

Summer Sivas

ssivas@chem.ucsb.edu

High energy, enterprising professional with track record of integrity and accomplishment in science and business development and seeks unlimited career growth.

SCIENTIFIC ACUMEN • TEACHER – MOTIVATOR – COMMUNICATOR
•PUBLIC RELATIONS and MARKETING SPECIALIST •PROGRAM DEVELOPMENT

EDUCATION

Ph.D., Physical Chemistry, 2006, University of California, Santa Barbara
B.S., Chemistry, 2000, University of California, Santa Barbara

INDUSTRIAL and ACADEMIC EXPERIENCE

Current **POST-DOCTORAL RESEARCH SCIENTIST**

M.T. Bowers Group - University of California, Santa Barbara

- Developed and conduct independent research to analyze biomolecules with *Ion Mobility Mass Spectrometry* and elucidate structural conformers.
- Mentor/manage students in laboratory research and Physical Chemistry and Biotechnology processes.
- Publish research in scientific journals. Assist in writing grant proposals and oral presentations

4/07 – 2/09 **GLOBAL MARKETING TECHNICAL SPECIALIST**

NuSil Technology, Carpinteria, California

- Played a vital role in strengthening Nusil's position as the leading global supplier of silicone materials for healthcare, medical devices, aerospace and aircraft applications.
- Executed sophisticated targeted marketing strategies, including press releases, proposals, technical sales collateral, technical papers, bylined articles, & quarterly newsletters.
- Responsible for bringing Public Relations activities in-house, purchasing integrated PR management program and coordinating training.
- Primary contact for media relations, distributing collateral and managing media contact database.
- Provide sales training and on-site sales support to the total sales channel in order to drive revenue.
- Establish productive partnerships with internal R&D, QA and engineering staff to cultivate unique new market applications for state-of-the-art silicone materials.

5/00 - 4/07 **POST-DOCTORAL RESEARCH SCIENTIST**

M.T. Bowers Group - University of California, Santa Barbara

Analyzed biomolecules with *Ion Mobility Mass Spectrometry* to elucidate structural conformers. Developed protocols for sample preparation. Mentored/managed students in laboratory research. Mentor in students in Physical Chemistry and Biotechnology processes.

TEACHING EXPERIENCE

Physical Chemistry Teaching Assistant, 2001- 2002. Lead two supplementary sections per quarter for Physical Chemistry course, held four hours of office hours per week, solved and created answer key for homework sets each week, graded homework problems each week and short answer exams which required partial credit grading, attended lectures for course.

General Chemistry Laboratory Instructor 2000-2001. Independently lead two laboratory sections (4 hours each) each week for 3 quarters. Typically lectured about half hour on topic and created/graded a quiz each week. Held 2 hour office hours each week to supplement lecture. Grade laboratory reports and lecture exams.

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Chemistry Tutor. Over the last *11 years* assisted high school and college chemistry and math students with homework, study skills, and test preparation. Main goal is to provide a comprehensive understanding of material and develop problem-solving skills to enable the students to succeed on their own with independence on confidence. ~References available upon request.

RELATED EXPERIENCE

Visiting Scientist, Waters-Micromass, R&D Department, U.K., 2005

Professor Carol Robinson, Cambridge University, U.K., 2005/2003

Conduct preliminary experiments on Waters-Micromass Q-TOF Premiere adapted with traveling wave ion guide (TWIG) drift cell prototype instrument.

**Collaborations: Department of Neurology, David Geffen School of Medicine, UCLA
Department of Chemistry and Biochemistry, UCSB**

Top producer, achieved highest score that placed group into the prime 10% of NHI funding.

