Myron Keith Gibert, Jr.

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Goal

My career goals are:

- *to become a leading scientist in the fields of cancer biology and bioinformatics*
- *to cultivate the next generation of scientists, innovators, individuals, and free-thinkers*
- *to promote a workforce that is both inclusive and representative of the modern United States.*

Education

University of Virginia School of Medicine – Charlottesville, VA
Ph.D., Biomedical Sciences (Microbiology, Immunology, and Cancer Biology)
Cancer Training Grant Fellow

Hampton University – Hampton, VA
B.S., Biology Major (Cellular and Molecular Concentration), Leadership Studies Minor
MARC Scholar
Honors Studies
Class of 2016

Friendly High School – Fort Washington, MD
Valedictorian
Class of 2011

Current Project

Location: **University of Virginia**
Title: *Uncovering the role for transcribed ultra-conserved regions as long non-coding RNAs in glioblastoma*
Mentor: Dr. Roger Abounader
Dates: January 2017 – (Ongoing)
Presented: 23rd Annual Hampton University Research Symposium (Oral and Poster)
Project Abstract:
Glioblastoma (GBM) is the most common and most deadly malignant brain tumor. Most GBM research has focused on protein-coding genes and much less on non-coding transcripts that make up 98% of cellular RNA. Transcribed Ultra-Conserved Regions (TUCRs) represent an understudied class of long non-coding RNAs (lncRNAs) that are found conserved across multiple species. These non-coding transcripts are highly resistant to variation and are commonly deregulated in cancer, suggesting regulatory and functional importance. We performed a first time analysis of TCGA RNA-Seq data and identified 194 TUCRs that are

differentially expressed relative to normal brain and 235 that correlated with patient survival. This project aims to identify, prioritize and validate TUCRs that are differentially expressed and to uncover the functions, mechanism of action, and therapeutic targeting of select TUCR lncRNAs in GBM. To achieve these aims, lncRNA status of TUCRs will be verified using analysis of RNA-II polymerase activity and H3K4met3 trimethylation. LncRNAs will be prioritized according to their differential expression, correlation with survival, and genomic location. To uncover the functions of candidate TUCRs, they will be overexpressed or knocked down and analyzed for malignancy parameters in vitro and in vivo. To elucidate the mechanisms of action of select candidate TUCRs, their predicted structure and binding partners will be determined followed by functional rescue experiments. Successful completion of this project would represent the first comprehensive analysis of TUCRs in GBM, generate new knowledge on the mechanisms of GBM malignancy, and uncover new therapeutic targets in one of the deadliest human cancers.

Publications

- Cruickshanks, N. et al. *Clinical and biological implication of the p53 pathway in glioblastoma.* Cancers (Basel). (Invited to review). Summer 2018
- Cruickshanks, N. et al. *Discovery and therapeutic exploitation of mechanisms of resistance to MET inhibitors in glioblastoma*. Clinical Cancer Research (Under Review, Conditionally Accepted). 2018
- Cruickshanks, N. et al. *Role and therapeutic targeting of the HGF/MET pathway in glioblastoma*. Cancers (Basel). Vol 9: Issue 7. 2017 <http://www.mdpi.com/2072-6694/9/7/87>
- Gibert Jr, Myron K. *Cancer metabolism.* Journal of the Minority Science Apprentice. Vol 8: Issue 1. March 2014 <http://docs.hamptonu.edu/student/5917-jmsa_online_2014_20140415154204.pdf>

Achievements

- Boy Scouts of America, **Eagle Scout**, Troop 1551
- University of Virginia School of Medicine **Diversity Consortium member**
- **Biomedical Sciences Leadership Curriculum Executive Committee member** through the University of Virginia
- William R. Harvey Leadership Institute **(WRHLI) Fellow** through Hampton University
- **Beta Kappa Chi (BKX) National Science Honor Society** Member
- **Frederick D. Inge Biology Club** Member through Hampton University
- Howard Hughes Medical Institute **(HHMI) Fellow** through Hampton University
- Member of the **Hampton University Undergraduate Cancer Research Program (HUUCRP)** in conjunction with the Hampton University Proton Therapy Institute

Research Experience

Location: **Lombardi Cancer Center at Georgetown University**
Title: *Role of Calcium Channels in Androgen Receptor Positive Triple Negative Breast Cancer*
Mentor: Dr. Mary Beth Martin/Dr. Brandy Huderson
Dates: June 2014 – August 2014, August 2015
Presented: N/A
Project Summary:
Lab techniques were used to analyze the effects of different treatments on triple negative breast cancer cells (MDA-MB-231/453). These cells were believed to have an active androgen receptor, so the effects of manipulating the androgen receptor and calcium channels were tested using RT-PCR and growth assays. A mammosphere assay was also performed to confirm that the MDA-MB-231s were differentiated from stem cells.

