

BIOLOGY NEWS



Oakwood University, Department of Biological Sciences

Fall 2019

Oakwood University (OU) is a private Christian institution affiliated with the Seventh-Day Adventist Church. It was established in 1896 and is located in Huntsville, Alabama. In the year 2018, OU had an enrollment of just above 1600 students where about 6% come from 23 countries and 75% represent 40 States around the country. OU has been prominently featured and favorably ranked by various higher education bodies. At above 40 graduates annually, the Association of American Medical Colleges (AAMC) identified OU Biology Department as one of top feeder schools for Black applicants to US Medical Schools. OU was ranked 17th best 4-year college and pre-med program in Alabama (Best colleges.com, and medcolleges.com). The institution has consistently ranked among the top 20 schools in the country to send African American students to medical school. The publication also ranked the University as one of the top science programs of all HBCU's and top 10% in retention and graduation at 75.6%. Many of our OU graduates continue their education to become accomplished professionals.

It is our mission in the Biological Sciences Department to develop in our students, a deep appreciation of career opportunities, and preparation through academic and targeted extra-curricular activities. Our curriculum offers a thorough understanding of the principles underlying basic functions of living organisms. The curriculum is designed for those students who wish to enter graduate, medical, dental, or allied health schools, those planning to teach science in elementary or secondary schools, and those entering the workforce, especially in the Biomedical industry. Our graduates compete favorably for opportunities in laboratory research.

The goals of the Department of Biological Sciences at OU are to recruit, retain, and matriculate minority undergraduate students into STEM-based graduate programs and workforce. In the Fall of 2018, OU had 1636 students enrolled in 58 different majors. About 25% (1 in 4) students at OU are in STEM disciplines with half of those in STEM are in the Biological Sciences Department. Many graduates from the Biological Sciences enroll into professional schools (medical, dental, pharmacy, veterinary), graduate schools (Masters, PhD), combinational degrees (MD/PhD, DDS/PhD) among others. The Biological Sciences Department is known for producing outstanding leaders in the STEM and biomedical fields. A list of over 122 schools that have admitted our graduates is included in this publication. Additionally, some candidates get very generous scholarships from these institutions.

Majors offered in the department: Biology (B.S.), Biomedical Sciences (B.S.), Minor offered: Biology.



Mr. and Miss Oakwood University: biology students today, medical innovators of tomorrow

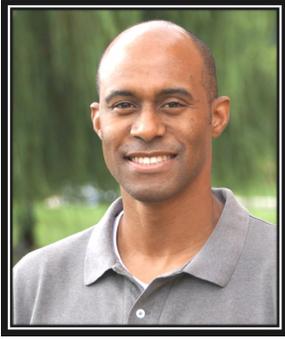
FACULTY & STAFF



Safawo Gullo, DVM, PhD
 Kharkov Veterinary Institute, 1984
 Ph.D., University of Arkansas, 1998
 Degree Area: Zoology
 Expertise: Arthropod-borne
 diseases



Melissa Richardson, PhD
 John Hopkins University,
 2015
 Degree Area: Neurobiology
 Expertise: Regulation of
 Circadian Rhythms



Stanton Dulan, MD
 Medicine, Charles R. Drew/
 UCLA Medical School, 2009
 Degree Area: Medicine
 Expertise: Biomedical Sciences,
 Physiology



Juliet Bailey-Penrod, PhD,
 Wayne State University, 1999
 Degree Area: Pathology/Biology
 Expertise: Cell & Molecular
 Pathology



Elaine Vanterpool, PhD, Chair
 Loma Linda University, 2005
 Degree Area: Microbiology &
 Molecular Genetics
 Expertise: Microbial
 Pathogenesis



Onesimus Otieno, PhD
 Oklahoma State University,
 2002
 Degree Area: Entomology
 Expertise: Ecology



Marie Claire Boutrin, MPH, PhD
 PhD, University of Salford UK 2004
 MPH, Loma Linda University, 2015
 Degree Area: Biological Sciences
 Expertise: Molecular Microbiology/
 Community Health Assessment
 and Development



Londa Schmidt, PhD
 University of Edinburgh, 1982
 Degree Area: Molecular
 Biology
 Expertise: Molecular Genetics



Juliet Durant, PhD
 Texas A&M University 1999
 Degree Area: Microbiology
 Expertise: Bacterial Pathogenesis

STAFF

Ms. Dorothy Merriweather
 Biology Secretary

(Picture not shown)



Mr. Shiraz Davis,
 Lab Coordinator



Mr. Floyd Revan,
 Assistant Lab
 Coordinator

Operation Martinique

Written by Dr. Marie-Claire Boutrin

Following an expressed interest from Martiniquan students and their parents, Oakwood University engaged in a recruitment effort in Martinique, a beautiful Caribbean French overseas territory, in the beginning of May 2019. On this trip, Dr. Boutrin (Biology Department) and Ms. Young (AVP Enrollment Services) conducted 4 main recruitment events and met over 500 students. Dr. Boutrin and Ms. Young met with the leadership, Youth and Education directors of the Seventh-Day Adventist (SDA) Conference and of the SDA French Antilles-Guiana Union. They also met with the leadership, professors and students from the Lycée Bellevue and Schoelcher, two of the highest ranked public High Schools in Martinique. In addition, Ms. Young and Dr. Boutrin recorded an interview at Esperance FM radio, a well renowned SDA radio on the island. Further, Ms. Young and Dr. Boutrin met with the leadership, professors and students of the Cité Scolaire Adventiste Rama, the top private SDA High School in Martinique, which was followed by a presentation at the Maranatha SDA Church, where students and their parents received more information about Oakwood University and had their questions answered. The trip was a success, resulting in a renewed interest from students to attend Oakwood University for their studies, but also leadership of public and private High Schools wanting to send groups to Oakwood University to visit the campus. The SDA Conference in Martinique and the French Antilles-Guiana Union are also interested in developing a partnership with Oakwood University. One student from Martinique already started her studies at Oakwood University this Fall semester in the Biology Department (Welcome Samira Bolo!), and a few more are planning to be here next semester. A bientôt!



Dr. Boutrin speaking to students in Martinique

CLUBS & ORGANIZATIONS

Several professional clubs at OU provide a rich spiritual, academic, and professional experience while at OU. These clubs undertake many activities during the academic school year which help our students better relate to their future careers while developing leadership skills.

