

# 2021 HAMPTON ROADS BIOELECTRICS SUMMER INSTITUTE



## Student Selection

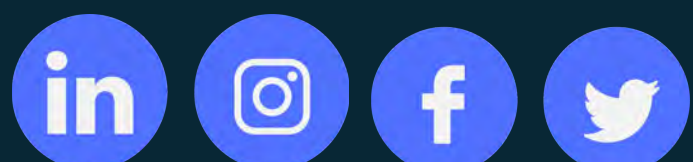
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- Be a member of an underrepresented group in STEM: African American, American Indian, Hispanic, Female, Socioeconomically Disadvantaged
- Be interested in learning about STEM as a career
- Be academically talented, especially in science and mathematics

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For more information,  
please visit:

[www.odu.edu/bioelectrics/education/bioelectrics-summer](http://www.odu.edu/bioelectrics/education/bioelectrics-summer)

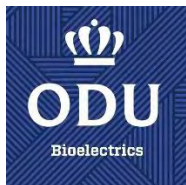


## About

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The summer institute will be held at the educational facilities on Old Dominion University (ODU) campus. The Bioelectrics Summer Institute Program is a one-week residential academic program for rising 6th -12th graders, respectively in the Hampton Roads area who express a design to pursue a career in Science, Technology, Engineering, and Math (STEM). The program provides students with information and research experience in various fields of Bioenergy, materials engineering, and medicine to acquaint them with the requirements for pursuing a career in STEM. Students participate in engineering related classroom projects and blend materials engineering and medical research to solve real world problems.





## 2021 Hampton Road Bioelectronics Summer Institute Program Application

Registration: Participants may submit applications and supporting documents beginning February 3, 2021. Deadline for application and supporting documents is **Monday, March 22, 2021 at 5:00 p.m.** Late or incomplete applications **will not** be processed.

Application for the following program:

- ☐ Science Exploration (*Rising 6<sup>th</sup> & 7<sup>th</sup> Grader*)
- ☐ Materials Exploration I (*Rising 8<sup>th</sup> & 9<sup>th</sup> Grader*)
- ☐ Materials Exploration II (*Rising 10<sup>th</sup> & 11<sup>th</sup> Grader*)
- ☐ Research in Bioenergy and Cancer (*Rising 12<sup>th</sup> Grader*)

**\*\*\*DO NOT ENCLOSE ANY PAYMENT WITH THIS APPLICATION\*\***

### PART ONE: STUDENT INFORMATION

Name: \_\_\_\_\_  
Last First MI  
Date of Birth \_\_\_\_\_ Age \_\_\_\_\_ Gender \_\_\_\_\_ Minority Group/Race \_\_\_\_\_  
Street Address \_\_\_\_\_ City \_\_\_\_\_ Zip \_\_\_\_\_  
Phone Number ( ) \_\_\_\_\_ T-Shirt Size: (Adult) XS S M L XL XXL XXL  
Name of School \_\_\_\_\_ Current Grade in School \_\_\_\_\_

### PART TWO: PARENT/GUARDIAN

If selected, my child has permission to participate in the Bioelectronics Summer Institute Program (BSIP). I acknowledge that attendance in the **Family Orientation Program** is **mandatory**. I understand that this is a residential program.

Signature of Parent/Guardian \_\_\_\_\_ Date \_\_\_\_\_  
Name (Printed) \_\_\_\_\_  
Phone Number \_\_\_\_\_ Alt. Number \_\_\_\_\_

### PART III: COUNSELOR/TEACHER/SCHOOL OFFICIAL

I recommend \_\_\_\_\_ to participate in the Bioelectronics Summer Institute Program. S/he has demonstrated academic potential and has an interest in Science, Technology, Engineering and/or Math.

Signature \_\_\_\_\_ Date \_\_\_\_\_  
Name (Printed) \_\_\_\_\_  
Title \_\_\_\_\_ School \_\_\_\_\_

### PART IV: SUPPORTING DOCUMENTS

This application must be accompanied by the following items:

- Copy of the most recent semester grades and copies of grades for the past two semesters
- Copy of the most recent achievement test score(s) (*if applicable*), i.e. PSAT, SAT, ACT
- List of academic awards/honors and current school activities
- An essay (250 words or less) answering one of the following questions:
  - *How have your past accomplishments in science and engineering prepared you for the 2021 Bioelectronics Summer Program?*
  - *How will the 2021 Bioelectronics Summer Institute Program help you achieve your personal and educational goals?*

The essay must be the student's original work with his/her full name printed in the top left corner.

Mail complete application and supporting documents to:

**Bioelectronics Summer Institute  
Center for Bioelectronics  
4211 Monarch Way, Suite 200  
Norfolk, VA 23508**

Deadline to return the complete application package is **Monday, March 22, 2021 at 5:00 p.m.** Incomplete application packages **will not** be processed.

