

Cobb Research Lab News

A quarterly newsletter of the W. Montague Cobb Research Laboratory, Howard University

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SPRING 2020



Congratulations to Dr. Kevin E. Scriber, newly minted Ph.D. in biology!

Bravo to Kevin E. Scriber who completed all of his requirements for the doctoral degree in biology with the submission of his dissertation on apple snails.

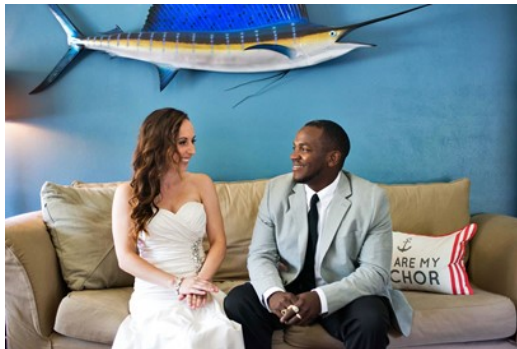
This invasive species threatens natural fauna worldwide and

Kevin's research makes a significant contribution to understanding and controlling this destructive species.

We are proud of Kevin's accomplishments and look forward to his continued contributions to the field of ecology, evolution, and invertebrate biology in the future. ****



Kevin (above) in the field and with his wife, (to the right), Dr. Naliyah Kaya.



Laboratory Research Halted but Internet-Based Computational Research Project Continue at Cobb Research Laboratory

Although we are not able to continue our laboratory-based studies, our undergraduate and graduate researchers have switched over to the internet to formidably address their research questions. Two examples are Howard University undergraduates **Nwerebuaku Mpi** and **DeAris Greenridge**. Ms. Mpi is working on a detailed depiction of the ecological diversity and indigenous ethnic variation of the Bight of Bonny region of West Africa, while Mr. Greenridge is doing a similar kind of intensive study of the Bight of Benin region of West Africa. These two geographical regions of the Gulf of Guinea were major sources of the African descendants of New World Africans. The research of these undergraduates will explore the historical demography of these regions so that precise genomic studies can be initiated among the most relevant populations. This will contribute an important piece in the accurate reconstructions of the ancestry of New World Africans. Bravo to Nwerebuaku and DeAris for their important roles in identifying the nuances of African genomic diversity and developing a model that will guide future genomic research on the continent. This research will continue over the summer as the researchers make their way across the continent! ****

In this issue —

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- ◆ Recent successes among CRL Researchers
- ◆ Loss of the Saint Helena Island skeletal samples
- ◆ Scientific Literacy Projects
- ◆ Howard goes online — development of pods to facilitate student learning in the life sciences.
- ◆ Summer research projects planned
- ◆ Dr. Mitchell and Dr. Corbett give department of biology talks