Students are free to join and participate in any club within the department. The Oakwood Bio-Medical Association (OBMA) is the umbrella organization of the Biology department. It is responsible for organizing weekly meetings with professionals each Friday afternoon and collaborates with other clubs.

Below are the student clubs hosted in the Department of Biological Sciences along with their faculty sponsors.

- Cancer Awareness and Research Association (Drs. Juliet Penrod & Marie Claire Boutrin)
- Ecology Club (Drs. Juliet Durant & Onesimus Otieno)
- Oakwood Bio-Medical Association (Drs. Londa Schmidt and Elaine Vanterpool)
- OU Shot at Life (Dr. Onesimus Otieno)
- OU Youth Enrichment Association (Dr. Elaine Vanterpool)
- Pre-Dental Club (Dr. Stanton Dulan)
- Pre-Vet Club (Dr. Safawo Gullo)



President of OBMA

UAB Visits Oakwood OBMA

Written by Amy Dauphin, Photographer: France Archange

On September 27 Jenna Blythe-Tjia, M.Ed came to speak about The University of Alabama at Birmingham, School of Medicine (UAB School of Medicine), to the Oakwood Biomedical Association (OBMA). In the past, she has fostered a relationship between OU and the UAB School of Medicine by encouraging our students to apply to the UAB summer programs while conducting mock interviews, and exposing OU pre-meds to the Medical School's curriculum. As the Program Manager for the Office of Diversity and Inclusion for UAB's School of Medicine, Blythe-Tjia demonstrates UAB's dedication to a curriculum of excellence. She emphasized UAB looks at potential candidates wholistically in an effort to produce the best equipped physicians of tomorrow. UAB strives to integrate diversity in every way by looking for students that have overcome adversity, and also contribute and serve the communities around them. This year, Oakwood Alumnus Austin Hannah visited us and shared his great experience as a second year medical student. Jenna Blythe-Tjia encouraged OU students to apply to the summer research programs at UAB School of Medicine and also explore the UAB Postbac program. She seeks to mentor to all on the path to Medicine and encourages anyone interested to reach out directly to her.



Jenna Blythe-Tjia from UAB

Financial Literacy, with Dr. Deleise Wilson

Written by Courtney Brown, Photographer: France Archange



Dr. Wilson at OBMA

Dr. Wilson is the Director of Nursing at Kettering College and the mother of our very own OBMA president. A firm believer in good money management, she spoke on the importance of having a budget and provided resources for obtaining scholarships. Having an updated monthly budget sheet helps us keep track of the money we spend and acquire as well as gradually develops in us a habit of being aware of our finances for now and the future. Dr. Wilson advised us to keep track of the money we take out for loans if any, the cost of tuition at our institution, and our course and fee statements. Observing negative contrasts, if any, between the money we spend and the money we earn or receive, fosters in us a desire to seek financial help and/or be intentional about our finances. Dr. Wilson emphasized the importance of tapping into every resource that reduces debt after college. She introduced us to the Health Resource and Service Administration (HRSA). This organization provides opportunities to serve in a healthcare career in exchange for aid in paying back student loans. The locations of work are in almost every state in the country and the job positions vary! They have program officers that are dedicated in helping students obtain as much money possible to reduce debt. Dr. Wilson also reminded OBMA that aside from scholarships, grants, and opportunities like HRSA, forming a relationship with the professionals we encounter during our summer research experiences and inquiring



Student working on budget

for financial assistance even after having received a stipend is another important resource of funds during our college careers. Even beyond our college experience, financial literacy can and must be practiced in the workplace. Dr. Wilson urged us to inquire details on job opportunities that are offered to us such as loan forgiveness and aid policies. "Negotiate your value", she said. The habits we gradually and intentionally solidify now will pave pathways in the future that will allow healthy lifestyles instead of anxious lifestyles. Let's begin now!

Importance of Service: OBMA Volunteer Fair

Written by Amy Dauphin and France Archange

"As future health professionals, the very essence of our practice will be service. In it, we practice empathy, relay healing, aid the needy, and carry out God's will. We nurture those attributes through service to others and make it a unique mission for us upon this earth. Because of this calling, OBMA has service opportunities. Four groups came to present at OBMA on the importance of service: Felicia Outh represented REACH, a group that has a large impact on the community: not only do they go to local schools and tutor kids, but they go wherever else they are needed to provide aid and support. Claudis Brown and Na'Veh Matthews presented Claudis' ministry: HEROS. This stands for His Everlasting Righteousness, Our Service. Claudis' aim is to bring love, warmth, smiles, and the Spirit of Christ with him wherever he goes. He and his crew have been involved with interstate efforts at spreading the good cheer of the Lord to needy communities. On behalf of the Salvation Army, Captain Chris shared with us the many ministries offered by the Salvation Army church. He encouraged Oakwood students to get involved in any way possible: from helping with Sunday school and volunteering to sort donations, to swinging the red kettle at Christmas time. The SWAT Team is a group of vigilant students, led by Tyjeeha Baldwin and Tiffani Jackson, that are always ready and willing to pray for others around campus. During AY these students fervently pray with and for the other students in the congregation in a collective effort to bring all worries and struggles to the foot of Christ. They extend this beyond AY as well in visiting the dorms with snacks and praying with their peers door-to-door as invited. There are many other local service opportunities, which are perennial even though they were not presented at the fair, these are; Manna House, SouthernCare New Beacon- Michelle, Hospice- Jakita, and Downtown Rescue Mission.



OBMA Officers Lydia and DeAndre

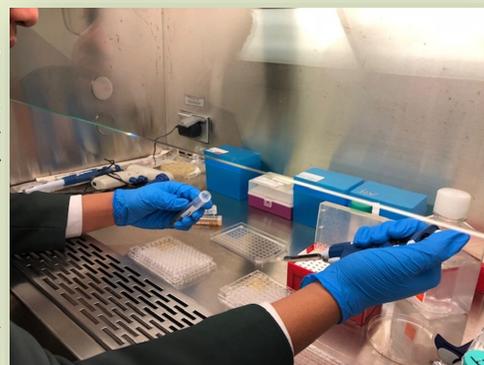
STUDENT RESEARCH HIGHLIGHTS

Faculty and Student Research

Biomedical Research is a Central Component of STEM Education at Oakwood University

Written by Dr. Elaine Vanterpool

Oakwood University Department of Biological Sciences (and other STEM departments) seeks to enrich the academic experience of students through research. This initiative is to help our students to 1) be competitive candidates for professional and graduate schools and 2) help develop their critical-thinking and scientific reasoning skills. Students are mentored and trained by our research scientists/faculty to meet this goal. In addition to research during the school year, our faculty assist students in applying to summer research programs at other research partner institutions. Some courses and laboratories focus on research and integrate research as a part of the curriculum. Our students who do research in our departments have a very high matriculation rate into graduate and professional schools.



