Tuskegee University

Summer Research Experience for Undergraduates in Integrative Biosciences
Application Deadline March 1, 2010
Program Duration: May 24 to July 30, 2010

Purpose

• To provide hands-on research experience in the area of Integrative Biosciences (plant genomics, bio-complexity in the environment, biology, and bioinformatics, animal sciences and cell/molecular biology and much more!)

Award:

• $4500 stipend support /10 weeks

• Housing and Meal Plan

• Travel Allowance

Eligibility Criteria:

• Must be a rising junior or senior

• Should have a cumulative GPA ≥ 3.0 in STEM major, including agriculture, biology, chemistry, engineering, computer science, food/nutritional sciences, etc.

• Demonstrate a strong interest in research

To Apply:
www.onemedicine.tuskegee.edu/IBS/IBS_REU.htm

Contact: Marilyn Hooks at 334-727-8453 or mhooks@tuskegee.edu.
Integrative Biosciences
Research Experiences for Undergraduates Site
at Tuskegee University
Applications Due March 1

PROGRAM: Tuskegee University, in association with the National Science Foundation Research Experiences for Undergraduates (REU) Sites Program, is pleased to announce a research program for undergraduates with a novel approach to conduct research by integrating multiple areas in the biosciences. We define “integrative biosciences” research as any research where the continued integration of two or more science disciplines is requisite. Participants will take part in this innovative research program integrating two of the following sub-themes of the IBS-REU, including plant genomics, biocomplexity in the environment, computational biology and bioinformatics, animal sciences and cell/molecular biology. Participants should expect to conduct hands-on research (~40/week) and take part in related activities, including an “Introduction to Research” short-course and a seminar series designed to enhance leadership and communication skills as well as a GRE preparation workshop. A novel Ethics Forum and field trip will also occur during the course of the program. At the completion of the summer, the participants will write and present a report on their research projects.

OBJECTIVES: The objective of the program are to: 1) provide research experiences for undergraduate students, creating a pipeline for research-related pursuits including studies at the master’s and doctoral degree levels and 2) equip students with problem-solving skills and innovative approaches to bioscience research.

SUPPORT: Participants will receive a $4,500 stipend for the ten-week program, housing in dormitories on the Tuskegee University campus, a complete meal plan, and assistance with travel to and from Tuskegee University.

ENVIRONMENT: Students will receive training in and have full access to state-of-the-art instrumentation housed within the College of Agricultural, Environmental and Natural Sciences and the College of Veterinary Medicine, Nursing and Allied Health, working with faculty members who collaborate to form integrative research themes in the biosciences. Our faculty maintain vigorous, student-centric research programs in a wide variety of research areas. Students will also have the opportunity to work closely with a graduate student mentor working in the area of integrative biosciences. Located in the south, the Tuskegee Community enjoys very warm summers. Tuskegee University is located in the historic Tuskegee Institute, AL and students will also have the opportunity to explore the homes of Booker T. Washington and George Washington Carver and revel in their legacy as well as that of the Tuskegee Airmen. The University is only minutes away from historic Montgomery, AL and a short drive from Birmingham AL, the beaches located on the Gulf Coast of AL, and Atlanta, GA.

ELIGIBILITY: The NSF-supported IBS REU participants must be current undergraduate students (enrolled in a degree program (part-time or full-time) leading to a baccalaureate or associate degree and will be "returning to an undergraduate program" after the summer REU program) and must be citizens or permanent residents of the United States or its possessions. Rising juniors and seniors in the STEM majors, but particularly in Biology, Chemistry, Animal Sciences, Plant and Soil Sciences, Agricultural Economics, and other bioscience majors are encouraged to apply.

APPLICATION: To apply, interested persons should complete the application and submit an official transcript, a one page essay indicating career plans and two letters of recommendation. The completed materials should be submitted to Ms. Marilyn Hooks, Department of Agricultural and Environmental Sciences, 201 Milbank Hall, Tuskegee University, Tuskegee, AL 36088-1645, mhooks@tuskegee.edu or Phone: (334)727-8453 Fax: (334)727-8552. Deadline for applications is March 1.

www.onemedicine.tuskegee.edu/IBS/IBS_REU.htm
Sample Projects
Tuskegee University IBS-REU

Project 1 - The Microflora and the Organism as an Environment
A. Deloris Alexander, Ph.D., Assistant Professor, Biomedical Sciences, Microbiology, Genetics

Project 2 - Computer-Driven Bioscience Research
CD Fermin, Ph.D., Professor of Pathobiology http://www.onemedicine.tuskegee.edu/ADRAS/home.htm

Project 3 - Role of Estrogen Receptor (ER) and/or Androgen Receptor (AR)-Mediated Pathways in Estrogen-Inducible Mal-Development of the Penis
Hari Goyal, Ph.D. Professor of Anatomy

Project 4 - Search for longevity alleles in the yeast genomes
Hong Qin, Ph.D. Assistant Professor of Bioinformatics

Project 5 - Synthesis and Investigation of New Classes of Michael Acceptors for Conjugate Addition
Albert Russell, Ph.D., Assistant Professor of Chemistry

Project 6 - High Level Dietary Fat and Meat Quality
Nar Gurung, Ph.D., Assistant Professor of Animal, Poultry, and Veterinary Sciences

Project 7 - Effect of arsenic and dieldrin mixture on Estrogen Receptors
Lanell Ogden Ph.D., Associate Professor of Toxicology

Project 8 - Molecular Mechanisms of Gonadal Function in the Goat
Olga Bolden-Tiller, Ph.D. Assistant Professor, Animal, Poultry, and Veterinary Sciences