Location: **Hampton University Cancer Research Center**
Title: *Examining Allele Frequency Differences in Variants for DNA Repair Genes between Populations*
Mentor: Dr. Luisel Ricks-Santi/Dr. John McDonald
Dates: October 2014 – June 2016
Presented: 2015 Hampton University Research Day (Poster), 2015 AACR National Meeting (Poster)
Project Summary:

Bioinformatics tools (RStudio, The International HapMap Database, the Variant Effect Predictor, Mutation Mapper, DAVID) were used to analyze variant allele frequencies to determine how they affect populations and the incidence/mortality rates of cancers within those populations. (Poster abstract can be provided upon request)

Location: **University of Virginia**
Title: *Examining the Roles of FAK and Pyk2 on Monocyte Differentiation*
Mentor: Dr. Amy Bouton/Ryan Llewellyn
Dates: May 2015 – August 2015
Presented: 2015 SRIP Presentations (Oral), Hampton University Senior Thesis (Oral)
Project Summary:
Project consisted of looking at the role of focal adhesion kinase (FAK) and proline-rich tyrosine kinase 2 (Pyk2) on monocyte-macrophage differentiation using genetic models and pharmacological treatments. FAK and Pyk2 are kinases that have known effects on differentiation and motility in many cells, though their effects are not as well understood in macrophages. Various techniques were used to analyze the effects on genetic deletion or pharmacological inhibition of FAK and Pyk2 on monocyte-macrophage differentiation with respect to morphology, differentiation state, and cytokine production.

Location: **University of Virginia**
Title: *Long Non-Coding RNAs in Various Cancers*
Mentor: Dr. Anindya Dutta
Dates: July 2016 – August 2016
Presented: N/A
Project Summary:
Using bioinformatics tools (R programming language) and genome-wide sequencing data (RNA-seq) from the Cancer Genome Atlas (TCGA), long non-coding RNAs (lncRNAs) DRAIC, linc00152, and GS1-124k5.4 were analyzed to determine enrichment in various cancer types. In addition, this project aimed to knock down lncRNAs GS1-124k5.4, linc00152, and linc01503 in U87 and A172 glioblastoma cell lines to determine their effects on cell invasion and migration.

Location: **University of Virginia**
Title: *A novel software to normalize genome wide sequencing data*
Mentor: Dr. Michael Guertin
Dates: October 2016 – November 2016
Presented: N/A
Project Summary:
The seqOutbias software provides a means for normalizing chromatin accessibility (DNase seq) datasets by correcting for enzyme cut and ligation biases. Using this software, two different chromatin accessibility data sets (Cyanase and Benzonase) were analyzed to determine the applicability of this software to other enzymes.

Prior Work Experience

Newport News Public Schools 21st Century Tutoring - January 2015–May 2015, February 2016-May 2016
Teacher's Aide/Tutor – Was responsible for overseeing 5th grade students during the after school program, teaching math concepts, and assisting the supervising teacher with any other activities.

Hampton University Proton Therapy Institute – January, 2013 – September, 2014
Intern - Shadows the staff at the Proton Therapy Institute as they perform their daily tasks.

Andrews AFB, Commissary –June, 2012 through Current Date
Bagger - Provided customer service to commissary patrons via bagging groceries and transferring to vehicles in a supportive, cheerful, efficient manner.

Andrews AFB, Golf course – June, 2011 through August, 2011 and June, 2012 through August, 2012
Recreation Aid (Carts) - Assisted with various tasks to include player control at the starting tees; blocked tees for scheduled tournament play; monitored, maintained, and serviced golf carts; operated the motorized ball-picker; and, maintained area around clubhouse.

Office of the Comptroller of the Currency – June, 2009 through August, 2009
Clerk – Responsible for automated file logging and maintenance; summer help assisting where needed

Standardized Test Scores

GRE: Verbal Reasoning: **159**

Quantitative Reasoning: **158**

Analytical Writing: **4.5**

SAT: 1960

ACT: 33