Biomedical research projects conducted at Oakwood University are under the direction of faculty in the Biological Sciences and Chemistry departments. Some of the research projects conducted by faculty and students are:

Nanotechnology Research: In the chemistry department, Dr. Kenneth LaiHing utilizes nanotechnology in several of his studies entitled “Preparation of Nanoparticles for Drug Delivery and use with antibiotics”, “Analyzing synergistic interactions between silver nanoparticles and antibiotics: Implications for microbial growth” and Preparation and Characterization of Nanofibers and Composite Nanofibers”. Some studies are done in collaboration with Dr. Elaine Vanterpool in Biology.

Nanotechnology in microbial pathogenesis: Dr. Elaine Vanterpool has ongoing research on microbial pathogenesis, particularly evaluating the role of nanoparticles on modulating bacterial virulence. Other research projects include nanoparticle impact on cell evasion, biofilm formation, and protection of host immune factors. Dr. Vanterpool’s lab also focuses on dental research investigating mechanisms of virulence regulation in several periodontal/dental pathogens. Some of her research is done in collaboration with Dr. Kenneth LaiHing from the Chemistry department.

Cancer Therapeutics Research: There are several scientists in biology department who are engaged in cancer research. Drs. Elaine Vanterpool and Juliet Bailey-Penrod investigate therapeutics such as natural plant extracts, against cancer, particularly through nanoparticles. The goal is to target and reduce cell viability in breast, pancreatic, prostate and cervical cancer cells while not targeting normal human cells.

Neurophysiological Research: Drs. Melissa Richardson and Marie-Claire Boutrin, have active research projects in neurobehavioral research investigating the cognitive and behavior response to disruptions in biological rhythms, “Effects of jetlag on neurophysiological and molecular processes during different day-lengths”. This research is coupled with gene and protein expression studies, to identify the genes and gene products of tissues impacted by the disruptions.

Identification of Natural Compounds as Antimicrobial Agents: Dr. Londa Schmidt is researching antimicrobial properties of plant extracts against *Staphylococcus aureus* and superbug Methicillin-Resistant *Staphylococcus aureus* (MRSA).

Ecological Studies: Dr. Onesimus Otieno has been working with colleagues at Auburn University’s Dauphin Island Sea Lab, the USGS, and Fish and Wildlife Service to study ways to monitor and eradicate of Apple Snails in Mobile Bay, Alabama.

Innovations in a Biomedical Research-Based Curriculum: Courses in biology, including BI 204 Introduction to Research and BI 323 Undergraduate Research, allow students to identify a problem and develop a research proposal. Students then execute the research project that was proposed under the mentorship of their scientist/professor. Biology students have an opportunity to present their research at local or national research symposia. Courses like BI 241L General Microbiology Laboratory, incorporate innovative microbial research into the curriculum (sponsored by private grant funding of the instructor, Dr. Elaine Vanterpool). In November, all laboratory research students present their findings at the Microbial Pathogenesis Research Symposium on our campus. In the past, students have enjoyed integrating biomedical research into the laboratory curriculum. This has enhanced their learning experience and stimulated improved critical-thinking and scientific reasoning skills. It has also helped them be competitive candidates for other research programs and professional or graduate school.

Student research has been supported through federal funds (NSF HBCU-UP and ALSAMP, NIH IMARI,) and private (UNCF) funding. Some STEM students also volunteer to do research. OU STEM students present their findings at local, national and international conferences including American Chemical Society, ABRMCS, American Society of Microbiology, International Association of Dental Research, among others. In addition to off-campus events, students and faculty present their finding at the STEM and Biomedical Research Symposium held on Oakwood University campus.



Students engaged in research

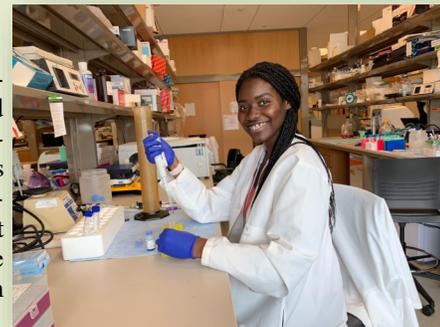
STUDENT RESEARCH HIGHLIGHTS

Scientific Research: OU Biology and other STEM majors are actively engaged in scientific research at Oakwood University during the academic year and at other institutions during the summer. Institutions where our students do research in the summers include Loma Linda University, Mayo Clinic, Duke University, Virginia Tech, John Hopkins, Cleveland Clinic, University of California in San Francisco, among others. Many of our students have presented their findings at local and national conferences and have placed in the top category awards. Conferences our students participate include ABRCMS, American Chemical Society (ACS), (Emerging Research Network) ERN, Louis Stokes Alliance for Minority Participation (LSAMP), American Southeastern Biologists (ASB), International Association for Biomedical Research (IADR) and many more.

Evee' Blake, an OU Biology Student, does diabetes research at University of Pennsylvania

Written by Evee' Blake

Last summer, I had the privilege to do research at The University of Pennsylvania as part of the Undergraduate Student Scholars Program. I worked in a lab that studies the beta cell extensively and how its dysfunction is a major contributor to the pathogenesis of Type 2 Diabetes. My project focused on a human MODY missense mutation found in the C-terminus of PDX1. This mutation has been found in MODY patients but mechanistically, has not been explored. I discovered that the mutation was able to attenuate protein-protein interaction between PDX1 and SPOP, a key interaction that plays a role in beta cell function. Not only did I research in the lab, I had the opportunity to explore the beautiful city of Philadelphia! This was my first time participating in a summer research program and it was an amazing experience that I'll never forget!



Lydia Tesfaye Participates in the University of Michigan Institute for Clinical and Health Research Program.

