

Curriculum Vitae

Gaius J. Augustus

gaiusjaugustus@email.arizona.edu



Personal Information

Tucson, AZ

Language English

Citizenship USA

Education

- 2014 – curr. Cancer Biology Graduate Interdisciplinary Program, University of Arizona. GPA: 3.81
- 2010 – 2014 B.S. in Integrative Studies with a focus in Chemistry and Biology. Kennesaw State University. GPA: 3.84
- 2003 – 2006 Studied Film & Television. Savannah College of Art and Design.

Honors & Awards

- 2017-2019 Cancer Biology GIDP Training Grant (T32 CA009213)
- 2018 ScienceWriters Graduate Travel Grant, NASW
- 2017 Scholar-in-Training Award, AACR
- 2017 Travel Award, The Geographic Management of Cancer Health Disparities Program (GMaP)
- 2016 Full Registration & Travel Scholarship, Summer Institutes for Statistical Genetics, University of Washington
- 2015 Scholar-in-Training Award, AACR
- 2014 Department of Biology & Physics Student of the Year Award
- 2012 – 2014 Safe Space Endowed Scholarship
- 2012 – 2013 Student Life Organization of the Year (for N/A*)
- 2012 – 2013 Charles S. Wollmer Memorial Scholarship, August C. Krueger Memorial Endowed Scholarship
- 2011 – 2012 New Organization of the Year (for N/A*)
- 2011 – 2012 Gertrude Ely Richardson Stillwell Scholarship
- 2010 – 2012 National Science & Mathematics Access to Retain Talent (SMART) Grant
- 2003 – 2006, Spring 2010-Fall 2011 Helping Outstanding Pupils Educationally (HOPE) Scholarship

Publications

Xicola, R. M., Manojlovic, Z., Augustus, G. J., Kupfer, S.S., Emmadi, R., Alagiozian-Angelova, V., Triche Jr., T., Salhia, B., Carpten, J., Llor, X., Ellis, N.A. Lack of APC somatic mutation is associated with early-onset colorectal cancer in African Americans. *PLOS Genet.* doi:10.1093/carcin/bgy122 (2018).

Augustus G.J., Roe D.J., Jacobs E.T., Lance P., Ellis N.A. Is increased colorectal screening effective in preventing distant disease? *PLOS ONE*. 2018:13(7):e0200462. doi: 10.1371/journal.pone.0200462.

Augustus G.J., Ellis N.A. Colorectal Cancer Disparity in African Americans: Risk Factors and Carcinogenic Mechanisms. *Am J Pathol.* 2018:188(2):291-303. doi: 10.1016/J.AJP.2017.07.023.

Publications (cont'd)

Yazici, C., Wolf, P.G., Kim, H., Cross, T.W.L., Vermillion, K., Carroll, T., Augustus, G.J., Mutlu, E., Tussing-Humphreys, L., Braunschweig, C., Xicola, R.M., Jung, B., Llor, X., Ellis, N.A., Gaskins, H.R. Race-dependent association of sulfidogenic bacteria with colorectal cancer. *Gut*. 2017:66(11). doi:10.1136/gutjnl-2016-313321.

Tulenko F. J., Augustus G. J., Massey J. L., Sims S. E., Mazan S., Davis M. C. HoxD expression in the fin-fold compartment of basal gnathostomes and implications for paired appendage evolution. *Sci. Rep.* 2016:6, 22720. doi: 10.1038/srep22720.

Published Abstracts, Presentations, & Posters

- 2017 Augustus, G.J., Roe D.J., Jacobs E.T., Lance P., Ellis N.A. Paradoxically Increasing Proportion of Distant Colorectal Cancer, University of Arizona Cancer Center Phoenix Retreat (Invited Poster).
- 2017 Augustus, G.J., Ellis, N.A. Copy neutral loss of heterozygosity is decreased in African American colorectal cancers, AACR Cancer Health Disparities Conference (Poster).
- 2015 Augustus, G.J., Xicola, R.M., Manojlovic, Z., Carpten, J., Llor, X., Ellis, N.A. Homologous Recombination Drives African American Colorectal Carcinogenesis, AACR Cancer Health Disparities Conference (Poster & Presentation)
- 2015 Cooper, K., Augustus, G.J., McNeal, J.R. Primer design for population genetics of Beaked dodder (*Cuscuta rostrata*), Regional meeting of Association for Southeastern Biologists
- 2015 Massey J.L., Augustus, G.J., Tulenko, F.J., Mazan, S., Davis, M.C. Expression of 5' HoxD Cluster Genes in the American Paddlefish *Polyodon spathula*, National meeting of Society for Integrative & Comparative Biology

Lectures & Educator Experience (also see Employment)

