

BILL BARRY *biology2@tcnj.edu*
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OBJECTIVE

Entry level research assistant position.

EDUCATION

The College of New Jersey, Ewing NJ
Bachelor of Science in **Biology**, Minors: **Chemistry and Computer Science**, May 2010
GPA: **3.84/4.0** scale; Honors: Dean's List (all semesters)

LABORATORY SKILLS

Animal Cell Culture Bacterial Transformation Chromatography PCR
Gel Electrophoresis DNA/RNA Isolation and Analysis Spectroscopy Protein Isolation

BIOCHEMISTRY AND BIOPHYSICS RESEARCH EXPERIENCE

University of Houston, Department of Biology and Biochemistry, Houston, TX, Summer, 2009

Student Fellow, NSF REU program in Molecular and Cell Biology

- Viewed and maneuvered 3D molecular structures of proteins using Insight II and GRASP molecular modeling software
- Performed intrinsic pKa calculations using UH Brownian Dynamics program on UNIX operating system
- Analyzed botulinum neurotoxin's proteolytic active site, developed a pharmacophore model depicting crucial enzyme/substrate interactions and searched compound databases using the Catalyst program for possible inhibitors of the active site which could be developed into a drug against botulism

Fox Chase Cancer Center, Inst. for Cancer Research, Philadelphia, PA, Summer 2008-present

Student Fellow, Bristol Myers Squibb Undergraduate Summer Research Fellowship Program

- Studied kinetic and metal ion binding properties of *Drosophila melanogaster* porphobilinogen synthase
- Performed protein purification using column chromatography
- Assayed enzyme activity spectrophotometrically
- Crystallized proteins using Hampton Screen
- Used experimental techniques to carry out site directed mutagenesis: PCR, bacterial transformation, cell growth, protein over-expression and plasmid isolation

PUBLICATIONS

Biology, B., Massey, J., Smith, L., Dooney, P. Jr., Johnson, E. A structural basis for half-of-the-sites metal binding revealed in *Drosophila melanogaster* porphobilinogen synthase. *Journal of Biological Chemistry*. 2008 Aug 15; 278 (33): 31325-31330.

Biology B., Computational and structural analysis of botulinum neurotoxin. Accepted for publication in The College of New Jersey, *Journal of Student Scholarship*. 2008. Vol. VI

HONORS AND ACTIVITIES

- Sophomore award for excellence in biology
- Honorable Mention, Joseph A. Vena Award for excellence in biology
- Beta Beta Beta Biological Honor Society