Written by Lydia Tesfaye

Last summer, I had the privilege of participating in the University of Michigan Institute for Clinical and Health Research (MICHHR) Summer Immersion Program. This 10-week program allowed 20 students to participate in a research project within their desired discipline and create a poster to present at an end-of-the-summer symposium. My summer cohort included disciplines such as kinesiology, public health, pharmacy, neurology, and medicine. I was assigned to the Holinstat lab, whose focus was cardiovascular pharmacology. My primary focus was the study of platelets and their role in cardiovascular disease. Along with conducting daily research, I had the opportunity to attend a variety of sessions with topics that were research focused, such as writing an IRB, obtaining informed consent, and writing an NIH proposal.



Another unique feature of this program was the focus on public health and health equity. While learning how to conduct proper research, we studied health from another perspective. It was important to understand how our actions as researchers affect those who will experience the results of our findings. Furthering my knowledge on topics such as health equity and research ethics broadened my scope as a future medical scientist. It motivated me to be intentional in all of my work and that personal connection is just as important as the study behind it.

This program provided me with invaluable experiences that helped to strengthen my career focus. I researched in a translational lab, combining intensive study and direct clinical application. This combination of clinical, research, and public health information went far beyond my expectations. I am so grateful I had this amazing opportunity and I hope future MICHHR scholars also benefit from the experience.

Biology Student Does Cardiovascular Research at University of North Carolina, Chapel Hill

Written by Morgan Narain

At the beginning of my sophomore year here at Oakwood, I joined the research program IMARI, which is a competitive institutional program focused on introducing minorities into research institutions. This program allowed us to choose a large research institution to do summer research. My first summer was spent at the University of North Carolina, Chapel Hill. I worked in Dr. Edward Moeira-Bahnsen's redox cardiovascular biology lab where I evaluated cinnamic aldehyde as a therapeutic for neointimal hyperplasia in diabetic and non-diabetic rat vascular smooth muscle cells. When I first arrived in Dr. Bahnsen's lab, I was very intimidated because I didn't feel prepared to work in such an intensive and high-tech lab environment. Thanks to my prior work at Oakwood with Dr. Vanterpool, I was more than prepared and had a very successful summer. At the end of the summer, even though my project did not work out the way we intended, I was invited back for a second summer in the same lab. When I returned there this past summer, my PI immediately piled a lot of responsibilities and though it was a very stressful summer, I am extremely grateful that I was not only invited back but I was also trusted with even greater responsibility than before. This past summer was a lot more difficult than the first since things did not work very smoothly and I spent nearly the whole month of June troubleshooting problems in the lab. By the end of the summer, I not only fixed these problems, but I also perfected a protocol that my research team had been attempting to finish since 2016. I am extremely grateful for the experiences that I have received and once I complete my bachelor's at Oakwood, I hope to join UNC-Chapel Hill as a Ph.D. candidate in the fall of 2020.



RESEARCH & LABORATORY HIGHLIGHTS

Title III SAFRA-funding helps to Increase Academic Skills and Graduate School Competitiveness Among Biology Students.

Written by Dr. Elaine Vanterpool

Support from Title III funding provided opportunities to improve out biological-based laboratories and research courses. Through equipment, models, and state-of-the art devices, laboratories have been improved. In research, students have published over 36 abstracts (with poster presentations) and manuscripts (pending publication). We sent students and faculty to research conferences including the American Chemical Society, American Society for Microbiology, Emerging Researchers Network Conference (among others). Through title III funding, we have integrated research projects in some of the lab courses where students present their research findings in the Microbial Pathogenesis research symposium. In addition, students now agree that integrating research into the laboratory provided them with a more enriched academic experience that helped them improve their critical-thinking and scientific reasoning skills. It has allowed them to apply knowledge that was learned. Overall, students felt that these activities made them more competitive for graduate and professional school. Labs have been improved by replacing old and broken models and equipment, provided better infrastructure conducive for lab and research courses. This has allowed biology faculty to build and expanded their curriculum and research programs. Between spring 2017 and Spring 2019, forty-eight (of 100) biology students have been admitted to over 111 schools - some with full scholarships. Since these are self-reported sources, we expect the numbers to be slightly higher. We are proud of our students and are grateful for the support of title III to make this possible.



Oakwood University STEM Departments Hosts the 2019 STEM and Biomedical Research Symposium

Written by Dr. Elaine Vanterpool

On April 16, 2019, HBCU-UP held the STEM and Biomedical Research Symposium. This event was the highlight of all the research done by the HBCU-UP and STEM students during the year. The keynote speaker, Dr. Akunna Iheanacho (OU Biology Alumna) spoke on drug development. The symposium was held in the McKee Business and Technology Building where 112 students, 44 faculty and 9 staff/guest attended the event. Fifty-one STEM students presented (thirty which were Biology students). Students were judged based on their presentations by research scientists and winners were announced. The program was planned and coordinated by Dr. Elaine Vanterpool, Research Coordinator of HBCU-UP and Chair of the Faculty Research Symposium. The Principal Investigator and Manager of HBCU-UP is Dr. Kenneth LaiHing, Dean of School of Arts and Sciences. The goals/objectives of the HBCU-UP research program are to: 1) enrich academic experience, 2) increase interest in research, which may lead to matriculation into graduate programs, and 3) increase the competitiveness for students who plan to apply for graduate school.



Biology and other STEM student presenting their research from Oakwood University

Mayo Clinic UPS Program Accepts Oakwood University Biology Pre-Medical Students

Written by Dr. Elaine Vanterpool

Mayo Clinic Undergraduate Plummer Scholars (UPS) Program

In August, Mayo Clinic reached out to the head of the Biology department to nominate OU students to apply to the Mayo Clinic UPS program. The mission of the program is expose, excite, and engage underrepresented undergraduate students with high potential of pursuing a career in medicine.

Eight biology/biomedical sciences students were selected. These were;

Jayde Frederick	Courtney Garnett
Chelsea Thomas	Darbentz Omland
Peace Ayoade	Roddley Point-Du Jour
Kayla McEady	Danielle Honoré



Details on the program (taken from UAB UPS):

The distance learning program lasted September 2019 – May 2020. Webinars are conducted via Blackboard, our Learning Management System. Mentorship is a part of the program and is conducted via e-mail, phone, video chat, etc.

The Undergraduate Plummer Scholars Plus (UPS+ Program), track is for outstanding premedical college sophomores with a GPA of 3.2 and above. In addition to the webinars, the UPS+ students participate in a near-peer mentorships program with Mayo Clinic Alix School of Medicine medical students from Minnesota and Arizona. UPS+ students also have the opportunity to apply for admission to an intensive week-long summer program hosted at Mayo Clinic in Phoenix, AZ. The summer program is centered on clinical shadowing with Mayo Clinic faculty and physicians, MCAT test preparation, professional and academic development, and workshops to guide students in the medical admissions process and beyond. No separate application is required.

