Nicholas Attila Kovacs

BIOINFORMATICIST & DATA SCIENTIST

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Application for CDC-NCHHSTP-BIOINFORMATICS

Dear Dr. Katie Bowden (CDC/DDID/NCHHSTP/DSTDP),

About Me

Transitioning from an experimental, bench-top biochemist in undergrad to a computational biologist in graduate school is a transition I am very proud of because I became the go-to guy in my lab and department to analyze data which led to my involvement in a diverse range of projects spanning drug development, nanoparticles, and the origin and diversification of life. I chose my PhD project because I wanted to work on answering the question that inspired me to pursue a career in science, "how did life originate and evolve?", but I realized during my PhD that I am much more interested in pathogens and public health. My changing interests are apparent in 2 of my coauthored articles concerning the development of anti-fungal therapeutics and in my 3rd, 1st-author publication of my PhD where I compare more than 400 ribosomal structures that are available on the Protein Data Bank with a focus on the structures of ribosomes from disease-causing microbes *Leishmania donovani*, *Plasmodium falciparum*, and *Trypansosoma brucei* and how these differences can lead to the development of new therapeutics.

My favorite courses I have taken are "Programming for Bioinformatics" and "Computational Genomics" which are taught by my PhD thesis committee member and letter of reference writer, Dr. King Jordan. In programming for bioinformatics, I completed assignments in bash, perl, and bioperl that taught me good practices and familiarized me with basic bioinformatics programs such as BLAST. In computational genomics, I worked in teams to to assemble genomes and identify the species and strains from which they were isolated from via Hi-Seq NGS reads provided by the CDC. I also really enjoyed two computer science graduate courses which I completed in my preferred programming language, Python; in Computing for Bioinformatics, I learned data structures and how to design efficient algorithms, and in Network Science I identified network motifs in protein-protein interaction data and did a pandemic analysis on epidemiology data. I was awarded an "A" in all 4 of these courses.

Why the Laboratory Reference and Research Branch at the CDC?

First off, my wife and many of my friends work at the CDC and they love it. Reasons they love working at the CDC that greatly appeal to me are: intellectual stimulating projects, multidisciplinary labs, fulfilling work, attending conferences and workshops within Atlanta and across the globe, publishing research articles, and opportunities for advancement. The laboratory reference and research branch provides reference and research activities for STD's and emerging infections within the US and internationally. A large amount of data can be obtained concerning the molecular biology, evolution, public health, and epidemiology of STD's and the application of bioinformatics and data science can unravel illuminate insights that can be applied to improving lives domestically and globally.

Why Me?

I am a productive and interdisciplinary scientist that works well in multidisciplinary teams and has a strong desire to have a direct impact on the well-being of others. I like to stay up to date with new technologies, adhere to reproducibility and version control, and love teaching others. Having recently been awarded a PhD in bioinformatics with a minor in biochemistry, I am eager to apply my expertise to new problems, while improving my foundational skills and learning new methodologies. The position of bioinformaticist at the Laboratory Reference and Research Branch at the CDC fits perfectly well with what I want to to do as an early-career scientist and I would be incredibly excited if extended the opportunity to interview for the position. My desired start date is February 1, 2019.

Sincerely,

Nicholas Attila Kovacs