catalysts to split water into pure hydrogen.

Friday, December 07, 2012

http://www.bnl.gov/education/

Friday, November 30, 2012

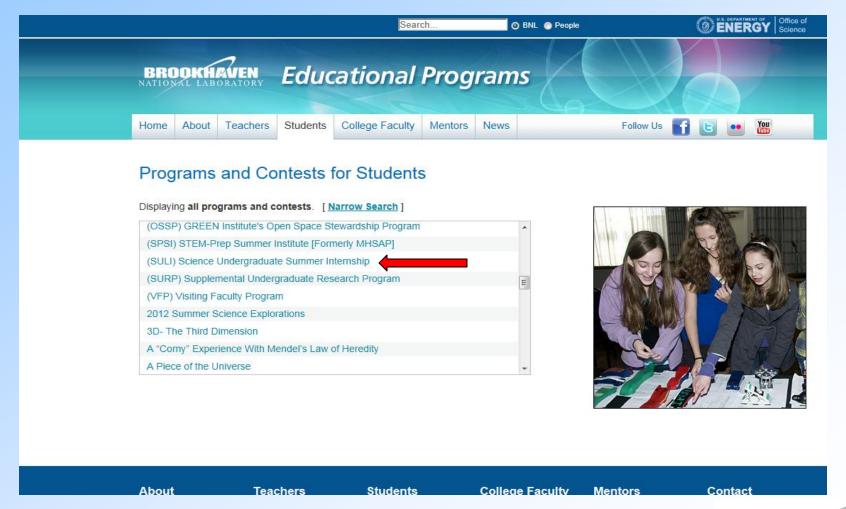
12 p.m., Science Learning Center

**Upcoming Events** 

"Holiday Store"

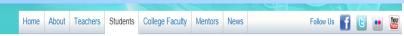


# **Program Webpage**





# STEP 1 – SULI Page



#### (SULI) Science Undergraduate Summer Internship

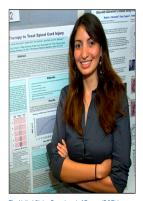
The U.S. Department of Energy (DOE) has established a national program to give research experience in areas of chemistry, physics, engineering, biology, nuclear medicine, applied mathematics, highand low-energy

Brookhaven National Laboratory (BNL) offers student appointments though a national program titled the Science Undergraduate Laboratory Internship (SULI) developed through DOE. Participants will be placed with members of the scientific and professional staff in an educational program developed to give research experience in areas such as chemistry, high- and low-energy physics, engineering, biology, nuclear medicine, applied mathematics.

At BNL, a SULI summer appointment will include features which have been the mainstay of our undergraduate Summer Student Program since 1952:

- · You will participate in a cutting-edge scientific research program, directed by a BNL staff member. The nature of your research assignment will be determined after a review of your background and interests by our staff, relative to their current research activities.
- · As a major user facility, BNL attracts visiting scientists and university faculty from across the US and internationally. Like them, you will be treated as a colleague in your research group and a full member of the BNL community - able, as time permits, to attend or take part in

the second second second



The United States Department of Energy (DOE) has established undergraduate research internships at national laboratories across the country. These internships are run for 10 weeks during the summer. There are also opportunities during the fall and spring semesters. Internships are offered in areas such as physics, biology, chemistry, environmental and atmospheric sciences, engineering, computers applied mathematics and nuclear science.

Important Dates

Program Starts: Monday, June 03, 2013, at 7:00 a.m.

Program Ends:

- As a major user facility, BNL attracts visiting scientists and university faculty from across the US and internationally. Like them, you will be treated as a colleague in your research group and a full member of the BNL community - able, as time permits, to attend or take part in scientific seminars, visit major BNL facilities, and interact casually with other undergraduates, graduate students, post-doctoral fellows, and technical staff, as well as your immediate research group. You may also participate in a wide variety of recreational activities available to Laboratory employees.
- · You may have the chance to offer presentations of your research results verbally and/or in writing; your work may appear in a contribution to a scientific journal or BNL report. The goals of SULI at BNL are to offer not only a specific learning experience, but an exposure to the scientific enterprise to support future career developments.

#### Important Dates

Program Starts: Monday, June 03, 2013, at 7:00 a.m.

#### Program Ends:

Friday, August 09, 2013, at 5:00 p.m.

#### Application Deadline:

Thursday, January 10, 2013, at 11:00 p.m.

#### Contact Information

For more information about this program, contact:

Dr. Mel Morris Brookhaven National Laboratory Blda.438 - P.O. Box 5000 Upton, NY 11973-5000 631-344-5963 (phone) 631-344-5832 (fax) mmorris@bnl.gov

· For all non-local students, dormitory-style single-room (air-conditioned) housing is made available.

