

# JAMES MIRANDA

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## Education

*Doctor of  
Philosophy*

### **University of California Santa Barbara**

**Chemistry** (Degree Conferred March 2006)

Research Advisor: Dr. R.D. Little

Dissertation Title: "Exploration of Vinylcyclopropane Radical Cyclization-Fragmentation, Indirect Electroreductive Cyclization and Electrohydrocyclization Using Catalytic Reduced Nickel (II) Salen, and Mechanistic Details of Indirect Electroreductive Cyclization Using Catalytic Reduce Nickel (II) Salen"

*Master of  
Science*

### **California State University, Fresno**

**Chemistry** (Degree conferred May 2001)

Research Advisor: Dr. R. Marhenke

Dissertation Title: "Asymmetric Synthesis of 6,7 Epoxycitronellyl Pivalate: Optimizing the Synthesis of the California Red Scale Pheromone"

*Bachelor of  
Science*

### **California Polytechnic State University, San Luis Obispo**

**Biochemistry** (Degree conferred May 1996)

Minor: Philosophy

## Research Experience

### **University of California, Santa Barbara (2001-2006)**

- Investigated the use of catalytic electrogenerated Ni(I) salen in electroreductive cyclization
- Investigated the use of the TMM diradical in the synthesis of a [5.3.0] framework.
- Investigated vinylcyclopropane monoradical rearrangement in the synthesis of 7 and 8 membered ring systems

### **California State University, Fresno (1999-2001)**

- Optimized the synthesis of the California Red Scale Pheromone by use of Jacobsen's catalyst in a key asymmetric step.

## Work Experience

*Lecturer*

### **California State University, Fresno (1/06 – 05/06)**

- Instructor of undergraduate organic chemistry lecture, organic chemistry lab, general chemistry lab
- Instructor of graduate advanced research techniques
- Mentored undergraduate student research

- Part-Time Lecturer* **California State University, Channel Islands** (8/05 – 12/05)  
‣ Instructor of undergraduate general chemistry laboratories
- NMR Teaching Assistant* **University of California, Santa Barbara** (1/05 – 12/05)  
‣ Responsible for daily maintenance of  $^1\text{H}$  NMR 200 MHz,  $^1\text{H}$  NMR 400 MHz,  $^1\text{H}$  NMR 500 MHz (included  $\text{N}_2$  fills and He fills)  
‣ Trained new users on proper operation of NMR machines
- Teaching Assistant* **University of California, Santa Barbara** (8/01 - 12/04)  
‣ Instructor of undergraduate general and organic chemistry laboratories  
‣ Development, administration, and grading of weekly quizzes
- Teaching Assistant* **California State University, Fresno** (8/99 - 8/01)  
‣ Instructor of undergraduate general chemistry laboratories
- Chemist* **American Peptide Company**, Sunnyvale, CA (1/99 - 8/99)  
Unit I (Research and Development Division)  
‣ Responsible for solution phase synthesis of specially modified amino acids.  
‣ Developed new techniques for the synthesis of unusual amino acids.  
‣ Purified all synthesis products when required utilizing flash chromatography and HPLC.  
‣ Maintained a detailed laboratory notebook on all syntheses, provided periodic summary reports on projects.
- Chemist* **American Peptide Company**, Sunnyvale, CA (8/96 - 8/98)  
Unit II (Manufacturing Division)  
‣ Responsible for solid phase synthesis of biologically active peptides from amino acids using Fmoc and *t*-Boc protecting group strategies.  
‣ Synthesized the peptides using both PTI automated synthesizer and manual synthesis.  
‣ Analyzed all in-house synthesized peptides (from synthesis and purification sections) for mass spectrometry using Kratos MALDI II .  
‣ Analyzed all external peptide samples from APC's mass spectrometry service.  
‣ Administered APC's website (<http://www.americanpeptide.com>) as webmaster.

## Publications and Awards

- **Miranda, J.A.**; Wade, C.J.; Little, R.D. "Indirect Electroreductive Cyclization and Electrohydrocyclization Using Catalytic Reduced Nickel (II) Salen", *J. Org. Chem.*, **2005**, *70*(20), 8017.
- Russu, W.A.; Wang, V.R.; Villalon, V.P.; **Miranda, J.A.**; Little, R.D. "Inter- and Intramolecular [4+3] Cycloaddition to TMM-Diradicals", *Tetrahedron Lett.* **2002**, *43*, 8459.

- ▶ Leon, D.; Uridil, S.; **Miranda, J.** “Structural Analysis and Modeling of proteins on the Web: an investigation for biochemistry undergraduates”, *Journal of Chemical Education* **1998**, 75(6), 731-734.
- ▶ **Miranda, J.**; Wade, C, ; Little, R.D. “Indirect intramolecular electroreductive cyclization using catalytic Ni (I) salen”. Presented at the 229<sup>th</sup> meeting of the American Chemical Society, San Diego, CA, March 2005.
- ▶ **Miranda, J.**; Wade, C, ; Little, R.D. “Indirect intramolecular electroreductive cyclization using catalytic Ni (I) salen”. Presented at the 207<sup>th</sup> meeting of the Electrochemical Society, Quebec City, Canada, May 2005.
- ▶ 2005-06 Brython Davis Fellowship (UCSB)
- ▶ 2004-05 Graduate Student Travel Grant (UCSB)
- ▶ 2001 California Graduate Equity Fellowship (CSU, Fresno)
- ▶ 2000 Faculty Sponsored Research Award (CSU, Fresno)