THERESA CHEMISTRY

22 Main Street, Unit 204, Baltimore, MD 21228
443-555-1234 (cell) * tchemistry3@umbc.edu
linkedin.com/in/tchemistry

PROFILE

Expertise in Biochemistry and Molecular Biology

- Over 4 years' experience in RNA (from 30 to over 560 nucleotides) synthesis: construct plasmids, optimized transcriptions.
- Strongly experienced in protein (from 6.3 kDa) synthesis from cloning to final products
- Over 5 years' experience in various gel electrophoresis assays, ITC, FPLC, fluorescent microscopy, structural biology software and approaches.
- Extensive training in protein-RNA interactions analysis

EDUCATION

University of Maryland Baltimore County (UMBC) **Baltimore, MD**
Ph.D. in Chemistry Expected: Dec 20xx
Dissertation research with Dr. Michael Summers entitled "Comparing novel dimerization mechanisms between Human and Simian Immunodeficiency Viruses (HIV and SIV) within the 5'-Leader RNA genome." Earned honorable Dean's Merit Award for 5 years in the Ph.D. program.

McDaniel College **Westminster, MD**
B.A., Biochemistry and Business Administration 20xx
Magna cum laude, member Tri-Beta and Gamma Sigma Epsilon. Thesis research with Dr. Peter Craig entitled "Evaluating the relative selectivity of the chelating agent potassium bis(2-hydroxyethyl)dithio-carbanate, K[bhedtc], for the cations Cd^{2+}, Ca^{2+}, and Zn^{2+}."

RESEARCH EXPERIENCE

UMBC **Baltimore, MD**
Research Assistant 2011-present

- Elucidated the secondary structures and discovered the dimerization mechanism of SIVcpz viruses (TAN1 and US strains) as well as the role of nucleocapsid protein in this mechanism.
- Compared the similarities and differences in structures and functions between SIVcpz and HIV-1 5'-Leader region to gain knowledge about retroviral evolution.
- Utilized techniques in molecular biology, protein expression and purification, biochemistry assays: EMSA and ITC, computational analysis for RNA secondary structure prediction and hybridization, dynamic light scattering and mass spectrometry.
- Presented posters at 9 local conferences, 2 international conferences, one of a few selected graduate students to Howard Hughes Medical Institute meeting in 2012.
- Led and trained 2-person team of undergraduates during semesters, 5-person team of undergraduates and high school students during summer.
- Managed laboratory functions including ordering, and organizing weekly group meeting.

UMBC **Baltimore, MD**
Graduate Researcher 2009-2010

- Investigated effects of copper in Aβ oligomerization and neurotoxicity regulation in Alzheimer's Disease.
- Developed gel assays for protein oligomer formation in collaboration with University of Nevada.
- Utilized techniques in inorganic chemistry, ThT assay, fluorescence spectroscopy, atomic force microscopy, confocal microscopy and electron paramagnetic resonance (EPR) spectroscopy.

McDaniel College **Westminster, MD**
Undergraduate Researcher 2008

- Synthesized and purified Cadmium chelating agent in vitro, K[bhedtc]
- Analyzed the binding selectivity of [bhedtc] chelator to Cadmium in the presence of Calcium or Zinc ions at their biological concentrations using potentiometer (ISE).
- Developed protocol for performing competition assay using ISE.

TEACHING EXPERIENCE

Summer Orientation Advisor, University of Maryland Baltimore County 2013

- Assisted new students' with questions/concerns, tailored advice accordingly.
- Assisted advisees with developing a course schedule for the upcoming semester.

Teaching Assistant, University of Maryland Baltimore County 2009-2010

- Assisted in preparation/execution of laboratory section for 48 students each semester: Intro to Chemistry Laboratory I & II, Organic Chemistry I Laboratory, graded students quizzes and reports.
- Guided 50 students per section in principles of chemistry in Chemistry Discovery Center.

PROFESSIONAL DEVELOPMENT

Participant: CRNA Hands-on Workshop on X-ray Crystallography, University of Michigan 2014
Performed grid screen for lysozyme crystallization, learned to determine if crystals are protein or salt, processed diffraction data using HKL2000, fitted the protein structure to electron density maps (Coot) and structural validation (Molprobity).

Invited-only participant: Introduction to Phylogenic Inference and RNA Secondary Structure Analysis Workshop, University of Florida 2013
Learned to use MEGA5 software for phylogenetic inference, principles of molecular evolution, and tree-building algorithms.

PUBLICATIONS

Chemistry, T., Szalai, V. A., Shearer, J. M., Callan, P. E. Cu K-edge X-ray Absorption Spectroscopy Reveals Differential Copper Coordination Within Amyloid-β Oligomers Compared to Amyloid-β Monomers. Chem. Comm. 2010, 46, 9137-9139.

Chemistry, T., Bohn, J., Seu, M., Summers, M. Simian Immunodeficiency Virus in Chimpanzees Utilizes an RNA structural switch to regulate its genome packaging. In preparation.

Chemistry, T., Smith, M. The effect of 5' cap in the SIVcpz 5'-Leader RNA dimerization. In preparation.

MEMBERSHIPS

American Association for the Advancement of Science (AAAS) 2011-current
Invited speaker at USA Science & Engineering Festival (2014)

Chemistry-Biology Interface (CBI) - program supported by NIH at UMBC 2010-current

Women in Science and Engineering Graduate Association (WISE) 2010-2011
Vice-president (2011)

American Association of University Women (AAUW) 2010-2011
Vice-president, Education Board - Howard County branch (2011)