

Genome Adventures: Where Science Meets Fun!

Press Release

5th March 2015

Contact: Ed Pettitt, 319-0083, 71995096, epettitt@bcm.edu

“Where Science Meets Fun” – that’s the motto of Genome Adventures, an innovative Wellcome Trust-funded community engagement initiative of the Collaborative African Genomics Network (CAfGEN), a member of the Human Heredity and Health in Africa - H3Africa Consortium, coordinated by the Botswana-Baylor Children’s Clinical Centre of Excellence (COE). Genome Adventures aims to help the general public in Botswana and throughout the African continent to better understand genomics and biomedical research.

According to Botswana-Baylor COE Senior Project Coordinator Ed Pettitt, “A ‘genome’ is a human’s entire genetic code - a library of instructions - which determines different aspects of our development and heredity.” Pettitt explains that genomics is a new field of research in Botswana, giving scientists an opportunity to find solutions to human health problems through studying human heredity and genetic traits.

Botswana’s latest foray into genomic research came via a \$3.63 million grant from the U.S. National Institutes of Health (NIH) awarded to the Botswana-Baylor COE as the coordinating centre of a study of genetic factors that affect the progression of HIV and TB in children living in sub-Saharan Africa. Collectively forming the Collaborative African Genomics Network (CAfGEN), the study incorporates five sites: the Botswana and the Uganda Children’s Clinical Centers of Excellence provide clinical expertise for patient recruitment; Makerere University and the University of Botswana provide local molecular genetic expertise; and Baylor College of Medicine (Houston, Texas) provides access to genomics expertise and resources that will ultimately be transitioned to African researchers and institutions in a sustainable manner. A major component of the CAfGEN project is to provide specialized genomics training to graduate students from Botswana and Uganda at Baylor College of Medicine, as well as to build the laboratory infrastructure at University of Botswana and Makerere University, so that these students and other researchers will have access to cutting-edge technologies to conduct genomics research on the African continent, thereby reversing the notorious African “brain drain”.

A \$46,000 grant from the Wellcome Trust – a U.K.-based biomedical research charity - to establish Genome Adventures will also allow the CAfGEN researchers to make an impact beyond the walls of their clinics and laboratories in Botswana. According to Lead Science Communications Advisor for Genome Adventures, Abraham Mamela, “Understanding and writing about scientific topics – as well as translating scientific concepts into illustrations - in Sub-Saharan Africa is a challenge for many journalists, cartoonists, and creative writers.” Mamela explains that the Genome Adventures team works closely with the scientists of the CAfGEN project to explain research activities and share scientific information to create a well informed populous.

Pettitt adds that “there is currently a lack of public understanding and community engagement around genomics and biomedical research in sub-Saharan Africa, including Botswana.” To counteract this, Genome Adventures has already hosted two community engagement workshops: one for community stakeholders in December 2014 and one for media practitioners, including journalists and cartoonists,

Genome Adventures: Where Science Meets Fun!

Press Release

5th March 2015

Contact: Ed Pettitt, 319-0083, 71995096, epettitt@bcm.edu

on 5th March. In these workshops, journalists and cartoonists spent time with scientists and field experts to better understand and appreciate genomics and biomedical research in Botswana. The Genome Adventures team also meets regularly with the CAfGEN Community Advisory Board, a diverse group of community stakeholders representing various youth, human rights, and religious communities and organizations. The CAB provides vital feedback on the comic series storyline and design, ensuring that the final product will meet the needs of Botswana's diverse communities.

The cornerstone of Genome Adventures' community outreach is the publication of a series of four comic books. The general plot is that a boy enrolled at a pediatric HIV clinic, named Kitso, receives a letter inviting him to join a study examining the influence of genetic factors on HIV and TB disease progression. As Kitso grapples with whether or not to join the study, the Genome Adventures superhero team arrives to help him understand what genomics is all about. In book one, Kitso learns about the history of heredity; African contexts will also be emphasized, with Kitso visiting West African Bantu pastoralists who bred cattle for certain traits. In book two, Kitso will learn about the field of genetics at the molecular level, including the structure and function of DNA; for this the Genome Adventures superheroes will shrink themselves and Kitso to be inside the human body, including the cell and nucleus, to explore genetic concepts. In book three, Kitso will learn about the relatively new field of genomics, including the basics of Genome Wide Association Studies, and how they help us learn about the link between genetics and health; for this book, Kitso will spend time in a research lab. In the fourth and final book, the boy will return to his clinic to be enrolled in the study, going through all the steps that real-life patients would encounter when they enroll in the CAfGEN study.

The Genome Adventures team hopes that their first comic book will be finished by the end of March. Renowned local cartoonist Albert Lekgaba is acting as the project's chief illustrator and designer. According to Lekgaba, "Cartoons are a captivating art form and an effective method to engage policy makers, the business sector, civil society, and the general public in Africa." He further explains that "cartoonists have a unique and creative means to engage with various audiences using techniques such as satire and the simplifying of complex topics." The Genome Adventures team will be working with local newspapers to disseminate the comic books as inserts, and will also explore opportunities for dissemination through the Ministry of Education and various NGOs throughout the country, such as those partnering with the Botswana-Baylor COE on their nationwide adolescent life skills programme, Teen Club. Comic strips will also be disseminated via the Genome Adventures Facebook page (www.facebook.com/GenomeAdventures) and blog (genomeadventures.weebly.com).

Though the Genome Adventures team intends to print and disseminate their final comic book by the end of July, the team hopes that this is just the beginning of a new chapter in African biomedical science. Said Pettitt, "We are very optimistic that other African research groups, such as those aligned with the H3Africa Consortium, will want to replicate, adapt, and expand the comic book series and other community engagement activities that we have piloted here in Botswana. In that way, Botswana can lead the continent in ethical, community-engaged genomics and biomedical research."