7207 Brooklyn Bridge Road
Laurel, MD 20707

Phone: (301) 252-7572
Email: Casycr1@gmail.com

Candice A. Craig

Education

Graduate Education
University of Maryland, Baltimore County (UMBC) Graduated: May 2014
Baltimore, MD
GPA: 4.0/4.0

Degree: Master of Science in Applied Molecular Biology

Undergraduate Education
University of Maryland, Baltimore County (UMBC) Graduated: May 2013
Baltimore, MD
GPA: 3.927/4.0

Degrees: Bachelor of Science in Biological Sciences and Bachelor of Arts in Modern Language, Linguistics and Intercultural Communication with a concentration in the Spanish language

Academic Honors: President's List, Dean's List, winner of the Barbara Simon Memorial Essay Contest, Member of the National Society of Collegiate Scholars, the Honor Society Sigma Alpha Lambda, Golden Key International, Omicron Delta Kappa, and Phi Beta Kappa.

Skills:

Molecular Biology
- DNA (plasmid and genomic) isolation and purification, Restriction Enzyme digestion, Gibson assembly, PCR (Long Range PCR, RT-PCR, colony PCR), Primer Design, Gel Electrophoresis, Gel Extraction and DNA Purification, bacterial transformation (electroporation and chemical transformation), subcloning, Sanger sequencing, transposon mutagenesis, bacterial competent cell preparation, and media and buffer preparation

Protein Biochemistry
- Protein induction and extraction, affinity chromatography, cell fractionation, renaturation of insoluble proteins, dialysis/buffer exchange, SDS-PAGE electrophoresis, and Western blot analysis

Animal work
- Proper rat and mouse care /handling, tail cutting/DNA extraction from murine tail tissue, designing and testing of behavioral assays in mice.

Languages: advanced reading, writing, and speaking skills in Spanish

Computer
- **Word processing programs**: Microsoft Office suite (Word, Powerpoint, Excel, Publisher, etc.)
- **Data analysis software**: NCBI tools, Vector NTI, Snapgene, and ImageJ

Communication: Experience in scientific writing as well as experience in verbal presentation of data

Biomedical Research Experience:

U.S. Food and Drug Administration — Silver Spring, Maryland
CBER- Laboratory of Mucosal Pathogens and Cellular Immunology — 07/2014-Present
ORISE Post-baccalaureate Fellow

- Investigated a novel downstream repressive element (DRE) of the virulence factor fimbriae serotype 3 (*fim3*) of *Bordetella pertussis* via transposon mutagenesis of a *fim3*-luciferase fusion within *B. pertussis*. Such a fusion allowed for identification of factors which directly regulated the DRE of the *fim3* promoter by observing for an increase in luciferase activity due to transposon knockout of DRE specific regulatory factors.
- Performed mutagenesis on a strain of *B. pertussis* which lacked a response regulator of the BvgAS two component system which is the essential for gene expression under modulating conditions. This mutagenesis was performed to identify mutants which are able to survive in modulating conditions in the absence of the primary response regulator in order to indicate genes which are involved with cell growth and survival of *B. pertussis* under modulating conditions.

University of Maryland, Baltimore County — Baltimore, Maryland
Applied Molecular Biology Laboratory, in affiliation with AthenaES — 08/2013-05/2014
Graduate Researcher
Thesis: Development of a high-throughput glucose binding assay derived from the colorimetric detection of glucose binding proteins

- Generated various fusions of the protein mCherry to a glucan-binding domain (GBD) in order to investigate the use of such a protein in a colorimetric binding assay to observe for changes in GBD activity under varying conditions. In addition, the potential of mCherry to be secreted to the periplasm by various secretion pathways was examined with the ultimate goal of targeting the mCherry-GBD fusion protein to the periplasm in order to increase active fusion protein production.

University of Maryland, Baltimore County — Baltimore, Maryland
Developmental and Cancer Laboratory — 09/2012-07/2013
Undergraduate Researcher
Thesis: Induction of inflammation leads to pelvic pain in a new mouse model of nonbacterial Chronic Pelvic Pain Syndrome/Chronic Prostatitis

- Optimized a behavioral assay for a mouse model of inducible prostatitis, where mice induced for prostatitis were tested for incontinence by observing for changes in urination patterns and for tactile allodynia through pressure tests using von frey filaments.