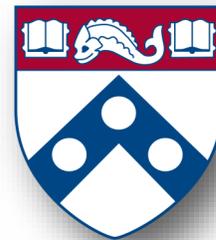
PARTNERSHIPS & COLLABORATIONS

Oakwood University through the Department of Biological Sciences has established memorandum of understanding with several universities to enhance opportunities for their graduates. Below are some of the institutions with whom the Department of Biological Sciences has such MOUs.

University of Pennsylvania (Perelman Medical School)

Written by Dr. Juliet Bailey-Penrod

The MOU with UPenn focuses on identifying promising sophomore students from Oakwood University who are interviewed, selected and mentored by UPenn's office of Diversity. Selected students must maintain a competitive GPA, and spend two summers in the UPenn summer program (paid internship). The student may choose to take the MCAT examination, but is not required to do so. On completion of the 2-year program, successful students will be invited to apply to the UPenn medical program.



Perelman
School of Medicine
UNIVERSITY of PENNSYLVANIA



University of Connecticut Medical School

Written by Dr. Juliet Bailey-Penrod

The affiliation allows provisional guarantees of acceptance to the School of Medicine during the baccalaureate program subject to specified conditions which include maintenance of a 3.6 GPA, clinical research, completion of prerequisite courses, a competitive MCAT score and strong recommendations from the faculty.

Ross University School Medicine

Written by Dr. Juliet Bailey-Penrod

In this articulation Ross University guarantees admission into the MD program for interested OU post baccalaureate students who have completed RUSM application, fulfilled RUSM prerequisite courses, completed Bachelor degree or higher, completed MCAT with a score of at least 492, have an undergraduate overall GPA above 3.2, or a prerequisite GPA above 3.0. Admission is subsequent to successful interview with RUSM, and acceptable references indicating an exemplary record of conduct.



ROSS UNIVERSITY
SCHOOL OF MEDICINE

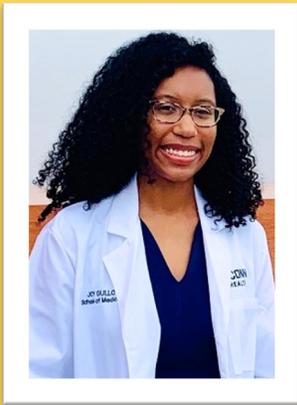


University of Alabama at Birmingham

Written by Dr. Elaine Vanterpool

OU and UAB are in the process of establishing a MOU. In this agreement, UAB will have an early acceptance program for select students who have completed their sophomore year at OU with a 3.5 GPA (overall and science). Nominated students can apply and have an interview. Provisional acceptance is given until students have 1) taken the MCAT and achieved a score of 495 or above, 2) maintain the GPA requirements, 3) complete all necessary documents, and 4) complete their bachelors degree.

ALUMNI HIGHLIGHTS (GRADUATE WHITE COAT)



Ms. Joy Gullo
University of Connecticut
School of Medicine



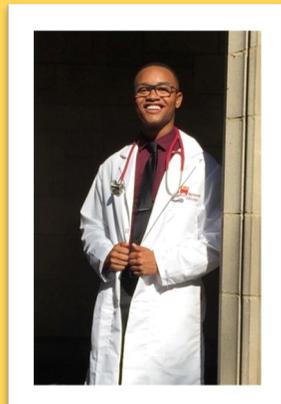
Mr. Jaerae Dell
University of Michigan
School of Dentistry



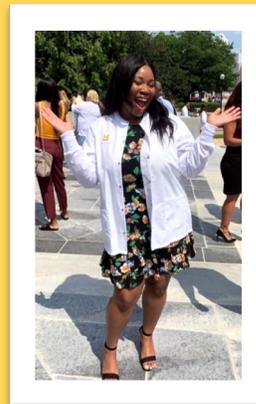
Ms. Janelle Boyce
University at Birmingham
School of Dentistry



Mr. Nathan Davis
Howard University
School of Medicine



Mr. Conrad Fletcher
University of Chicago
Pritzker School of Medicine



Ms. Brea Fleming
University of Michigan
School of Dentistry



Ms. Breeann Lansiquot
Meharry Medical College



Mr. Gregory Darville
Emory University
School of Medicine



Ms. Decelia Browne
University of Connecticut
School of Medicine

Schools where our graduates have been admitted

Adelphi University
Alabama A & M University
Alabama College of Osteopathic Medicine
American University of Antigua
American University of the Caribbean in St. Maarten
American University of Washington DC
Andrews University
Barry University
Bastyr University
Baylor College of Medicine
Boston University
California State at North Ridge
Canadian College of Naturopathic Medicine
Caribbean Medical University
Clark Atlanta University
Cleveland Clinic (Case Western Reserve University)
Cleveland Clinic Lerner College of Medicine
Columbia University
Drexel University
Drexel University - Hahnemann University Hospital
East Tennessee /John H. Quillen School of Medicine
East Tennessee State Univ.
Emory University
Fisk University
Florida Institute of Technology
Florida International University
George Washington University
Georgia Health Sciences University
Harvard School of Law
Harvard University +
Heritage College of Osteopathic
Howard University
Ichan School of Medicine at Mount Sinai
Indiana University
Johns Hopkins University
Kentucky University
Laney Graduate School at Emory University
Loma Linda University - Dental School
Loma Linda University - Medical School
Loma Linda University - Pharmacy School
Loma Linda University Graduate School
Mayo Clinic Medical School
McWhorter School of Pharmacy
Medical College of Georgia
Medical College of Wisconsin
Medical School in Saba, Netherlands
Medical University of South Carolina
Meharry Medical College - Medical School
Meharry School of Dentistry
Mercer University - Medical School
Mercer University College of Pharmacy
Michigan State University
Michigan State University/Osteopathic School of Medicine
Midwestern University Illinois
Morehouse College of Medicine
New Jersey School of Osteopathic Medicine
New York University

Congrats!

We are so proud of you all!!

