

# Cobb Research Lab News

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

Volume 4, Issue 2

EDITOR: Dr. Fatimah Jackson

WEBMASTER: Whitney Griffith WINTER 2016-2017

**85**  
Years  
**ANNIVERSARY**

## Commemorative Centennial Issue

W. Montague Cobb Research Lab  
**400 YEARS OF  
AFRICAN  
HISTORY &  
BIOLOGY**  
Howard University



### 85 years and counting

The research laboratory founded by Dr. William Montague Cobb at Howard University was initiated in 1932, soon after he joined the faculty. This makes 2017 the 85th year of existence of the research laboratory. Over the years, An important rationale for the research lab was to provide empirical evidence for the biological and social equality of Black and White Americans to demonstrate the devastating effects of poverty and inadequate health care on the human body. As a result of the vision of Dr. Cobb, we are blessed with an outstanding collection of skeletal and dental materials on nearly 700 individuals. Our duty is to analyze these materials and use the information garnered to improve the status of the present and future generations.

Howard University's continuation of the research laboratory is testimony to the priority the university has made for research, its commitment to archival materials, and its recognition of the potential for unique insights from the Cobb Collection and the New York African Burial Ground, the two major collections at the Cobb Research Laboratory.

We feel that the recent move of the CRL's genomic and radiographic facilities to Howard University new Interdisciplinary Research Building is indicative of the university's commitment to and recognition of the importance of this research laboratory. We are grateful to acknowledge the 85th anniversary of the laboratory and pledge our continued investment as researchers and scholars to generating high quality research based upon interdisciplinary, next generation science. In this way, the next 85 years will be continue to be a reflection and expansion of Dr. Cobb's vision. Join us in early May for a reception to celebrate 85 years of the Cobb Research Lab! \*\*\*\*

### Looking back to move forward

During the 3.5 years that Dr. Fatimah Jackson has led the Cobb Research Laboratory, we have achieved a number of major milestones.

- ◆ Active Memoranda of Understanding with major internal and external units to facilitate the training and extend the research capabilities of the CRL;
- ◆ Generous research funding from the National Park Service and their purchase of essential equipment and supplies to advance our research agenda;
- ◆ The opportunity to train over 200 undergraduate and graduate students in research methods and the ethical conduct of research. Each of these individuals have received CITI certification and hands-on laboratory experiences;
- ◆ Howard University support for our research endeavor as evidenced by the permission granted to move our genomic and radiographic units to the new Interdisciplinary Research Building. This move greatly facilitates our generation of first class data from the collections of the CRL, and;
- ◆ Expanded collaborations within and outside of Howard University to increase the breath and depth of our research capabilities.
- ◆ High intensity, hands-on mini-courses in the sciences offered for the first time during our summer Boot Camp sessions. \*\*\*\*

### Outstanding Cobb Student Research Assistant Cameron Clarke Named Rhodes Scholar!

Howard University undergraduate and super student Cameron Clarke has been named a Rhodes Scholar. While a research assistant at the Cobb Research Laboratory, Cameron has been brilliant, personable, honest, and well-spoken with a genuine commitment to both science and community service. (CONTINUED ON PAGE 2)



He is a hard worker and consistently aware of the efforts that must be made to develop a strong research foundation. He was willing to make this commitment on a consistent basis and served as a model among our research assistants. He also demonstrated outstanding concern with excellence in public service. in the Cobb Research Laboratory, Cameron (pictured on left) has been exceptional. He is skilled in information technology and is an excellent writer. He worked on several lab projects but his efforts to digitize the skeletal and dental records of both the New York African Burial Ground and the Cobb Collection have contributed to a published paper in the *American Journal of Human Biology* that features much of his work at the Cobb Research Laboratory. The paper is entitled: What could you do with 400 years of biological history on African Americans? Evaluating the potential scientific benefit of systematic studies of dental and skeletal materials on African Americans from the 17th through 20th centuries. This co-authored paper was published in 2016. It is highly unusual for an undergraduate to be listed as an author on a major scientific publication, yet this is what his efforts justified. The other important contribution the Cameron made to the Cobb Research Laboratory was his work with the National Park Service. Cameron's maturity, reliability, and humility earned him an invitation to be the only undergraduate to join us on a field expedition to the Grand Canyon National Park. This trip was part of our cooperative agreement with the National Park Service and Cameron was not only the youngest member of the Howard University delegation, he was also among the most productive and substantially contributed to the archival research report that we hope will transform how ethnic minority history is represented by the National Park Service. Cameron represented Howard University and the CRL well in this setting and his sensitivity for the subject matter came across positively in his interactions with the various NPS officials.