AWARDS

Recipient of Numerous Awards, Honors and Academic Distinctions:

Willard L. McRary Prize, Distinction in the Major (chosen from 200 candidates)

Twice Received Graduate Student Awards

Science and Engineering Research Grant

ADDITIONAL BACKGROUND

Key strengths:

Practical experience in academic and private industry

Numerous published articles and writings in distinguished scientific journals

Comfortable presenting before groups ranging from 100-1500

COMMUNITY LEADERSHIP

UCSB Chemistry OUTREACH Program 1998 – 2001. The long-range goal of the program is to stimulate an interest to pursue a higher education in science at a UC campus. Helped promote chemistry awareness, provide community service. Lead workshops of exciting hands-on activities in the laboratory to 4&5th graders. One of the approximately thirty initial undergraduates, graduate students, and faculty members to start-up the program.

Childbirth Educator and Labor Assistant. Coach and mentor expecting parents as a childbirth educator and labor assistant. Provide low cost and pro bono care for laboring mothers. Working toward certification with Doulas of North America (DONA).

Marketing/PR Manager, Canine Adoption and Rescue League of Ventura

Senior-level volunteer position, reporting directly to a Board of Directors

PUBLICATIONS

Amyloid- β Protein Oligomerization and the Importance of Tetramers and Dodecamers in the Aetiology of Alzheimer's Disease

Summer L. Bernstein, Nicholas F. Dupuis, Noel D. Lazo, Thomas Wytttenbach, Margaret M. Condrón, Gal Bitan, David B. Teplow, Joan-Emma Shea, Brandon T. Ruotolo, Carol V. Robinson, and Michael T. Bowers

[*Nat. Chem.* **2009**, *1*, 326-331](#)

Amyloid β Protein: A β 40 Inhibits A β 42 Oligomerization

Megan M. Murray, Summer L. Bernstein, Vy Nyugen, Margaret M. Condrón, David B. Teplow, and Michael T. Bowers

[*J. Am. Chem. Soc.* **2009**, *131*, 6316–6317](#)

Amyloid β -Protein: Experiment and Theory on the 21-30 Fragment

Megan M. Murray, Mary Griffin Krone, Summer L. Bernstein, Andrij Baumketner, Margaret M. Condrón, Noel D. Lazo, David B. Teplow, Thomas Wytttenbach, Joan-Emma Shea, and Michael T. Bowers

[*J. Phys. Chem. B* **2009**, *113*, 6041–6046](#)

The Structure of A β 42 C-Terminal Fragments Probed by a Combined Experimental and Theoretical Study

Chun Wu, Megan M. Murray, Summer L. Bernstein, Margaret M. Condrón, Gal Bitan, Joan-Emma Shea, and Michael T. Bowers

[*J. Mol. Biol.* **2009**, *387*, 492-501](#)

Noncovalent Protein Interactions

Summer L. Bernstein and Michael T. Bowers

In [*Protein Mass Spectrometry*](#); Whitelegge, J. P.; Ed.; Comprehensive Analytical Chemistry Elsevier: Amsterdam, 2009; Vol. 52, pp 63-82

Spermine Binding to Parkinson's Protein α -Synuclein and Its Disease-Related A30P and A53T Mutants

Megan Grabenauer, Summer L. Bernstein, Jennifer C. Lee, Thomas Wytttenbach, Nicholas F. Dupuis, Harry B. Gray, Jay R. Winkler, and Michael T. Bowers

[*J. Phys. Chem. B* **2008**, *112*, 11147-11154](#)

Effects of Familial Alzheimer's Disease Mutations on the Folding Nucleation of the Amyloid β -Protein

Mary Griffin Krone, Andrij Baumketner, Summer L. Bernstein, Thomas Wytttenbach, Noel D. Lazo, David B. Teplow, Michael T. Bowers, and Joan-Emma Shea

[*J. Mol. Biol.* **2008**, *381*, 221-228](#)

Elucidating amyloid β -protein folding and assembly: A multidisciplinary approach

D. B. Teplow, N. D. Lazo, G. Bitan, S. Bernstein, T. Wytttenbach, M. T. Bowers, A. Baumketner, J.-E. Shea, B. Urbanc, L. Cruz, J. Borreguero, and H. E. Stanley

[*Acc. Chem. Res.* **2006**, *39*, 635-645](#)

