

# Robert Todd Bronson

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## Education

### **Brigham Young University**, Provo, UT

Ph.D. in Organic Chemistry, December 2003

Dissertation: "Molecular Chemosensors for Heavy Metals: From Synthesis to Reusable Device."

Advisor: Dr. Paul Savage

Committee: Dr. Jerald Bradshaw, Dr. Roger Harrison, Dr. Merritt Andrus, and Dr. Steven Fleming

### **Brigham Young University**, Provo, UT

B. S. in Chemistry, April 1996

Emphasis: Biochemistry

### **Ricks College**, Rexburg, ID

Emphasis: Chemistry (no degree awarded) 1992

## Teaching and Research Experience

### **Assistant Professor**, Brigham Young University

August 2009-Present, Provo, UT

Mainly responsible for organic chemistry laboratory instruction, coordination and development. Teaching responsibilities includes various courses related to organic chemistry including sophomore organic and general organic and biochemistry courses. Serving as the department safety officer.

### **Assistant Professor**, College of Southern Idaho

August 2003-Present, Twin Falls, ID

Responsible for both classroom and laboratory instruction, as well as curriculum development, for sophomore organic chemistry and general organic and biochemistry courses. Implementation and development of the overall departmental student assessment strategy. Planning and supervising honors research projects including grant writing. Maintain instrumentation involved with these courses including: newly updated 60 MHz NMR, GC, and FTIR.

### **Research Assistant**, Brigham Young University

July 1998-August 2003, Provo, UT

Lead researcher of a group consisting of visiting professors, post-doctoral staff, and graduate and undergraduate students in collaboration with several research groups in

analytical, inorganic, and material science chemistry. Researched chemosensor development including: multi-step synthesis, purification, structure elucidation, analysis of photo-physical properties, determination of binding affinities, and surface chemistry. Proficient in the use of a number of instruments including: UV-Vis Spectrophotometer, Fluorometer, GC, FTIR and  $^1\text{H}$  and  $^{13}\text{C}$  NMR.

**Teaching Assistant**, Brigham Young University

Fall 1999, Provo, UT

Supervised undergraduate experiments in organic chemistry lab. Graded lab notebooks and quizzes. Held regular office hours. Evaluated by students, receiving a rating of "excellent".

**Teaching Assistant**, Brigham Young University

Fall 1998, Provo, UT

Held recitation sessions with undergraduates in both introductory and organic chemistry.

**Tutor**, Rick's College, (BYU-Idaho)

Winter 1991 and Fall & Winter 1992, Rexburg, ID

Arranged appointments and aided students in study skills and problem solving. Was often allowed to tutor students outside my emphasis. Tutored subjects including general chemistry, english, history, and physical science.

## Grants, Awards, and Honors

- Pittsburgh Conference Memorial National College Grant \$18,000, 2006
- Invited peer reviewer for the Journal of Organic Letters, 2005
- Invited General Organic and Biochemistry Text Book Reviewer, 2004
- Roland K. Robbins Fellowship Award, Brigham Young University, 2002
- Semi-Finalist Student Entrepreneur of the Year Award, Brigham Young University, 2002
- Finalist Student Entrepreneur of the Year Award, Brigham Young University, 2001
- Research Recognized on the Cover of Journal of Organic Chemistry, July 13, 2001
- Research Fellowship Award, Brigham Young University, 1999
- Graduated Phi Kappa Phi, Brigham Young University, 1996
- Various Academic Scholarships, Rick's College/Brigham Young University, 1987-95

## Publications

Polyelectrolytes as new matrices for secondary ion mass spectrometry. Lua, Y.Y.; Yang, L., Pew, C. A.; Zhang, F.; Fillmore, W. J.; Bronson, R. T.; Sathyapalan, A.; Savage, P. B.; Whittaker, J. D.; Davis, R.C.; Linford, M. R. *J. Am. Soc, Mass Spectrom.* **2005**, *10*, 1575-82.

Efficient immobilization of a cadmium chemosensor in a thin film: generation of a cadmium sensor prototype. Bronson, R. T.; Michaelis, D. J.; Lamb, R. D.; Husseini, G. A.; Farnsworth, P. B.; Linford, M. R.; Izatt, R. M.; Bradshaw, J. S.; Savage, P. B. *Org. Lett.*, **2005**, *7*, 1105-1108.

Origins of 'on-off' fluorescent behavior of 8-hydroxyquinoline containing chemosensors. Bronson, R. T.; Marco Montalti, M.; Prodi, L.; Zaccheroni, N.; Lamb, R. D.; Dalley, K. N.; Izatt, R. M.; Bradshaw, J. S.; Savage, P. B. *Tetrahedron*, **2004**, *60*, 11139-11144.

Characterization of Bis-8-Hydroxyquinoline-Armed Diazatrithia-16-crown-5 and Diazadibenzo-18-crown-6 Ligands as Fluorescent Chemosensors for Zinc. Kawakami, J.; Bronson, R. T.; Xue, G.; Bradshaw, J. S.; Savage, P. B.; Izatt, R. M. *J. Supramol. Chem.*, **2003**, *1*, 221-227.

Analysis of 5-chloro-8-methoxy-2-(bromomethyl)quinoline by XPS. Thomson, J.; Stoker, J.; Bunker, J.; Agbonkonkon, N.; Iyer, G.; Bronson, R. T.; Savage, P. B.; Linford, M. R.; Husseini, G. A. *Surface Science Spectra*, **2002**, *9*, 241-249.

Bis-8-hydroxyquinoline-Armed Diazatrithia-15-crown-5 and Diazatrithia-16-crown-5 Ligands: Possible Fluorophoric Metal Ion Sensors. Bronson, R. T.; Bradshaw, J. S.; Savage, P. B.; Fuangswasdi, S.; Lee, S. C.; Krakowiak, K. E.; Izatt, R. M. *J. Org. Chem.*, **2001**, *66*, 4752-4758. (This article was highlighted on the cover of the Journal of Organic Chemistry on July 13, 2001)

Synthesis of Diazadi(and tri)thiacrown Ethers Containing Two 5-Substituent(or 2-methyl)-8-hydroxyquinoline Side Arms. Bradshaw, J. S.; Song, H.; Xue, G.; Bronson, R. T.; Chira, J. A.; Krakowiak, K. E.; Savage, P. B.; Izatt, R. M. *Supramol. Chem.*, **2001**, *13*, 499-503.

A convenient synthesis and preliminary photophysical study of novel fluoroionophores: macrocyclic polyamines containing two dansylamidoethyl side arms. Xue, G.; Bradshaw, J. S.; Song, H.; Bronson, R. T.; Savage, P. B.; Krakowiak, K. E.; Izatt, R. M.; Prodi, L.; Montalti, M.; Zaccheroni, N. *Tetrahedron*, **2001**, *57*, 87-91.

New Tetraazacrown Ethers Containing Two Pyridine, Quinoline, 8-Hydroxyquinoline or 8-Aminoquinoline Side Arms. Yang, Z.; Bradshaw, J. S.; Zhang, X.; Savage, P. B.; Krakowiak, K. E.; Dalley, N. K.; Su, N.; Bronson, R. T.; Izatt, R. M. *J. Org. Chem.*, **1999**, *64*, 3162-3170.