Next academic year he will study at Oxford University in the UK and then go on to medical school. We anticipate that he will make exemplary contributions in the future and will definitely be someone that the world should keep in focus. \*\*\*\*

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Do you know the meaning of this symbol?

## HIGHLIGHTS OF THIS ISSUE....

- ◆ In 2017 the CRL is 85 years old!
- ◆ Cameron Clarke Named Rhodes Scholar!
- ◆ Special Report: The Future of Biohistorical Reconstructions of the Cobb Collection
- ◆ Coming in April 2017 *Discovering African Genomic Diversity Workshop and Free Screening* event!
- ◆ National Park Service invites CRL for 25th anniversary of the New York African Burial
- ◆ DNA extracted from NYABG grave soils
- ◆ College of Medicine students begin studies of skeletal anatomy of Cobb Collection
- ◆ CRL visits National Geographic as part of Genographic Summit
- ◆ Summer 2017 Boot Camp courses planned
- ◆ Cancer in the Cobb Collection report now available
- ◆ Table of contents of The Backbone now available.

## SUMMER BOOT CAMP 2017 planning underway

Plans are underway for another summer of educational boot camps. For this year, the CRL is planning sessions on:

- ⇒ **geographical information systems (GIS)**,
- ⇒ **biostatistics** (with an emphasis on the use of SAS and SPSS),
- ⇒ **bioinformatics** (including the use of STRUCTURE),
- ⇒ **forensic genetics** (including aDNA extraction),
- ⇒ **pathological anatomy**,
- ⇒ **scientific writing**, and
- ⇒ **career development** (including resume, CV, and NIH/NSF biosketch development).

We are recruiting instructors as well as students. Syllabi will be available by late April on our website. Prospective students will be able to sign up for the classes by early May on our website. Boot Camp courses are typically one day in duration and provide intensive hands-on instruction in the topic. Students completing a Boot Camp course will receive a certificate at the end of the course. \*\*\*\*



# First year Howard University Medical Students conduct anatomical research on Cobb Collection and supplement CRL database



This year the Cobb Research Laboratory is further developing its relationship with the University's College of Medicine by providing research opportunities to some of their first year medical students (M1s). Dr. Rui Diogo, Associate Professor in the Department of Anatomy, College of Medicine initiated the idea for a collaborative project in early December 2016. Since then, we have successfully onboarded 20 M1s to begin their investigations of the skeletal biology of individuals of the Cobb Collection. Their project will provide a first-ever, extensive photographic digitization of the human skeletal remains. Once completed, these will serve as an extensive photographic catalog of the collection. When these are coupled with their respective clinical and demographic records, they will provide a readied and dynamic database for analysis and interpretation. As of this writing, the project design is still being finalized and awaiting approval by our Advisory Board

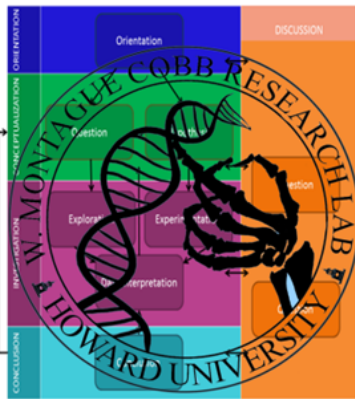
to permit proper anthropometric and osteopathological assessments. We are very excited about the potential for this project and are appreciating the presence of the medical students in the CRL's Blue Lab in Douglass Hall (pictured to left and below)\*\*\*\*