ALUMNI HIGHLIGHTS

Schools where our graduates have been admitted

Ohio State University
Ohio University Heritage College of Osteopathic Medicine
Pace University
Penn State College of Medicine
Pennsylvania College of Optometry
Philadelphia College of Osteopathic Medicine
Ross University/Dominica
Saint James School of Medicine Anguilla
Samford University
South Central Florida University
St. George's University - Medical School
State Univ. of NY Downstate
Stony Brook University
SUNY Downstate Medical Center Medical School
Temple University
Texas A&M College of Dentistry at Baylor
Texas A&M University/Epidemiology
Texas A&M/Baylor College of Dentistry
Tuskegee University
Uniformed Services University
University of Maryland
Univ. of South Alabama
Univ. of Tenn. Memphis
University of Alabama at Birmingham
University of Alabama Huntsville
University of California San Diego
University of California San Francisco
University of Cincinnati
University of Columbia NY
University of Connecticut School of Medicine
University of Florida
University of Illinois at Chicago
University of Illinois at Chicago/Pathology
University of Louisville
University of Maryland
University of Massachusetts
University of Miami Miller
University of Michigan Dental School
University of Michigan Kalamazoo
University of Mississippi Medical Center
University of NC at Chapel Hill
University of North Carolina
University of North Texas
University of Pennsylvania
University of Pittsburgh
University of South Alabama
University of South Florida
University of St. Eustatius
University of Tennessee Memphis
University of Texas Branch at Houston
University of Texas Galveston
University of Texas San Antonio
University of Texas Southwestern
University of West Indies Jamaica
Vanderbilt University
Virginia Tech
Washington University in St. Louis
Wayne State University - Boonshoft School of Medicine
Wayne State University - Graduate School
Western Michigan University
Yale University

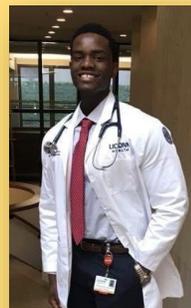
GRADUATE HIGHLIGHTS: UCONN WHITE COAT CEREMONY



Written by **Safawo Gullo, D.V.M., Ph.D., Professor of Biological Sciences**

On August 23, 2019, I had the privilege of attending a White Coat Ceremony at the University of Connecticut (UConn) School of Medicine and School of Dental Medicine for the Class of 2023. Oakwood University was represented by **Joy Gullo** and **DeCelia Browne** in the **Medical and Dental programs**, respectively. Incidentally, two Oakwood University graduates were selected from among hundreds of medical and dental students to welcome the new students. **Darnell Robin** (biology graduate), who is a 4th year medical student was one of the four presenters of the White Coat to the incoming medical students, while **Grethel Millington** (biology graduate), a 4th year dental student was the only current UConn dental student chosen to welcome the incoming dental students. The selection of these two Oakwood graduates was a testimony of the quality of their character and exceptional academic performance.

There are currently ten Oakwood University alumni (biology graduates), in the Medical and Dental Schools at the University of Connecticut. All have full Scholarships! These are **DeCelia Browne** (Dental), **Olivia Campbell** (Medical), **Chris-Ann Foster** (Medical), **Joy Gullo** (Medical), **Lemuel Hackshaw** (Medical), **Jonathan Harrell** (Medical), **Matthew Lewin** (Medical), **Grethel Millington** (Dental), **Ashleigh Moten** (Medical), and **Darnell Robin** (Medical). They were awarded full Scholarships because of their high GPAs and MCAT scores through an **articulation agreement** between the Oakwood University and the University of Connecticut. The only commitment required of these students is to serve for one year in the underserved. We are super proud of our biology department graduates!!



Lemuel Hackshaw



Jonathan Harrell



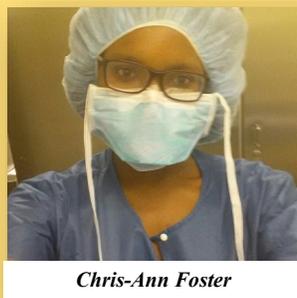
Matthew Lewin



Olivia Campbell



Darnell Robin



Chris-Ann Foster



Grethel Millington

Biology Department Hosts Panel Workshop for OU Students on How to Leverage their Science Degree.

Written by **Elaine Vanterpool, PhD**

On April 19, 2019, the Department of Biological Sciences hosted a workshop and panel discussion with Oakwood Science Alumnus on how to “Leverage Your Science Degree”. Panelist consisted of entrepreneur dental hygienist, medical laboratory director, graduate professor, Psychiatrist, Quality Control Manager, public health professional, director of research and development in industry (among others). The master of ceremonies was Ms. Victoria Joiner. The keynote address was provided by Dr. L. Rudy Broomes, one of the first two Oakwood University Pre-med graduates to go directly to Loma Linda University. Dr. Broomes was a faculty member at Meharry Medical College and Assistant Commissioner for Drug and Alcohol Services for the state of Tennessee. The event was well attended by Oakwood University science students, faculty and administrators. The event was sponsored by Loma Linda University and supported by Dr. Hansel Fletcher, Assistant Dean of Graduate Student Affairs, Vice Chair of Basic Sciences Division of Microbiology, and Professor of Basic Sciences (School of Medicine) and Professor of Periodontics (School of Dentistry) at LLU.



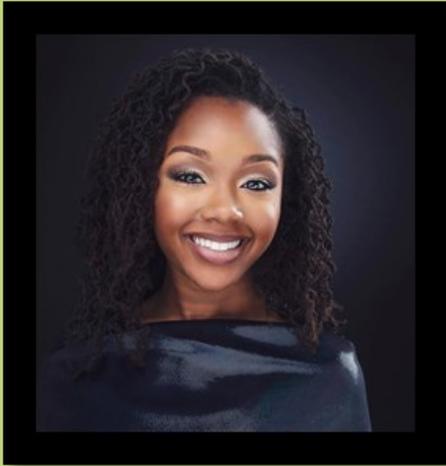
Dr. Broomes



Participants and attendees at the “Leveraging your Science Degree” workshop

MR. & MISS OAKWOOD-BIOLOGY/BIOMED MAJORS

Meet Miss Oakwood: Ms. Bria Gamble— Future Career: Pediatric Psychiatrist



Bria Imani Gamble. Bria's name is a combination of her parents' names, Brandon and Kia, and her middle name 'Imani' is Swahili for 'faith'. It is with this faith that she lives her life fully, and as she pursues her passions daily. Growing up in Southern California, Bria, a rising senior biology major, grew into the young woman she is today through her involvement with church as a pathfinder in the Teen Leadership Training program, in sports, orchestra, and most importantly, through the influences of her close-knit family. In addition to these experiences, becoming the first African-American president of her senior class taught her first-hand the impact representation of black excellence can have on the members of a community.