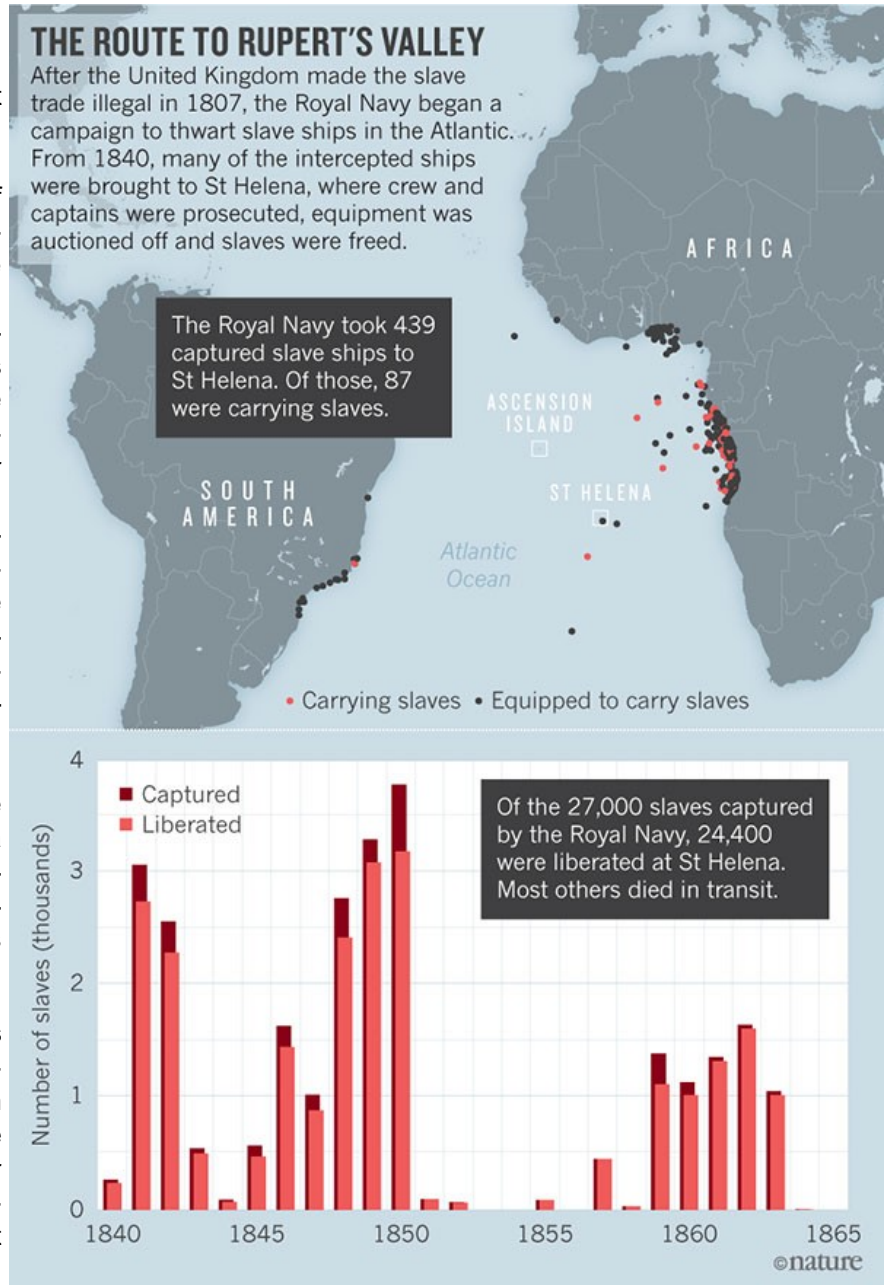
Loss of the Saint Helena Collections impedes reconstructions of African American origins in the Cobb Research Laboratory

After over seven years of efforts to secure the Saint Helena Island Rupert's Valley African Burial Ground Samples, these unique skeletal materials were surreptitiously removed over Winter Break from the W. Montague Cobb Research Laboratory. The project had been initiated prior to Dr. Jackson coming to Howard University in 2013. Through collaborations with colleagues overseas, the foundations for the project were carefully developed long before any graduate students began their dissertations on the site. However, the mandate for the removal of these precious and irreplaceable samples was from Howard University's upper administration. Their rationale for their complete removal was never provided and their current research status is unclear. Are they in the private possession of the graduate student who lobbied effectively to remove them? Were they taken to the lab of competing faculty with no expertise in skeletal biology or ancient DNA assessments? No answers have been forthcoming, and the removal of the samples violates an existing Department of Biology mandate that research samples remain in the laboratory of the initiating principal investigator when a student leaves the lab.

Howard University researchers who had hoped to work on these materials now must find other projects and the loss of these 19th century African remains will significantly derail our efforts to reconstruct the African origins of the peoples of the New World African Diaspora. The Saint Helena collections were unique in that they represented Africans who had been earmarked for enslavement in the Americas, were turned around by the British Navy's anti-slavery efforts, relocated to a refugee camp on Saint Helena Island in the South Atlantic, where they died and were buried. Their bodies were disinterred when an access road for the Airport was constructed. The population was originally studied in 2012 by archaeologists from the University of Bristol and the University of Copenhagen. Dr. Fatimah Jackson's collaboration with these colleagues allowed Howard University access to the samples. It was anticipated that the samples would "fill in" data on the status of these early African migrants before actual enslavement in the Americas. The population represented a "missing piece" of the history of Diasporic Africans and a direct link to the continental Africans of the time. The opportunity to make this link is now gone.