## CRL provides hands on lab training for evolutionary medicine students



The Cobb Research Lab hosted Evolutionary Medicine undergraduate students during the Fall Semester 2016. These students were taught by Dr. Michael Campbell, Assistant Professor of Biology and Research Associate at the CRL. Associate Curator, Christopher Cross (pictured above in center) conducted their lab for the day using the laboratories resources available at the CRL. The purpose of their visit was to examine specific skeletal specimens in the lab and link these to some of the medical conditions they had been exposed to in their class. This allowed them to gain insight to the standard techniques of the lab as well as how to conduct research. Additionally, Mr. Cross instructed the students on how to produce gene lists for several individuals in the Cobb Collection based on the individual's cause of death. \*\*\*\*



**COBB RESEARCH  
LABORATORY**  
WEEKLY MEETINGS  
11:00 AM TO 1:00 PM  
**THURSDAYS**  
SPRING SEMESTER 2017  
4<sup>TH</sup> FLOOR, CONF. RM.  
INTERDISCIPLINARY  
RESEARCH BLDG.  
2201 GEORGIA AVE.

Weekly laboratory meetings of the Cobb Research Laboratory are now held each Thursday at the Interdisciplinary Research Building's 4th floor conference room. All interested parties are welcomed to attend these meetings. Summary reports of our previous meetings are available on our website: [www.cobbresearchlab.com](http://www.cobbresearchlab.com)

## CRL present at the first meeting of the Genomics and Health Disparities Research Interest Group and the National Institutes of Health

The Genomics and Health Disparities Research Interest Group held its first meeting on Thursday, January 26, 2017 and members of the Cobb Research Laboratory were in attendance. The mission of this Research Interest Group is to connect individuals from different disciplines across the NIH to engage in scholarly topics that involve both genomics and health disparities and provide opportunities for professional development, social networking, and community engagement. CRL members joined colleagues at NIH to discuss our insights into health disparities in genetics research and identify ways in which we can collaborate to ensure that all populations benefit from the advances of genomics research. The kick-off meeting was at the NIH Main Campus, Building 31, 4th floor. Mr. Vence Bonham, J.D., Associate Investigator, Social and Behavioral Research Branch, Health Disparities Unit Senior Advisor to the NHGRI Director on Genomics and Health Disparities, (*pictured below*) gave an insightful presentation on “Exploring genomics and health disparities: what studying



sickle cell disease can tell us”. This was followed by a lively discussion and opportunities for networking. Representing the CRL were Dr. Fatimah Jackson, Dr. Latifa Jackson, Mr. Christopher Cross, Mr. Carter Clinton, Ms. Gretchen Johnson, Ms. Njlal Bakhsh, and Ms. Esohe Irabor. The CRL, through its active participation, hopes to continue contributing to this Research Interest Group and strengthen CRL’s ties to the National Institutes of Health. \*\*\*\*

## CRL Team meet with Autodesk officials to plan cooperative computational anatomy research

Dr. Fatimah Jackson and Mr. Cross hosted a visit by Autodesk, Inc., a billion dollar American multinational software corporation with executive officials, Dr. Azam Khan, Director, Complex Systems Research and Head of Environment and Ergonomics Research (*pictured on right*) and Mr. David Crane, VP of Government Affairs and Senior Corporate Counsel Legal. Discussed were Autodesk’s capabilities in 3D imaging of anatomical sites and plans were initiated to begin collaborative computational anatomy research on selected skeletal remains in the Cobb Collection. \*\*\*\*



## CRL contributes to Genographic Summit

Eleven years ago National Geographic launched The Genographic Project using advanced DNA analysis and next generation sequencing technology. The researches have been concentrating on indigenous communities to investigate the human story. In mid-December 2016, the Genographic Project hosted a two-day summit to provide an overview of the project to date and Dr. Fatimah Jackson and students from the CRL were invited to participate.

On the first day the summit, participants were welcomed by the National Geographic administration and the legacy of the Genographic Project was explored. Other topics covered included a discussion of obstacles in collecting diverse samples, the impact of new genomic technologies on the sampling strategy, and future directions for the Genographic Project.