Project 9 - Biocomplexity in the Environment
Robert Zabawa, Ph.D., Professor of Agricultural Resource Economics

Project 10 – The Effect of Curcumin on Food Born Pathogens
Ramadevi Nimmnapalli, Ph.D., Assistant Professor of Virology

Project 11 - Thymic Regeneration and Immune regulation: Systemic Lupus Erythematosus
Marcia Martinez, Ph.D., Assistant Professor, Biology

Project 12 – The Interplay of Steroid Hormones and Cognition
Danielle Gray, Ph.D., Associate Professor of Biology

Project 13 - A Molecular Approach to Crop Improvement
Merckline Egnin, Ph.D., Associate Professor, Plant and Soil Science

Project 14 – The Effects of Antimicrobial on Anaerobic Bacteria
Jesse Jaynes, Ph.D., Professor of Biochemistry
Return all materials (application, essay, two letters of recommendation, transcript) to:
Ms. Marilyn Hooks, Department of Agricultural and Environmental Sciences, 201 Milbank Hall, Tuskegee University,
Tuskegee, AL 36088-1645, mhooks@tuskegee.edu or Phone: (334)727-8453 Fax: (334)727-8552.

1. STUDENT INFORMATION (please type):

Name __________________________________________________ Date of Birth ______________________________

School Address

Street address __________________________________ City ________ State ________ Zip code ________

School phone ___________________________ Cell phone ___________________________

School email __________________________________________ Preferred email _______________________

Permanent address

Street address __________________________________ City ________ State ________ Zip code ________

Permanent phone __________________________________________

Emergency Contact ___________________________ Relation to you: ___________________________

Emer. Cont. Address

Street address __________________________________ City ________ State ________ Zip code ________

Emergency Contact Phone ___________________________

Sex: __ Male __ Female

Ethnic background (please mark one):
____ African American ______ Southeast Asian ______ Pacific Islander
____ Hispanic ______ Caucasian ______ Native American or Alaskan Native
____ Other (please specify) __________________________________________

I certify that I am a U.S. citizen or permanent resident. ______ (Yes) ______ (No)

Current Institution __________________________________________

Major ___________________________________ Classification ___________________________

Cumulative GPA_________ Major GPA_________ Expected Date of Graduation ______________________

Do you plan to attend graduate school? _____________ If yes, field of study __________________________

Have you conducted research previously? ______ Yes ______ No If yes, please provide 1) location/program, 2) supervisor (name and contact number/e-mail address), and 3) research dates. __________________________________________

_________________________________________________________________________________________

_________________________________________________________________________________________
II. HONORS AND ACTIVITIES:
List below any research or academic positions you have held (such as teaching assistant, research assistant) including title, dates, responsibilities, and supervisor. You may attach additional sheets if necessary.

List below any research, academic, or civic awards you have received. You may attach additional sheets if necessary.

III. RECOMMENDATIONS:
You will need two recommendations for your application. Recommendations should include the recommendation form (see below) and a letter of recommendation. Recommenders should include professors in science or engineering courses who have taught you or know you well. State the names two persons you have asked to submit letters of recommendation. Please include his/her position, phone number, and e-mail address. Recommendations may be submitted with your application (suggested).

1. 

2. 

IV. TRANSCRIPT:
We will evaluate your application with an unofficial transcript, but any students accepted in the program must provide an official transcript before we can process paperwork.

I certify that all the information provided on this application and all supporting documents are correct, complete and accurate.

Signature ___________________________ Date ___________________________
V. RESEARCH INTEREST:
Please indicate THREE areas in which you would be interested in performing research. Please rank 1-5, 1=greatest interest and 5=least interest.

___ Animal Nutrition  ___ Human Nutrition  ___ Molecular Biology  ___ Immunology  ___ Pharmacology
___ Bioinformatics/Computer Science  ___ Reproduction  ___ Cancer Biology  ___ Biochemistry/Chemistry
___ Environmental Sciences  ___ Plant/Soil Science  ___ Neuroscience  ___ Genetics  ___ Microbiology
___ Virology

Please visit our website to view sample projects at [www.onemedicine.tuskegee.edu/IBS/IBS_REU.htm](http://www.onemedicine.tuskegee.edu/IBS/IBS_REU.htm)

VI. ESSAY: In the space below (you may use the back if needed), please submit a personal statement (essay) regarding your educational and career goals and how summer research at Tuskegee University would help you achieve these goals.
Tuskegee University Research Experience for Undergraduates in Integrative Biosciences

Student Application

Application deadline is March 1

Page 4 of 5

LETTER OF RECOMMENDATION FORM (Recommender 1)
Applicant must complete top portion (please type). You may photocopy this form as many times as you need.

Applicant name

☐ I agree to waive my rights to the content of this recommendation.
☐ I DO NOT agree to waive my rights to the content of this recommendation.

Applicant signature

To be completed by recommender.

How long and in what capacity have you known the applicant?

Please rate the applicant in the following areas.

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<th>Top 10%</th>
<th>Top 25%</th>
<th>Top 50%</th>
<th>Cannot rate</th>
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<td>Potential for graduate school</td>
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Please provide a written evaluation of the applicant, describing your knowledge of the applicant and emphasizing his/her potential for research and for graduate study.

Name of recommender

Organization and Title

Address

Telephone  Email

Signature  Date

Please place this form and your letter in a sealed envelope, sign your name across the flap, and return to the applicant.
LETTER OF RECOMMENDATION FORM (Recommender 2)
Applicant must complete top portion (please type). You may photocopy this form as many times as you need.

Applicant name

☐ I agree to waive my rights to the content of this recommendation.

☐ I DO NOT agree to waive my rights to the content of this recommendation.

Applicant signature

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