Bria is task-driven, yet remains personable. She has a passion for serving her community and has exhibited this as an active board member of the Oakwood Biomedical Sciences Association, and as a sophomore senator. Through her achievements, being on the Dean's List every semester; her recognition as Freshman Biology Major of the Year and senator of the year for 2017, Bria has shown grit, diligence, intelligence, and positive regard for others. From working with high schoolers interested in pre-health at Loma Linda University, serving as a peer mentor to freshmen, working as a lab assistant, tutoring in math, and also

as an Oakwood University Navigator, Bria has continually prioritized mentorship during her three years at Oakwood University. These experiences have led to her current mentorship work at Highlands Elementary School here in Huntsville, AL, where she mentors students facing many disparities and challenges. It has deepened her passion to one day serve her community as a physician. Her goal is to help instill a health-seeking behavior in minority patients and to improve their trust in medical professionals.

Because of her various experiences, Bria has developed a platform called FOCUS. FOCUS - Free-Thinking, Owning Your Struggles, Creating Your Narrative, Understanding Your Purpose, and Seeking Counsel. She wants to help the student body cultivate their abilities and resources, to shift their focus from passivity to proactivity; take responsibility for who they are, and what they choose to do with their story. She plans to implement this platform through activities such as a mentoring luncheon/programs with professionals in the community, motivational seminars focused on topics such as facing the fear of the unknown and monetizing your gifts. She also wants to provide a space of openness, growth, accountability, and encouragement for the student body to speak and connect. She hopes to not only bring these practical experiences to the students on campus, but also to the grade school students in the community. With God on her side, Bria seeks to bring hope to the men and women of Oakwood University during this major transition in life.



Meet Mr. Oakwood: Mr. Joseph Smittick—Future Career: Transplant Surgeon



Born in Denver, Colorado, Joseph has always had a "Mile High" state of mind. Joseph's desire to achieve academic excellence propelled him to graduate as the first African American valedictorian and class president of his 100-year-old high school. Since coming to Oakwood, this pursuit has continued. He has been published twice, in addition to being inducted into Alpha Chi, a nationally recognized society of individuals ranking in the top 10% of their class. During the summer of 2018, he was blessed to be selected by the National Institute of Health for a medical research internship at Harvard Medical School. Along with his academic pursuits, Joseph has been actively involved in many activities on campus from singing in Voices of Triumph, to performing with M'kononia and Ignite drama ministries, to mentoring kids at Highlands Elementary with REACH. For the past two years he has had the pleasure of guiding freshmen men through their transition into college life as an RA. After graduating, he plans to become a surgeon. As a physician, he will work to advocate for individuals in underserved communities and help improve health literacy.

As Mr. Oakwood, his platform (Let's Eat!) is a metaphor which encourages Oakwood students to embrace their "hunger" for success, so that they can make the best use of the opportunities that come their way and reap the rewards for themselves and their community. To facilitate this, Joseph plans to organize professional development programs that will teach students soft skills that will be priceless assets to them during their time at Oakwood and in their future careers. He also plans to provide opportunities for Oakwood students to empower young students through mentorship.

OU BIOLOGY & COMMUNITY HIGHLIGHTS

Battle of the Classes

Written by Dr. Melissa Richardson

On September 22, 2019, the Biology department gathered to participate in the 3rd annual Battle of the Classes. Freshman, Sophomore, Junior, and Senior Biology and Biomedical Science majors went head to head in fun competition in a variety of games such as: three-legged race, obstacle course, water balloon toss, obstacle course, egg and spoon race, Taboo, and a variety of table games. Each game was scored and the Junior team was victorious over the second placed Sophomores. Following the games, all participants enjoyed spirited skits performed by the Sophomores and Seniors. The faculty also joined in the fun this year by entertaining students with impersonations of notable figures in society. We ended with a lunch spread prepared for all by the biology faculty. Until next year, we will cherish the memories!



Previous winners: Freshman 2018, Seniors 2017

Biology Battle of the Classes

Biology Faculty was an Invited Facilitator at the University of Eastern Africa Baraton

Written by Dr. Onesimus Otieno

Dr. Onesimus Otieno was an invited facilitator in a conference held at the University of Eastern Africa, Baraton (UEAB). This conference was jointly organized by the International Outreach Health Educators (IOHE), the Nursing Council of Kenya (NCK), and UEAB. Over the years, IOHE has organized conferences to reach out to healthcare professionals in the Caribbean and Africa. Dr. Kathleen Farrell, the team leader, is a Nursing Educator based in New York. She is assisted by Dr. Lydia Andrews, who is also a Nursing Educator from the OU Nursing Department. The team has convened several conferences and organized teams to Africa and the Caribbean over the years. The team of 11, came from different parts of the US and included Dr. Kitson Francis and his wife Marlow Francis (Huntsville, AL), Dr. Debbie McNair and Veronica Irish-Stanford of San Antonio, TX; Sylvia Modeste and Pamela Downes-Covington of New York; Dr. Kathy-Ann Hernandez of Philadelphia, PA.; Dr. Lydia Andrews and her husband Newton Andrews.

Dr. Otieno demonstrated Critical Thinking tools for Understanding and managing Childhood obesity and diabetes. He was delighted to accompany the team to his alma matter. The team carried donations for the surgical unit at the UEAB Hospital, a local children's home. They also had a chance to visit the Adventist University of Africa besides a safari to see wildlife.