On the second day of the summit attendees were joined by graduate students and post-docs from Howard University. The summit discussions included the topics of human migration, adaptation, and diversity and the development of strategies to capture this geospatial history genomically.

Subsequent to these discussions, the CRL is now pursuing discussions with National Geographic to collaborate on several future research projects, including the planned workshop and free DNA screening event entitled “Discovering African Genomic Diversity” (see page 5 of this newsletter). The aim of this collaboration with the National Geographic is to lay a foundation for the development of a robust African genomic reference database for future advanced genomic comparisons of peoples of African descent. \*\*\*\*





**RESEARCH NEWS:**

**Christopher Cross  
Conducts Research on the  
Cobb Collection at the  
Centre for GeoGenetics in  
Copenhagen, DENMARK**

During the Summer of 2016, CRL assistant curator and doctoral student Christopher Cross (pictured on left) traveled from Washington, DC USA to Copenhagen, Denmark to perform

ground breaking research for both the Cobb Research Lab and his doctoral studies. Under the leadership and vision of Dr. Fatimah Jackson, the CRL's third director in its post 1969 curation, Christopher initiated the first work ever to extract and sequence ancient DNA from individuals in the Cobb Collection (CC). Additionally, the ability to do this work would not have been possible had it not been for the advancements in molecular genomics which within the last decade developed sufficient technology to accurately extract endogenous human DNA from contaminable remains. To provide a brief understanding of what we are up against, the CC individuals were never buried and were studied from their gross skeletal anatomy. However, to gain access to the bare bones, a boiling method was applied which is horrible for DNA preservation. In addition, the skeletons were not properly stored and were handled by different individuals. Taken together, this yields not only a highly contaminable sample but a sample quite prone to advanced DNA degradation. According to experts at the University of Copenhagen, they had yet to attempt to process a sample with such proclivities. So we were truly up against an unknown. After the first few weeks, I was on boarded to their laboratory training and protocols. After weeks of learning the technical details, Christopher was then trained by Dr. Hannes Schroeder to perform all the key steps in ancient DNA extraction, quantification, and preparation for sequencing. His first set of results showed very little DNA amplification in the initial 20 CC samples but fortunately they continued to investigate the samples, added a couple new ones and ran a second experiment. Eureka! They achieved measurable quantities of DNA from four different individuals. The samples from these individuals successfully met the standard to submit for DNA sequencing so continued to process them for next generation sequencing to yield the computational data. In the most recent news, we just received the sequencing data and are currently in the process of downloading and bioinformatically analyzing it. Once we make further inroads we will know the percentage of endogenous human DNA, DNA damage patterns, and thus the DNA quality which will allow is to make the first interpretations on a genomic level of the historic African Americans we have in the Cobb Collection.

This research builds on the established collaboration between Howard University and the University of Copenhagen. \*\*\*\*



Centre for GeoGenetics at the University of Copenhagen.

**Workshop and Free DNA Screening Planned to Develop African Reference Genomic Database Planned for Howard University**

The Cobb Research Laboratory has taken the lead, in collaboration with the National Human Genome Center, the Department of Genetics, and the Howard University chapter of Sigma Xi, to apply to host a workshop and free DNA screening event for peoples of African descent, pending IRB approval. The Workshop and Screening event is entitled **"Discovering African Genomic Diversity"** and the event hopes to attract 400 to 500 people from continental Africa and the African Diasporas to learn about DNA testing and offer a sample of their saliva for DNA sequencing. With their informed consent, these participant's samples will be kept confidentially and used to build a robust database of African genomic variations. This information will lay a foundation for subsequent applied genomics work in precision medicine, proteomics, metabolomics, pharmacogenomics, and other highly important developing areas of research. With a comprehensive reference database in place, we can begin to benefit from the increasing number of the new genomic advances. The poster for the workshop and free DNA Screening is presented below. The event is planned for Tuesday, April 11, 2017 will run from **9:00 am to 4:00 pm at the Blackburn Center's Gallery Lounge** and will be a part of Howard University's Research Week. The event is a first for the region and will include guest speakers, health information materials, prizes and contests on genetics, music from Africa and the Diaspora, and DNA collections.. Sequencing of human genomes will be done in collaboration with National Geographic's Genographic Project, Family Tree DNA, and Helix. \*\*\*\*