Towards inhibition of amyloid β -protein oligomerization

S. M. Spring, S. L. Bernstein, N. D. Lazo, B. Urbanc, H. E. Stanley, M. T. Bowers, D. B. Teplow, and G. Bitan

In [*Understanding Biology Using Peptides: Proceedings of the 19th American Peptide Symposium, San Diego, California, USA, August 5-9, 2006*](#); S. E. Blondelle, Ed.; American Peptide Symposia Springer Publishing Group: Secaucus, NJ, 2006; Vol. 9, pp 515-516

G-quadruplexes in telomeric repeats are conserved in a solvent-free environment

E. S. Baker, S. L. Bernstein, V. Gabelica, E. De Pauw, and M. T. Bowers

[*Int. J. Mass Spectrom.* **2006**, *253*, 225-237](#)

Characterisation of DEFB107 by mass spectrometry: Lessons from an anti-antimicrobial defensin

B. J. McCullough, H. Eastwood, D. J. Clark, N. C. Polfer, D. J. Campopiano, J. A. Dorin, A. Maxwell, R. J. Langley, J. R.W. Govan, S. L. Bernstein, M. T. Bowers, and P. E. Barran

[*Int. J. Mass Spectrom.* **2006**, *252*, 180-188](#)

Structure of the 21-30 fragment of amyloid β -protein

A. Baumketner, S. L. Bernstein, T. Wytttenbach, N. D. Lazo, D. B. Teplow, M. T. Bowers, and J.-E. Shea
[Protein Sci. 2006, 15, 1239-1247](#)

Amyloid β -protein monomer structure: A computational and experimental study

A. Baumketner, S. L. Bernstein, T. Wytttenbach, G. Bitan, D. B. Teplow, M. T. Bowers, and J.-E. Shea
[Protein Sci. 2006, 15, 420-428](#)

Site-specific dimensions across a highly denatured protein; a single molecule study

E. R. McCarney, J. H. Werner, S. L. Bernstein, I. Ruczinski, D. E. Makarov, P. M. Goodwin, and K. W. Plaxco
[J. Mol. Biol. 2005, 352, 672-682](#)

Structural characterization of G-quadruplexes in deoxyguanosine clusters using ion mobility mass spectrometry

E. S. Baker, S. L. Bernstein, and M. T. Bowers
[J. Am. Soc. Mass Spectrom. 2005, 16, 989-997](#)

Amyloid β -protein: Monomer structure and early aggregation states of A β 42 and its Pro¹⁹ alloform

S. L. Bernstein, T. Wytttenbach, A. Baumketner, J.-E. Shea, G. Bitan, D. B. Teplow, and M. T. Bowers
[J. Am. Chem. Soc. 2005, 127, 2075-2084](#)

α -Synuclein: Stable compact and extended monomeric structures and pH dependence of dimer formation

S. L. Bernstein, D. Liu, T. Wytttenbach, M. T. Bowers, J. C. Lee, H. B. Gray, and J. R. Winkler
[J. Am. Soc. Mass Spectrom. 2004, 15, 1435-1443](#)

The ion mobility mass spectrometry method and its application to duplex formation of oligonucleotides and aggregation of proteins

T. Wytttenbach, E. S. Baker, S. L. Bernstein, A. Ferzoco, J. Gidden, D. Liu, and M. T. Bowers
In [Advances in Mass Spectrometry: Proceedings of the 16th International Mass Spectrometry Conference, Edinburgh, Scotland, UK, August 31-September 5, 2003](#); A. E. Ashcroft, G. Brenton, and J. J. Monaghan, Eds.; Elsevier B. V.: Amsterdam, The Netherlands, 2004; Vol. 16, pp 189-200

Origin of bonding interactions in Cu₂⁺(H₂)_n clusters: An experimental and theoretical investigation

M. J. Manard, J. E. Bushnell, S. L. Bernstein, and M. T. Bowers
[J. Phys. Chem. A 2002, 106, 10027-10032](#)