The issue remains of what to do when one's research has been abruptly removed. Resiliency has been a hallmark of African American culture and once again we will seek alternative ways to generate the needed data to tell our people's story. We are developing an algorithm to determine the ethnicities of the subset of individuals identified by our colleagues in Copenhagen. This algorithm will use artificial

intelligence (AI) to detect the most probably ethnic origins of the liberated Africans of Saint Helena Island. The loss of the samples slows our progress but will not deter our initiatives to be at the forefront of research on African American biological history. ****





DR. ROGER MITCHELL GIVES INSPIRATIONAL TALK TO BIOLOGY

DEPARTMENT

As a prominent Howard University alumnus, Chief Medical Examiner for Washington DC, and member of the Cobb Research Laboratory Advisory Board, Dr. Roger Mitchell (pictured to the left) has a great deal to contribute to the awareness and understanding of our students and faculty. We were honored to have him speak recently at Howard University Biology department. Many students were inspired by his career and they indicated an interest in forensic pathology. Thank you Dr. Mitchell for a stimulating presentation. ****

CRL SENDS RESEARCHERS OFF TO NEW ENDEAVORS

As a follow-up to the November 2019 Freshman Seminar at Howard University by Dr. Fatimah Jackson, interested undergraduates were encouraged to consider joining the research facility at the Cobb Research Laboratory. In early December the CRL staff sponsored an Orientation and Open House to welcome these new prospective researchers. This was their first opportunity to visit the CRL in HUIRB, and to interact with senior research staff. From these interactions, it is hoped that long-term alliances can be forged and the research effort accentuated. All incoming researchers will need to complete on-boarding forms including CITI certification, emergency contact forms, confidentiality forms, and a new research integrity form. We welcome the new researchers and look forward to their active participation in the CRL. ****



Letter from the Editor: The Importance of Science Education

As the COVID-19 global pandemic plays out on the world stage, the human race is being globally connected again by a shared experience of sickness, strength, and cooperation. Healthcare workers, public health officials, and many other essential workers scramble to keep our livelihood sustainable, as we shelter in place to protect our vulnerable populations. In a time where information is at our fingertips, we saw a yearning for more knowledge about the novel virus that was upending our normal routines. Suddenly, news outlets, vloggers, public figures, and even local governments became science educators. They all worked to inform the public about R0, viral loads, exponential growth, antibodies, serological tests, N95, and even a lesson on x-ray interpretation!

This distillation of information reminds us, here at the CRL, of our mission to inform and educate, not only our students, but the public at-large; Symposia broadcast to our scholastic colleagues and strawberry-smashing workshops open the imagination of our littlest minds. Although the CRL has not been able to operate at its maximum potential for many months, we are excited to return to expanding the knowledge-base of humankind. Basic science has again been proven to be a driving force in our world, and we intend to carry on as a shining light in this pursuit. ***





COVID-19 VACCINE DEVELOPMENT INVESTIGATED BY DR. KIZZMEKIA CORBETT, LEAD NIH CORONAVIRUS RESEARCHER

Dr. Kizzmekia Corbett, African American viral immunologist at the Vaccine Research Center (VRC) at the National Institute of Allergy and Infectious Diseases recently gave two presentations at Howard University to educate students and faculty about SARS-CoV-2, the causative agent of COVID-19. Dr. Corbett is an outstanding scientist and her inspirational talks stimulated many in the audience to want to learn more about virology, vaccine development, and research in public health.

Dr. Corbett discussed the work of the scientific team that she leads as well as discussed her journey to become a top researcher at the National Institutes of Health. We at Howard University were grateful for her visits and the fact that she is in charge of vaccine development at NIH was extremely encouraging. We are all rooting for her vaccine to be the dominant model as this research progresses. ****

Pod development as a strategy for effective, interactive online labs in biology

With the switch on online teaching in the life sciences, we need new strategies to connect with students and keep them engaged. Pod development represents a fresh approach to allow students in natural science laboratories the small group experience that has been shown to enhance student learning.

Basic Structure and Function.

A pod is a detachable or self-contained unit on an aircraft, spacecraft, vehicle, or vessel, having a specific function. Closer to biology, it also refers to an elongated seed vessel of a leguminous plant. In this case, the pod is a group of 10 students who work together to solve problems in genetics and genomics over the course of a semester. Working together, they solve shared problems in learning the core concepts in genetics and genomics. These students regularly interact online in breakout groups and present their virtual laboratory findings consecutively during weekly group sessions, so that each member of the pod has defined responsibilities to contribute to the knowledge base of the group and its ultimate success.

Pods receive, on average, three course-related assignments per session. One assignment is unique to the group, two are shared with other pods. This permits the comparison of answers to the shared assignments between pods and allows the assessment of pod progress relative to each other.

Each pod member is evaluated internally by his or her fellow pod members as well as receiving evaluations from the course TA and instructor. This permits individual accountability in the pod environment.

Learning Objectives.

Reemphasize core concepts in genetics and genomics through intra-pod and inter-pod communications facilitated by group problem solving, collaborative critical thinking, and extended discussions of research issues.