**RESEARCH NEWS: Report on Cancer in an Historic Washington DC African American population now available.**

*Rita Okolo, undergraduate Honors student (pictured at left)*

Cancer continues to be a major cause of morbidity and mortality in the African American community. The cancer rates among African Americans are on the rise but what was the situation

85 years ago? A report on these investigations to characterize the various cancers within the Cobb Collection as well as to analyze any trends found to occur between 1930 and 1960 is soon to be published in The Backbone and made available on the CRL website ([www.cobbresearchlab.com](http://www.cobbresearchlab.com)). Within the Cobb Collection, multiple types of cancers are visible in patient records. The cancers were examined in terms of five factors: epidemiology, etiology, symptomatology, diagnosis and treatment, in order to see how the findings translate clinically. In analysis of the change overtime, possible causes will be investigated in terms of social and environmental condition changes that may have varied over the collection years. The aims of this study were to: 1) Assess the frequencies of the cancer types present in the collection in order to fulfill the epidemiologic study of the collection; to find changing patterns and trends in the collection from 1930-1960; 2) Analyze, through DNA extraction the cancer types with the highest frequencies based on the trends found in the collection from 1930-1960 in order to compare this data with current research in those fields; 3) Assess the environmental and social changes that occurred between 1930-1960 that potentially affect the changes patterns in frequencies of the cancer types present in the collection; and 4) Identify a link between the past and the present. This study will aid in broadening our knowledge on the common cancer disparities in the African American community as well as possible conditional changes that may influence the differences in the type of cancer distribution over time. \*\*\*\*

**CRL WORKING ON DEVELOPING COOPERATIVE AGREEMENT WITH NATIONAL PARK SERVICE**

The Cobb Research Laboratory has been asked by the National Park Service (New York City) to write a Cooperative Agreement for funding of research on: 3D geospatial analyses of gravesites, soil chemistry of grave soil, DNA sequencing of NYABG individuals, and high-speed computers for bioinformatics analyses. A group of CRL research associates and assistants are currently working on developing the narrative wording, equipment lists, and budgets for these sections of the planned Cooperative Agreement. At least two dissertation projects and several post-doctoral studies should come out of these research efforts.. \*\*\*



**RESEARCH NEWS: Studies of Anthropometric and Molecular Genomic Status of mid-19th Century Liberated Enslaved Africans from St. Helena Island, South Atlantic planned**

*Gretchen Johnson, doctoral student (pictured at left)*

Plans are underway to conduct research and make assessments of the human skeletal and dental

remains of previously enslaved mid-19th century Africans who were liberated by British anti-slavery efforts, but subsequently died on the South Atlantic island of Saint Helena (SHP).

St. Helena’s role in the transatlantic slave trade is momentous. Over 11 million people from Africa were physically removed from their homelands, migrated to the Americas and Caribbean, and were forcibly enslaved during the 16th and 19th centuries. Previous research was conducted on African ports, slave ships, and the destination of enslaved individuals. However, little is known about the identity of the slaves and where in Africa they originated; this is still a mystery today.

Human identification and DNA analyses of the skeletal remains of the liberated Africans would be key in unraveling this critical part of history, filling gaps in the slave trade and the African Diaspora.

Ms. Johnson’s planned study will build on and elaborate the limited previous research on this specific and unique population. The overall objective of her planned investigations is to combine forensic anthropometry, molecular genomic analyses, and archaeological/historical contexts to reconstruct a snapshot of the lives and surrounding environment of the individuals originally buried from this cohort at Saint Helena. These results will then be compared with data from the enslaved individuals from the 17th and 18th century New York African Burial Ground (NYABG).

These reconstructions will compare the morphometric evidence for phenotypic diversity and the genomic evidence for ancestry of the St. Helena individuals.