National Institute of Health — Bethesda, Maryland
DNA Diagnostic Laboratory, National Eye Institute
Summer Intern
07/2012-08/2012

- Verified the existence of mutations in patients diagnosed with Retinal Dystrophy, originally detected by next generation sequencing, by Sanger sequencing.
- Developed a screening method for mutations correlated to Retinal Dystrophy.

06/2011-08/2011

- Optimized Long Range PCR and Sanger sequencing conditions for detecting and defining the breakpoints of unique whole exon deletions found within the *RS1* gene in patients with X-Linked Juvenile Retinoschisis.

05/2010-08/2010

- Analyzed copy number defects of various exons within the *BEST1* gene in a monkey model for Viteliform Macular Dystrophy using RT-PCR and Sanger sequencing.

Publications:

D'Souza L, Cukras C, Antolik C, **Craig C**, Lee JY, He H, Li S, Smaoui N, Hejtmancik JF, Sieving PA, Wang X. Characterization of novel *RS1* exonic deletions in Juvenile X-Linked Retinoschisis. Mol Vis. 2013 Nov 7; 19:2209-16.

Academic Presentations:

Poster Presentation**: Craig C**., Isleen W., Julie W., and S. Broedel. "Assessing Solubility of Fusion Protein Dex-GBD, a Potential Dental Care Additive". Applied Molecular Biology Program at UMBC, Graduate Association of Biological Sciences Symposium, March 14, 2014.

Poster Presentation: **Craig C**., Angela T., Matthew B., Harsha R., Kory J., Young F., Wadih Z., Anand S., and Wang X:"Verification of Mutations Found by High-Throughput Screening in Patients with Inherited Retinal Dystrophies". NIH Summer Research Program, Summer Intern Poster day, August 9, 2012.

Poster Presentation: **Craig C**, Hong He, Antolik C, Wang X: "Defining the Breakpoints of Whole Exon Deletions in the *RS1* Gene in Patients with X-Linked Juvenille Retinoschisis". NIH Summer Research Program, Summer Intern Poster day, August 4, 2011.

Poster Presentation: **Craig C**, Antolik C, Wang X: "Candidate Gene Analysis of a Potential Monkey Model of Viteliform Macular Dystrophy". NIH Summer Research Program, Summer Intern Poster day, August 5, 2010.

Volunteer Work:

- Assistant Coach of Spencerville Adventist Academy's Acro-Squad, a high school gymnastics team 2010-2014

Leadership Roles:

- Welcome Week and Orientation Leader at UMBC 2012-2013
- Secretary of Alpha Sigma Kappa, Women in Technical Studies 2012-2013
- Big/Little Chair of Alpha Sigma Kappa, Women in Technical Studies Spring 2012

Membership:

- Member-Pre-Medical Society of UMBC 2008-2009
- Member-Acro-Airs, collegiate level acrobatic team associated with Washington Adventist University (formerly Columbia Union College) 2008-2010
- Member-Alpha Sigma Kappa, Women in Technical Studies 2011-2013

References

Charles Bieberich
Undergraduate Research Mentor
University of Maryland, Baltimore County
1000 Hilltop Circle
Baltimore, MD 21250
(410)-455-3125
bieberic@umbc.edu

Julie Wolf
Applied Molecular Biology Instructor
UMBC
1000 Hilltop Circle
Baltimore, MD 21250
Javajulie0@gmail.com

Qing Chen
Post-Baccalaureate Mentor
FDA
10903 New Hampshire Avenue
Silver Spring, MD 20993
(240)-402-9431
Qing.Chen@fda.hhs.gov

Scott Stibitz
Post-Baccalaureate Lab Chief
FDA
10903 New Hampshire Avenue
Silver Spring, MD 20993
(240)-402-7401
Earle.Stibitz@fda.hhs.gov