Perfection of individual biology tool kits through application of basic terms and concepts in genetics/genomics to everyday situations. Integration of key terms and concepts into regular analysis of course materials.

Enhance retention of course materials through group learning coupled with individual responsibility for reiteration of key terms and concepts.

The pod environment is expected to enhance student learning in the life sciences where interactive science and hands-on experiences have traditionally dominated the learning process. Pods use the online experience as a vehicle for improved communication rather than an impediment to knowledge transfer.

For more information on pod development, please contact Dr. Fatimah Jackson at fatimah.jackson@howard.edu

THE 2020 W. MONTAGUE COBB LABORATORY JOURNAL THE BACKBONE ISSUES CALL FOR PAPERS

STRUCTURAL RACISM EDITION



I. Introduction

The Backbone is an online journal that examines the bioanthropological and sociopolitical dimensions of the skeletal and dental collections housed in the Cobb Research Laboratory. The journal has an international readership of students, professionals, researchers interested in the biological sciences, health disparities, ethnography, demography, and history. In addition to the scientific commentaries, papers, and reviews on genetics, anatomy, epidemiology, and bioinformatics, *The Backbone* also publishes literary and visual arts pieces. The year 2020 marks the 5th year of the journal's publication history.

The W. Montague Cobb Research Lab is beginning 2020 with a call for papers for an issue dedicated to **Structural Racism**. For the purpose of this edition, structural racism is defined as the web of institutions, societal paradigms and processes that produce and reinforce oppression and inequities for people of color in the Americas. In addition to examinations of the components of structural racism itself, submissions that examine the biological impact of structural racism in the are also welcome.

II. Submission Types

Manuscripts (Papers)- Quantitative or qualitative empirical studies on the role/impact of structural racism on biological systems, ethnography, demography, minority health or health disparities. (Up to 3500 words, 35 references max, maximum of 2 tables or figures)

Commentaries- Comments or observations the role/impact of structural racism in the literature, media, policies or contemporary events. (Up to 2500 words, 25 references max, no tables or figures)

Artwork- Artwork must be reflective of the topic of structural racism. Submissions must be sent with the following, a) a title, b) the artist's name and email, and c) a 200-word description of what the artwork is depicting.

III. Submission & Deadlines

Authors that wish to submit papers or artwork for inclusion in the 2020 edition of *The Backbone* should adhere to the following guidelines: Manuscripts and artwork will be accepted by email only. Please email complete manuscripts or artwork to cobbresearchlab@gmail.com by 11:59 PM February 6th 2020. Manuscripts must be submitted in doc. format. Graphic files must be submitted in PDF, GIF, or JPEG format (*artwork must be sent in the exact dimensions intended for viewing*). Authors and Artists will be notified by email of the status of their submission (accepted or rejected) by February 13th 2020.

IV. Expected Publications for 2020 and topics

Issue	Topic	Issue	Topic	Issue	Topic
Fall 2020	Structural Racism	Winter 2020	Scientific Literacy	Spring 2021	Open



Upcoming changes to the CRL Web Pages Planned

The CRL website: www.cobbresearchlab.com will migrate to the COAS server at Howard University. Plans are currently underway to modify our very popular site, add a section in French, and include more biographical sketches from our new undergraduate researchers. This was planned for last month, but has been interrupted by the onset of the global COVID-19 pandemic. The summer or fall 2020 issues of the newsletter will contain more information on this move and the expanded international opportunities that this presents for the Cobb Research Laboratory. ****

CALL FOR PAPERS ON GENETICS AND HISTORY IN AFRICAN STUDIES

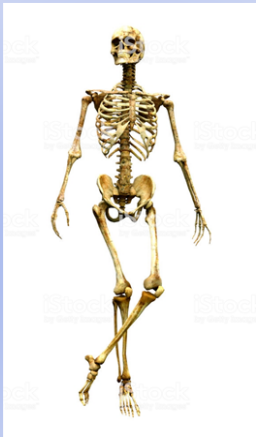
Longtime CRL supporter Dr. Shomarka Keita has informed us that Researcher Akin Ogundiran (UNC-Charlotte) [pictured below] is considering an issue of African Arch Review that deals with genetics and history--related to African issues.

He seeks 6-8 contributors, preferably geneticists or biological anthropologists who would like the opportunity to publish their ideas on the interface of genetics and history in the study of Africa. We need African and other Third World voices critical of the status quo and willing to offer alternative emic viewpoints.

If interested, please contact Dr. Keita at soykeita@yahoo.com *****



Looking for a good investment during the COVID-19 pandemic?