The results of this research will greatly expand knowledge of the lives of these early Africans, provide insights into their experiences just prior to their demise, reveal key aspects of their human genomic variation, molecular sex, and ancestral origins, and provide first-ever data comparing one historical trans-Atlantic African population with another. \*\*\*\*

# The Future of Biohistorical Reconstructions of Clinical Cases from the CRL

Fatimah L.C. Jackson, Ph.D., ([fatimah.jackson@howard.edu](mailto:fatimah.jackson@howard.edu))

## Introduction: Reorienting Biohistory

Biohistory is traditionally considered to be the study of history informed by biology. At Howard University we are endeavoring to redefine biohistory to better suit new developments in science and the explicit needs of our nation. We have turned the traditional definition on its head and used the term biohistory to indicate the study of **biology informed by history**. Making the dependent variable history and the independent variable human biology allows for better fit and greater consistency with the latest understanding of the impact of the environment on genomics (i.e., by means of epigenomics). Biohistory postulates that historical events can have a major influence on gene expression patterns and phenotypic outcomes. We exist as the product of gene times environment interactions as well as gene times gene interactions. This approach has particular potential value in understanding health disparities and better constructing personalized, precision medicine for underserved group. Our version of biohistory is without the racist and sexist connotations of many of the traditional approaches. The key questions that we think should be addressed by this biohistorical approach include:

- What disease did they die from and what did death from this disease mean or imply at that time?
- What might have been the larger social context within which this particular individual expressed disease? To what extent did the disease exist as a distinct clinical category at the time this person lived?
- How would this individual been treated medically just before the time of their death? How would this treatment influence disease progression and expression?

We envision a concept of biohistory that integrates genomics, population and personal histories, environmental studies, ethnography, and disease epidemiology to craft a narrative about individuals and groups that expands the current physical and clinical records at the Cobb Research Laboratory (CRL) and provides insights for national priorities in health.

## Background on the Cobb Research Laboratory (CRL).

The CRL is an interdisciplinary research unit at Howard University. The CRL currently occupies 3000 square feet in Frederick Douglass Memorial Hall and the Interdisciplinary Research Building and provides offices, archives, and two dry laboratories housing two major collections of human skeletal, dental, and bioarchaeological materials and one wet lab for DNA extraction and quantification. Currently, the CRL serves as a research magnet for students from the College of Arts and Sciences, the College of Dentistry, the College of Nursing, College of Medicine, College of Pharmacy, and the College of Engineering and Computer Sciences.

*(continued from previous column)*

The CRL also attracts students from the social sciences and the humanities as the facility offers diverse research opportunities for self-directed learning, incidental learning, and socialization, or tacit learning, three of the four major forms of informal STEM learning. The CRL also serves as an important community outreach site for public access to science and our website ([www.cobbresearchlab.com](http://www.cobbresearchlab.com)) is viewed in over 72 countries and our online newsletter and research journal reach nearly 2,000 individuals within the United States.

## Research Collections of the CRL and sources of bio-historical materials.

The two major collections housed at the CRL are the New York African Burial Ground remains and the Cobb Collection, representing 400 years of African American biological history. Our 17th and 18th century samples are derived from the New York African Burial Ground (NYABG) remains currently housed at Howard University and on loan from the National Park Service. The NYABG is the nation's earliest and largest African burial ground). These previously buried samples reflect African/African American biological diversity from the late 17th to late 18th centuries in New Amsterdam/New York City. While there are an estimated 15,000 burials, we have well-documented, archived biological remnants from approximately 250 individuals. Our 19th and 20th century samples come from the Cobb Collection (CC) contains 699 individuals. It the nation's third largest collection of human skeletal remains and is the largest containing a majority of African American individuals (83%).