## **GENERAL INFORMATION**

The Hampton Roads-Bioelectrics Summer Institute Program (HR-BSIP) and its sponsors will be presenting the *2021 Bioelectrics Summer Institute Program (BSIP)*. The summer institute will be held at educational facilities on Old Dominion University (ODU) campus. The main office of BSIP is located at ODU, Frank Reidy Research Center for Bioelectrics.

The Bioelectrics Summer Institute Program is a *one-week residential* academic program for rising 6<sup>th</sup> -12<sup>th</sup> graders, respectively in the Hampton Roads area who express a desire to pursue a career in Science, Technology, Engineering, and Math (STEM). The program provides students with information and research experience in various fields of Bioenergy, materials engineering, and medicine to acquaint them with the requirements for pursuing a career in STEM. Students participate in engineering related classroom projects and blend materials engineering and medical research to solve real world problems. All students enjoy visiting local area firms to witness firsthand, the work of engineers and scientist as well as attend lectures by practicing engineers in various fields.

Students who apply for the program should meet the following criteria:

- Be a member of an underrepresented group in STEM: African American, American Indian, Hispanic, Female, Socioeconomically Disadvantaged
- Be interested in learning about STEM as a career
- Be academically talented, especially in science and mathematics

The application and all supporting documents must be received by March 22, 2021 at 5:00 p.m. Students will be advised of their acceptance by late April 2021.

## **PROGRAM DESCRIPTIONS**

Program Dates 6/21/2021 – 6/25/2021

**Science Exploration: For rising 6<sup>th</sup> and 7<sup>th</sup> graders.** The Science Exploration introduces students to the practice of science and engineering and familiarizes them with Science and Engineering as a profession. Practicing engineers are invited to talk to the students about their job. Arrangements will be made for the students to tour local industries and businesses and visit Busch Gardens. They will also participate in science and engineering related projects and present them at the closing ceremonies.

**Materials Exploration I: For rising 8<sup>th</sup> and 9<sup>th</sup> graders.** The Materials Exploration exposes students to material synthesis and fabrication, all of which will supplement their research project on the fabrication of biological and chemical sensors. Materials Exploration is aimed at cultivating the scientific method in all aspects of the research projects. In addition, the students will attend engineering seminars given by professionals. Arrangements will be made for the students to tour local industries and businesses and visit Busch Gardens. The mathematics pre-requisite for this phase is the completion of Algebra I.

**Materials Exploration II: For rising 10<sup>th</sup> and 11<sup>th</sup> graders.** This is a summer high school research opportunity to qualified students who are interested in summer research experiences in medical research and related sciences. Materials Explorations II is designed to encourage students who are interested in engineering, medicine, physics, chemistry, materials science, biology, or any relevant sciences, to pursue scientific research as a potential career, and to prepare these students for undergraduate studies in a Higher-Education Institution as outstanding research students and leaders in the scientific community. Students of this program will acquire stronger research skills by working under the direction of participating faculty mentors at the Frank Reidy Research Center for Bioelectrics, and they will improve their skills and competitiveness necessary for the successful pursuit of an undergraduate degree (B.S.). Final group projects will be presented to parents during the closing ceremony.

**Research in Bioenergy and Cancer: For rising 12<sup>th</sup> graders.** This intensive research program exposes students to research design in bioenergy harnessing and cancer diagnostics and therapeutics. The students will be given the opportunity to apply their design process with a sound academic basis that is integrated with their theoretical knowledge to bring useful diagnostic and therapeutic tools to reality. The topical integration is reflected in the design of self-powered sensors and the development of diagnostic and therapeutic tools for breast cancer.

## **TRANSPORTATION**

Transportation for all field trips will be provided by BSIP.

## **LODGING**

Old Dominion University Housing and Residence will make residence hall lodging available for all students participating in BSIP. Residential Assistants (RAs) will provide supervision and security in the residence halls. Participants will be issued individual room keys.

## **FEES**

A non-refundable program fee of **\$750** is required. The fees will help to offset administrative costs incurred to run the Bioelectrics Summer Institute Program. Included in the fees is the field trip to LifeNet and Busch Gardens amusement park. A \$30 fee will be charged for all checks returned for insufficient funds. This fee covers charges BSIP incurs from the bank(s). Do not enclose any payment with this application.

### **BSIP Use Only**

Mathematics Average Grade \_\_\_\_\_ Science Average Grade \_\_\_\_\_ Test Scores \_\_\_\_\_

Committee Decision: Accept \_\_\_\_\_ Decline \_\_\_\_\_ Waitlist \_\_\_\_\_ Board Member Signature \_\_\_\_\_

Notes \_\_\_\_\_