#### Audience for This Program

Undergraduate College Students

#### Application Process

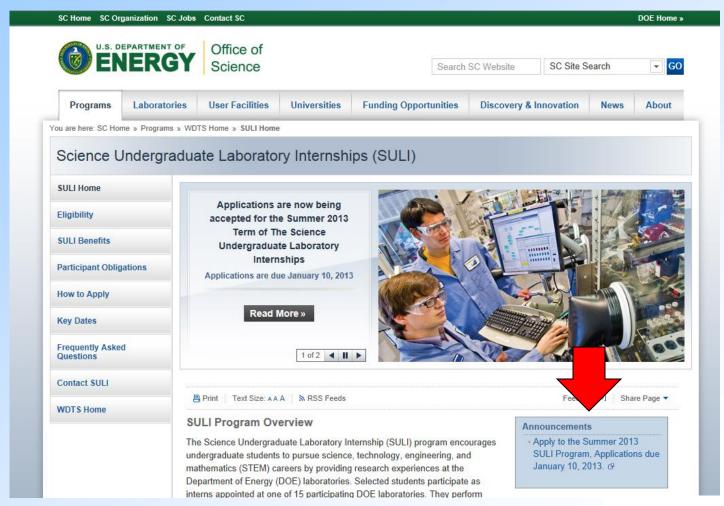
Key SULI dates

Apply to SULI



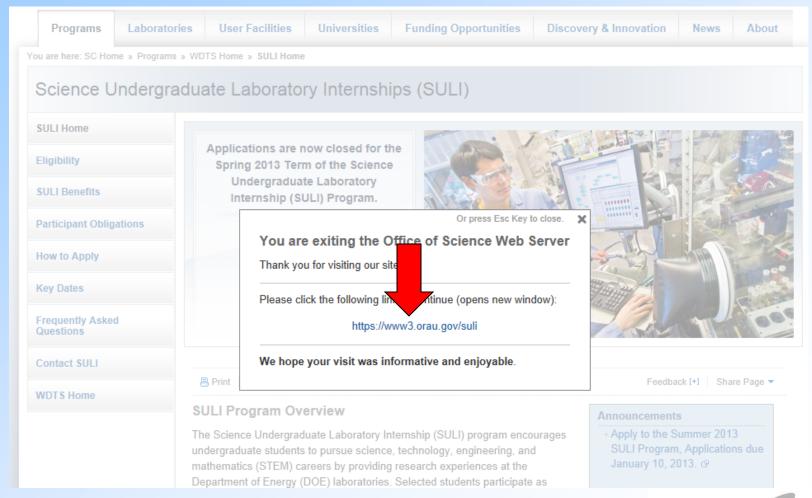


# STEP 2 – DOE Application Page

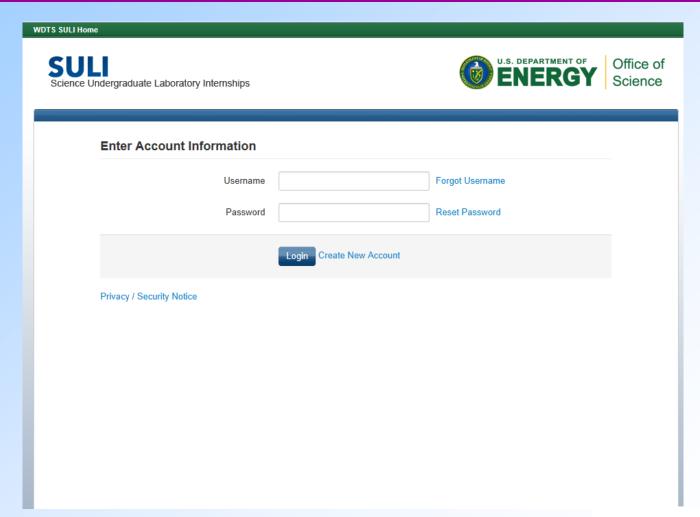




### Step 2 Cont'd

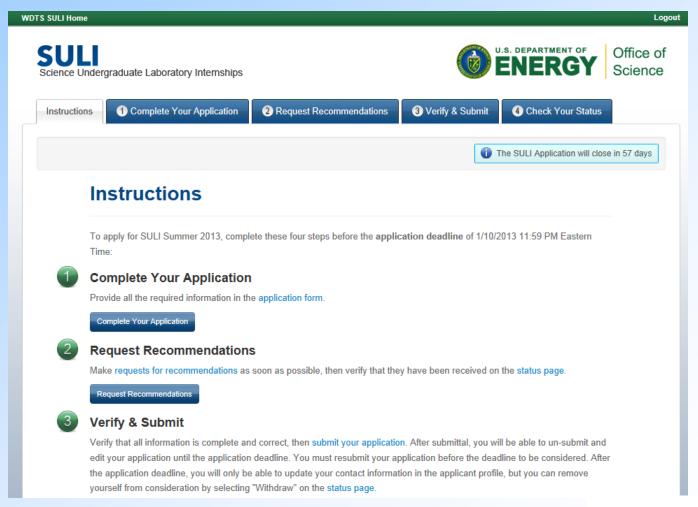


# STEP 3 - Login page





# STEP 4 – Start Application (Pg 1)





#### **Further Information**

Tele: 631-344-4000

#### **OEP Website:**

www.bnl.gov/education

#### **OEP** email:

<u>oep@bnl.gov</u>