## Scientific, Historical, and Educational Value of Collections.

Combined, the NYABG and the CC represent 400 years or approximately 20 generations of African and African American biological history. This timeframe has been understudied in the academy yet holds the key to providing evidence for key processes in human evolutionary biology (e.g., evidence of past selective sweeps, changes in mutation rates, evidence of gene flow [admixture], and opportunities for genetic drift) when augmented with personal and group biographical histories. These collections also serve as major inspiration for the students who have affiliated themselves with the CRL. This unique collection is highly relevant (both socially, culturally, and biologically) for many of our student researchers and access to these materials for study serves as a catalyst for student engagement in



STEM-associated research. In addition to the skeletal, dental, and bioarchaeological resources of the CRL, we also maintain an extensive archived set of clinical, demographic, and historical records on many individuals biologically represented in the collection. We have their names, occupations, age, marital status, and address at the time of death for a large number of the individuals of the Cobb Collection. Photographs and radiographs exist for some of the individuals and using supplemental documents provided by Dr. Cobb, materials available at the National Archives, and using the resources of Ancestry.com Inc. (www.ancestry.com), the largest for-profit genealogy company in the world, we have begun to construct and publish biohistories on a subset of the individuals in the collections. These efforts complement our focus on the extraction and sequencing of DNA from the individuals of our collections and are the future of research in this area.

#### **Anticipated benefits of biohistorical approach.**

We envision that these biographical studies of specific individuals of the Cobb Research Laboratory will provide new, historically informed insights on health disparities and precision medicine for the descendants of the individuals represented in the New York African Burial Ground and the Cobb Collection. By contextualizing an individual's "story" within the setting of larger local and national issues, we believe that their health disparity (e.g., cardiovascular disease, tuberculosis, syphilis, etc.) can be better understood. The systematic infusion of historical insights into genomic data and clinical interpretations can become a significant move toward precision medicine for populations at risk of being left behind by the medical and scientific advances of the 21st century.

The merging of genomic (DNA studies) interpretations and African American life narratives, both within an accurate historical paradigm, can provide a strengthened sense of personal and group identity, renewed sense of purpose, and a stronger affiliation with others. We envision that pursuing biohistorical narratives on each of the clinical cases in the CRL will reveal new associations between environmental factors and genomics. Up to this point, there has been little consistent dialogue between historians, geneticists, environmental and geographical scientists, ethnographers, and clinicians. We think that this research direction will change toward a more integrative approach if experts from different disciplines can "see" their fields as central in this new technique and therefore are willing to invest in the development of comprehensive biohistories.

A listing of the latest biohistories researched over the summer 2016 by the SMDEP students is provided in the contents page of *The Backbone*. These contents are included in this issue of the CRL News. \*\*\*\*

## **First sign of DNA in grave soil from the New York African Burial Ground**

*Carter Clinton and Tomilowo Abijo, doctoral students*

Tomilowo Abijo and Carter Clinton have recently detected DNA in several soil samples from the New York African Burial Ground collection. The process leading up to this event was a tedious one. Initially, they had to determine the best kit to use with the grave soil samples, specifically one for



samples that could detect minimal amounts of DNA. Then, they had to optimize the protocol to render significant levels of DNA. As a result, they've collected valuable results that can be used for preliminary data for the entire project. The samples selected for initial experimentation are burials 290, 209, 310, 282 and 235, each representing a different temporal period (should I list each temporal period?). The samples are comprised of three males and two females with an age range of 28- 55. Because the NYABG samples are highly degraded there have been many doubts as to whether DNA extraction is possible but apparently with this new development confirms that it most definitely is possible! Subscribe to the *Cobb Research Lab News* for immediate updates! \*\*\*\*

**Celebrate Our 150<sup>th</sup>  
Sesquicentennial Events with  
the Department of Biology**

OPEN HOUSE, LAB VISITS, MEET OUR FACULTY AND STUDENTS, RECEPTION IN GREENHOUSE,  
SILENT AUCTION, AWARDS DINNER, PRIZES AND MORE

MONDAY, MARCH 6<sup>th</sup>, 2017, E. E. JUST HALL, 415 COLLEGE ST. NW,  
HOWARD UNIVERSITY, WASHINGTON, DC 20059



# CRL members participate in 25th Anniversary of the New York African Burial Ground hosted by the National Park Service. *Christopher Cross, Assistant Curator*