- Nov 30, 2018 From Science to Infographic (Instructor), *University of Arizona*
- Aug 26, 2017 Software/Data Carpentry Workshop on R (Co-Instructor), *University of Arizona/Cyverse*
- Mar 31, 2017 Software/Data Carpentry Workshop on git/GitHub (Helper), *University of Arizona*
- Feb 25-26, 2017 Python Software Carpentry Workshop (Helper), *University of Arizona*
- Apr 18, 2014 (A)spirituality, *Kennesaw State University*
- Nov 5, 2013 Acceptance & Identity, *Kennesaw State University*
- Oct 18, 2013 Beyond the Binary: Sex, Love, and Romance, *Kennesaw State University*
- 2013 Student Safe Space, *Kennesaw State University*

Research Experiences

- Mar 2015 – current **Ongoing Graduate Work**
University of Arizona, Cancer Biology GIDP
Faculty Mentor: Nathan Ellis, PhD, naellis@email.arizona.edu
Project: Genetics of colorectal cancer in African Americans

Research Experiences (cont'd)

- Jan 2015 – Mar 2015 **Graduate Rotation**
University of Arizona, Arizona Biological & Biomedical Sciences; Faculty Mentor: Justina McEvoy, PhD
Project: Validation of antibodies for epigenetic profiling of Rhabdomyosarcomas
- Oct 2014 – Jan 2015 **Graduate Rotation**
University of Arizona, Arizona Biological & Biomedical Sciences
Faculty Mentor: Nathan Ellis, PhD
Project: Testing reproducibility and accuracy of FFPE-Blood DNA genotypes
- Aug 2014 – Oct 2014 **Graduate Rotation**
University of Arizona, Arizona Biological & Biomedical Sciences
Faculty Mentor: Tim Bolger, PhD, tbolger@email.arizona.edu
*Project: Characterization of mutant Ded1 translation in *Saccharomyces cerevisiae**
- Spring 2013 – 2014 **Undergraduate Researcher**
Kennesaw State University Dept. of Biology and Physics
Faculty Mentor: Marcus Davis, PhD, mdavi144@kennesaw.edu
*Project: Analysis of Hox gene expression in paired fins of paddlefish (*Polyodon spathula*)*
- Spring 2012 – 2014 **Undergraduate Researcher**
Kennesaw State University Dept. of Biology and Physics
Faculty Mentor: Joel McNeal, PhD, jmcneal7@kennesaw.edu
*Project: Primer design for population genetics of Beaked Dodder (*Cuscuta rostrata*)*
- Summer 2013 **NSF Funded Research Assistant**
Kennesaw State University, Dept. Of Biology and Physics
Faculty Mentor: Marcus Davis, PhD, mdavi144@kennesaw.edu

Research Skills

Genomic Techniques

Processing of microarray data, primer design, gene sequence preparation for submission to GenBank, visualization of sequencing data, copy number analysis, differential methylation analysis, differential expression analysis

Statistical Techniques

Parametric and non-parametric comparisons of 2 categorical or continuous variables, logistic & linear regression, machine learning (clustering and classification techniques), adjusting for multiple testing

Wet Techniques

DNA isolations, RNA isolations, agarose gel electrophoresis, PCR, microsatellite identification, preparation of GeneScan reactions, field work (collecting tissue samples), planting and caring for specimens, histological techniques for skeletal staining, cDNA synthesis, gel purification, ligation into vector, bacterial transformation, plating and cultures techniques, restriction endonuclease digestion, transcription reaction, *in situ* hybridization

Computer Skills

Languages: Intermediate – R; Basic – Python

Web application development: Proficient in HTML5 standards, CSS3, PHP

Database implementation: MySQL

Employment

- Oct 2017 – Aug 2018 **Multimedia Coordinator**
University of Arizona, Cancer Center
Supervisor: Anna Christensen, achristensen@email.arizona.edu
- Jan 2014 – May 2014 **Physics Learning Assistantship**
Kennesaw State University, Dept of Biology & Physics
Supervisor: Taha Mzoughi, PhD
- Jan 2012 – Oct 2013 **Tutor of Chemistry, Biology, Physics, and Mathematics**
Kennesaw State University, Student-Athlete Success Services
Supervisor: Tyler Pede, tpede@kennesaw.edu
- 2011 – 2013 **Freelance Web Design**
- 2007 – 2009 **Freelance Portrait Photography**
- Dec 2005 – Dec 2010 **Head Photo Specialist & Certified Pharmacy Technician**
Walgreens
- Jan 2005 – Dec 2005 **Sales Associate & Lab Technician**
Wolf Camera
- Nov 2004 – Jan 2005 **Cookie Cake Decorator**
Great American Cookie Company

Leadership Experiences & Organization Memberships

- 2018 Public Affairs & Marketing Network
- 2017 – curr. National Association of Science Writers
- 2015 – 2017 American Association for Cancer Research
- 2012 – curr. Golden Key International Honour Society
- 2013 – 2014 Campus Climate & Culture Assessment Task Force
- 2013 – 2014 Society for Integrative and Comparative Biology, Student-In-Training Member
- 2012 – 2014 Student Government Association (Senator for Registered Student Organizations)
- 2012 – 2014 American Medical Student Association
- 2012 – 2014 Presidential Commission for Gender and Work/Life Balance
- 2012 – 2013 National Organization of Gay and Lesbian Scientists and Technical Professionals
- 2012 Presidential Commission for GLBTIQ Initiatives
- 2011 – 2014 Non-Normative Anti-Assimilationist Students of KSU (N/A*)

Future Research Questions

My research focus is on how the interaction of biology and environment can lead to health disparities. Several questions that I am interested in pursuing include:

What differences in tumor biology explain unique clinicopathological traits in African American colorectal cancer?