Collaboration between OU BI 241 General Microbiology Students and Instructor Helps to Advance OAA STEM Curriculum through Research

Written by Dr. Elaine Vanterpool

During the 2018-2019 academic school year, Oakwood University BI 241 General Microbiology students partnered with Oakwood Adventist Academy middle and high school students and teachers in preparing students for the Oakwood Adventist Academy Science and Engineering Fair (OAASEF). This collaboration is an ongoing service-learning collaboration. The instructor, Dr. Vanterpool, has worked with the OAASEF Coordinator, Ms. Nanetta Pressley, and former administrators to help build OAASEF and to integrate research into the classroom STEM curriculum. The purpose of this curriculum innovation is to increase interest students in a possible future STEM careers. Microbiology student, Donovan Jackson (OU Biology major) worked with the science fair coordinator at OAA with setting up and breaking down of the science fair. He also assisted students with developing their ideas using the scientific method and assist with their presentation board set up. Donovan also gave feedback to students regarding how they could improve their projects. There were other service-learning students who worked with the science teachers from 5th-11th grade to provide assistance with developing science projects. Winners of OAASEF participated in the North Alabama Science and Engineering Fair (NARSEF). NARSEF winners advanced to participate in the Alabama Science and Engineering Fair (ASEF). Thanks to the support of General Microbiology service-learning students, course instructor Dr. Elaine Vanterpool and the science teachers at OAA, eleven of the OAA students became finalist in NARSEF and advanced to ASEF. All other students received honorable mention awards and received other special awards. One OAA student won Junior Grand Prize (highest prize) at NARSEF. All OAA students who advanced to ASEF placed in 1st, 2nd or 3rd in their category. An OAA sophomore also received a 50% off tuition for the University of Alabama at Huntsville (UAH) based on the merit of the studies that were done. The collaboration will continue to between OAA and OU service-learning students to better prepare the OAA students for the STEM careers and increase the interest in STEM among minority students. In addition, OU students have obtained better critical thinking skills and development of a sense of service to the community.



OAA student doing an experiment



SERVICE-LEARNING & COMMUNITY SERVICE



OU General Microbiology classes presenting for OAA students

ENRICHING BIOLOGY EDUCATION THROUGH SERVICE-LEARNING

Selected courses in the Department of Biological Sciences apply scientific knowledge learned in the classroom to help develop and enhance the STEM curriculum in underrepresented minority preK-12 students throughout the Huntsville secondary schools. Activities involve tutoring, mentoring, instruction, lab demonstrations, and creating new innovative teaching methods. Other goals include promoting and integrating scientific literacy and reasoning skills into the preK-12 science curricula. At the end of the service-learning process, both Oakwood University Biology students, as well as preK-12 minority students, will have increased knowledge of the scientific concepts learned in the classroom.

Biology Student Does 2+ Years of Service-Learning with OAA: A Perspective

Written by Chidinma Wilson

I am an aspiring physician studying Spanish and biology. I was introduced to service learning in Dr. Elaine Vanterpool's General Microbiology class. As an integrated part of the curriculum, students are paired with teachers at Oakwood Adventist Academy to assist with STEM (Science, Technology, Engineering, and Mathematics) courses. The year following my study abroad experience, I was asked to tutor a sixth-grade girl from the Dominican Republic. She spoke little English, so topics like math and life science were difficult for her to grasp. I visited the classroom once a week to review previous material, teach upcoming concepts, and provide social and emotional support. She was incredibly bright; once the language barrier was dissolved, she quickly mastered the material and excelled in her classes. Additionally, I gave lectures on biology and earth science. After a PowerPoint presentation, we would play interactive games to address either the difficult or intriguing concepts. I conducted science experiments throughout the school year with the students. They ranged from underwater volcanoes to osmosis egg demonstrations. Through these experiments, we explored the scientific method in a fun, memorable way that piqued their interest in STEM subjects. Service learning helped augment my undergraduate academic and professional experience. Teaching the classes reinforced my knowledge of the basic concepts of biology and chemistry. I needed to have a deep understanding of the material to convey the information to young students. Certain complex topics like cellular respiration had to be broken down in a manner that was palatable but also scientifically sound. I quickly found that typical college terminology and teaching styles did not resonate with this age group. They learned best when the material was put into their language with metaphors and relevant correlations. This experience also gave refreshing insight that enhanced my work as a teaching assistant. For anatomy and physiology, my colleague and I led the lab review sessions. After service learning, I thought of new ways to help students connect with the topics and retain key terms for examinations. For instance, we utilized educational quiz websites like Kahoot and crafted models of functioning organs from household items. The students showed greater interest in the subject and became more engaged in the lectures. Although service learning has been immediately beneficial to both myself and the students, I believe that it will have lasting impact on my career as a physician.

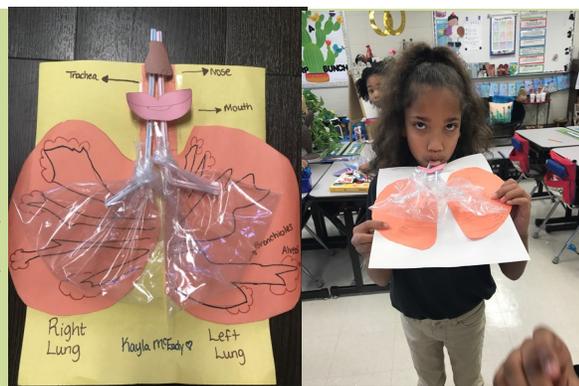


Effective communication and strong interpersonal skills are essential aspects of doctoring. A healthy patient-physician relationship is key to providing compassionate care, fostering shared decision making, and favorable patient outcomes. Over the years, service learning has been exercising the relational muscles necessary for creating such a connection. For instance, I was able to gain experience with communicating scientific information to an audience with a different level of understanding. Doctors must know how to compassionately explain medical diagnoses without confusing jargon. In that moment, patients may be scared or apprehensive about the next steps in their health plan. The physician plays a critical role in relieving those fears by carefully answering questions or clarifying misconceptions. I believe that working with the elementary students showed me how to be patient and thorough in explaining important information. All in all, service learning was an opportunity to give back by building students' interest in STEM subjects that has shaped me as an undergraduate academic and provided me with the skill set to become a compassionate, reliable physician.

General Microbiology Students Utilizes Hands-On, Active Learning with OAA Students

Written by Dr. Elaine Vanterpool

OU Service-learning General Microbiology students have been placed with Oakwood Adventist Academy teachers to help innovate the science curriculum. Two students, Kayla McEady and Victoria Hardy were assigned to the 2nd/3rd grade teacher, Ms. Lynne Middleton. They presented the students opportunities for active-learning while developing innovative methods for assessment. Service-learning students developed science lesson plans that aligned with the schools science curriculum. Example of topics taught included cellular respiration, aerobic and anaerobic respiration, diseases and the negative impact of smoking. The activity associated with this one particular lesson was building the respiratory system that could breath in and out (see pictures). OU students also held a workshop, in conjunction with the 5th grade class, on the digestive system and how it works. The OU students also innovated other sciences topics in the area of geology, earth science and life sciences.



OAA student learns about the lungs and respiration