Dr. Jackson and Mr. Cross, Director and Assistant Curator of the CRL respectively, were invited to attend the 25th Anniversary of the Rediscovery of the African Burial Ground by the United States Department of Interior, National Park Service, via Superintendent, Ms. Shirley McKinney on December 29th, 2016. This was such an amazing and historic celebration as the Park Service partnered with local New York groups who sang and drummed to celebrate Kwanzaa. It was truly a site to behold, to be in a federal building built atop the remains of African American ancestors from the 17th and 18th century listening to young African descendant people play instruments and sing in commemoration of the African Burial Ground (ABG) and the African American Holiday of Kwanzaa. In addition, it wasn't all play, Dr. Jackson gave a resounding presentation centered on the Future of ABG and how it intersects with her vision to ultimately make Howard University via the Cobb Research Lab, a key player in sequencing and interpreting African diaspora genomes. She closed her talk by advocating for the need to create a new NAGPRA for African Ameri-



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can remains that are continuously found throughout the United States and how we can honor them (our ancestors) by researching them to ultimately bolster African American reference genomes to better address understandings of ancestry, health, and wellness. Dr. Jackson's PPTX of this presentation will be made available on the CRL website. \*\*\*\*



Youth steel drummers perform and Superintendent Shirley McKinney and Historian Michael Frazier enjoy the 25th Anniversary Celebrations.

## Pictures of our New Genomics Laboratory at 406 Interdisciplinary Research Building



The Cobb Research Laboratory is in the process of moving into a new DNA Lab at the Interdisciplinary Research Building (HUIRB). Over the next weeks we will be relocating equipment, supplies, and scientific materials from our previous sites to this new location. We wanted to share with you some “before” pictures!

### DISCOVERING AFRICAN GENOMIC DIVERSITY WORKSHOP

All are encouraged to attend this workshop, participate in the free DNA screening, and join us in commemorating Howard University's sesquicentennial celebrations. For more information on the event, please consult our website at [www.cobbresearchlab.com](http://www.cobbresearchlab.com) or contact the PI, Dr. Fatimah Jackson at :

[cobbresearchlab@gmail.com](mailto:cobbresearchlab@gmail.com).

**DONATE NOW**

If you like what we're doing please make checks payable to Howard University with “Cobb Research Lab” in the Memo.

Account/Tax ID Numbers are:  
**R201500 / 530204707**

### CALL FOR COMMUNITY OUTREACH PARTICIPANTS

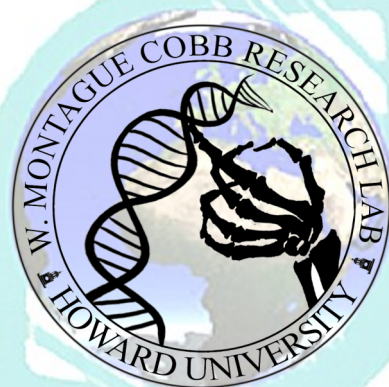
Are you a local school group interested in a summer program with the CRL? We are now considering requests from community groups who want to collaborate with us. We offer tours of the lab, K-12 mini-classes in the sciences, and lectures on lab activities. Contact us at: [cobbresearchlab@gmail.com](mailto:cobbresearchlab@gmail.com)

### Interest growing for pro-science march in D.C.

Interest is increasing for a Scientists' March on Washington to protest what many believe is a stance against open science taken by President Donald Trump that could affect their research. In just a week, a “march for science” (date still uncertain) already has 250,000 followers on Twitter account @ScienceMarchDC. Not all the followers and marchers will be people with science PhDs, of course, but the number is an indicator of how the idea is resonating. Since this is to occur in our own backyard, *CRL News* will keep you informed of any pro-science activities along these lines.

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### UPCOMING EVENTS :



**February 2017: Black History Month**

**March 2017: Biology Sesquicentennial Celebration**

**April 2017: Research Week Oral and Poster Presentations  
Research Week Workshop on African Genomic Diversity**

**May 2017: 85th Anniversary Reception for Cobb Research Laboratory**

**Summer Boot Camp 2017 mini-courses begin**

**Summer Internships available for top undergraduates**