What is unique in the etiology of colorectal cancer patients who present young?

Research Advisors

Nathan Ellis, PhD
 Cellular and Molecular
 Medicine
 Director, Cancer Biology
 Program
 University of Arizona
 Tucson, AZ, USA
 520-626-7979
 naellis@email.arizona.edu

Marcus Davis, PhD
 Biology
 Associate Dean, Integration of
 Teaching & Scholarship,
 College of Math. & Science
 James Madison University
 Harrisonburg, VA, USA
 540-568-3508
 davis4mc@jmu.edu

Joel McNeal, PhD
 Dept of Ecology,
 Evolution, and Organismal
 Biology
 Asst. Professor of Biology
 Kennesaw State University
 Kennesaw, GA, USA
 470-578-3561
 jmcneal7@kennesaw.edu

Math & Science Courses

| Undergraduate | | |
|---|----------------------------|------------------------------------|
| Elementary Statistics | Biological Principles | Cell & Molecular Biology |
| Biostatistics | Evolutionary Biology | Human Anatomy & Physiology |
| Calculus II | Genetics | Physiological Psychology |
| Principles of Physics | Medical Genetics | Molecular Biosciences Seminar |
| General Chemistry | Immunology | Genomics & Systems Biology (audit) |
| Modern Organic Chemistry | Bioinformatics | Quantitative Analytical Chemistry |
| Biochemistry | | |
| Graduate | | |
| Cancer Biology | Grant Writing | Art of Scientific Discovery |
| Problems in the Biology of Complex Diseases | Science, Society & Ethics | Experimental Design |
| Genetic & Molecular Networks | Biostatistics for Research | Molecular & Cellular Neurobiology |

Art Courses

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| Survey of Western Arts I | Survey of Western Arts II | Roman Art & Archaeology |
| History of Film | Drawing I | Drawing II |
| Life Drawing I | 2-D Design | 3-D Design |
| Color Theory | Intro to Video Production | Intro to Film Production |
| Adv. Survey of Computer Applications | Preproduction | Lighting & Field Production Techniques |
| Intro to Sound Design | Intermediate Sound Design | Location Sound |
| Postproduction Techniques | Advanced Postproduction | Directing the Narrative |
| Writing Fundamentals for Screen & Stage | Screenwriting | |

Independent Coursework

| Year, Course | Medium | Institution |
|---|--|---|
| 2016-2018, Python Programmer Track | DataCamp | |
| 2015-2017, R Programming Track | DataCamp | |
| 2016-2017, Data Manipulation with R Track | DataCamp | |
| 2016, Association Mapping: GWAS and Sequencing Data | Summer Institute for Statistical Genetics | University of Washington, Department of Biostatistics |
| 2016, Introduction to Pathway and Network Analysis | Summer Institute for Statistical Genetics | University of Washington, Department of Biostatistics |
| 2016, Bayesian Statistics for Genetics | Summer Institute for Statistical Genetics | University of Washington, Department of Biostatistics |
| 2016, Cleaning Data in R | DataCamp | |
| 2016, Data Visualization with ggplot2 | DataCamp | |
| 2016, Command Line Tools for Genomic Data Science | Coursera | Johns Hopkins University |
| 2015, Reporting with R Markdown | DataCamp | |
| 2015, Intro to Statistics with R: Introduction | DataCamp | |
| 2015, Introduction to Metagenomics Data Analysis | Summer Institute for Modelling of Infectious Disease | University of Washington, Department of Biostatistics |
| 2015, Population Genetics Data Analysis | Summer Institute for Statistical Genetics | University of Washington, Department of Biostatistics |
| 2015, Gene Expression Profiling | Summer Institute for Statistical Genetics | University of Washington, Department of Biostatistics |
| 2015, Introduction to R Programming | Summer Institute for Statistical Genetics | University of Washington, Department of Biostatistics |
| 2015, Statistical Inference | Coursera | Johns Hopkins University |
| 2015, R Programming | Coursera | Johns Hopkins University |
| 2015, The Data Scientist's Toolbox | Coursera | Johns Hopkins University |
| 2015, HTML5 | SoloLearn | |
| 2014, Python | Codecademy | |
| 2014, PHP | Codecademy | |

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| 2014, PHP | SoloLearn | |
| 2014, HTML & CSS | Codecademy | |
| 2014, Learning How to Learn: Powerful mental tools to help you master tough subjects | Coursera | University of California, San Diego |
| 2013, Epigenetic Control of Gene Expression | Coursera | The University of Melbourne |