Invest in our future!
W. Montague Cobb Research Laboratory supports student research in science, technology, engineering, and mathematics (STEM) and integrates this with the social, behavioral, and humanistic sciences.

SCIENTIFIC LITERACY PROJECT PICKS UP STEAM WITH 80 SUBMISSIONS

An innovative effort to increase public literacy in science has been initiated through a joint project between the Backbones to Life Writers Collective and Howard University's Department of Biology Genetics course. As part of the course taught by Dr. Fatimah Jackson, students were asked to provide easy-to-understand descriptions of core concepts and topics in genetics and genomics. Students were encouraged to put these in a format that would be appealing to children and young adult readers. Each submission is approximately 5000 words and came with accompanying illustrations. This summer, a small team of reviewers



BIOL 200 SCIENTIFIC LITERACY PROJECT



Inventory, Editing, Organization, Field Testing, Publication during Summer 2020. If you are interested in joining this research team, send me an email.

Dr. Fatimah Jackson



will go through the submissions to identify projects that will be submitted for publication consideration. It is hoped that increasing the availability of culturally-competent and scientifically accurate books on genetics and genomics will enhance the public understanding of these areas and possibly inspire our youth to learn more in the sciences. Additionally, the current COVID-19 pandemic, and its disproportional impact on communities of color highlight the importance of understanding the underlying science. We hope that this effort to make science accessible will reinforce key concepts in the student authors and inspire the readers of our stories to delve more into genetics and genomics. *****

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Recent Successes Among CRL Researchers

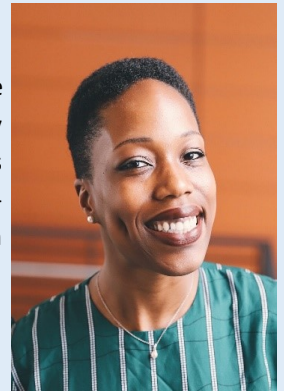
Carter Clinton authors another publication!



Doctoral candidate Carter K. Clinton has coauthored a paper with Dr. Fatimah Jackson to be published in late 2020 in the *American Journal of Physical Anthropology*. This journal is the number one professional journal in biological anthropology. The title of the paper is “Historical overview, current research, and emerging bioethical guidelines in researching the New York African Burial Ground”. The paper provides a novel reflection on the bioethical actions and decisions surrounding the excavation of the New York African Burial Ground in the 1990s, the significance of conducting research on historical African and African American remains, and the importance of protecting newly discovered African American burial sites for future research investigations. This is Carter’s second publication from his dissertation. ****

Esohe Irabor awarded Just-Julian Fellowship!

Congratulations to Esohe Irabor, who has been awarded a Just-Julian Fellowship for 2020-2021. Esohe received this fellowship in support of her proposal entitled: "Correlations of Human Genomic Diversity and Oral Microbiome Diversity in African Americans". Since applying for this fellowship, she has switched to the laboratory of Dr. Mildred Pointer where, presumably she will work on a project connected with renal physiology. Congratulations to Esohe, who capped her three years in the Cobb Research Laboratory with this prestigious award. ****



Tah-jai Sharpe Graduates from Howard University!



Tah-jai Sharpe is a graduating Senior from the CRL. He is a member of the Howard University Honors College, graduating with a Biology & Psychology double major, in conjunction with a Chemistry & Classical Civilization Dual Minor. He is also the CEO & Founder of Mentoring Youth & Teens’ Health, with a mission is to provide mentorship, youth empowerment, and guidance to students and to bring awareness to mental health. He recently gave a presentation at the 2019 Annual Biomedical Research Conference for Minority Students (ABRCMS) Novel Extraction Technique of Petrous Bones for DNA Sequencing, in Anaheim Convention Center in Anaheim, California. Tah-jai worked on various projects at the CRL including Rib Notching as a marker for hypertension in skeletal material, and our petrous bone DNA extraction efforts. We are proud of Tah-jai and wish him well for his future endeavors! ****

Mariam Mohammed accepted into Medical School!

Mariam Mohammed has been accepted to Howard University College of Medicine. A DC native, Mariam has strived to become a medical doctor her entire life. Attending George Washington University for undergrad before graduating from Georgetown University with a Masters of Physiology, Mariam has developed into an exceptional student and role model. She was a primary author of the CRL’s paper entitled “Cancer in a Historic Washington DC African American Population and its Geospatial Distribution” published in 2018 and has contributed to many other projects in the lab. We are excited to have her back in the Howard Community as a part of the Medical School!

