

# MATTHEW R. HARTINGS, PH.D.

American University  
Department of Chemistry  
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Washington, DC 20016

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## EXPERIENCE AND EDUCATION

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AMERICAN UNIVERSITY AUGUST 2010-PRESENT  
Assistant Professor, Department of Chemistry

CALIFORNIA INSTITUTE OF TECHNOLOGY 2005-2010  
NIH Ruth Kirchstein NRSA Postdoctoral Fellow  
Advisor: Harry B. Gray  
Research: Probing intra- and intermolecular protein interactions with inorganic molecules

NORTHWESTERN UNIVERSITY 2000-2005  
Ph.D. in Chemistry  
Advisors: Mark A. Ratner and Thomas J. Meade  
Thesis title: "Electrostatic effects in biological molecules: Secondary structure formation in unsolvated peptides and electrochemical properties of a modified ligand-receptor pair"

SANDIA NATIONAL LABORATORY 1998  
Research Intern (May thru December)  
Advisor: Scott E. Bisson

UNIVERSITY OF DAYTON 1996-2000  
B.S. in Chemistry and Physics (*Magna Cum Laude*)

## TEACHING EXPERIENCE

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AMERICAN UNIVERSITY  
CHEM571 Experimental Biological Chemistry (Fall 2011)  
CHEM552 Advanced Inorganic Chemistry (Spring 2011)  
CHEM110 General Chemistry (Fall 2010)  
CHEM100 The Chemistry of Cooking (Spring 2011, Fall 2011)

NORTHWESTERN UNIVERSITY  
Senior Physical Chemistry Laboratory (Spring 2001)  
Advanced General Chemistry Laboratory (Fall 2000, Spring 2001)

## PUBLICATIONS

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### Academic

- **HARTINGS, MATTHEW R.**; Fahy, D. Communicating Chemistry for Public Engagement *Nature Chemistry* **2011**, *3*, 674-677.
- **HARTINGS, MATTHEW R.**; Kurnikov, Igor V.; Dunn, Adam R.; Winkler, Jay R.; Gray, Harry B.; Ratner, Mark A. Electron tunneling through sensitizer wires bound to proteins *Coordination Chemistry Reviews* **2010**, *245(3-4)*, 248-253.
- Barker, Kylie D.; Eckermann, Amanda L.; Sazinsky, Matthew H.; **HARTINGS, MATTHEW R.**; Abajian, Carnie; Georganopoulou, Dmitra; Ratner, Mark A.; Rosenzweig, Amy C.; Meade, Thomas J. Protein binding and the electronic properties of iron(II) complexes: an electrochemical and optical investigation of outer sphere effects *Bioconjugate Chemistry* **2009**, *20(10)*, 1930-1939.
- **HARTINGS, MATTHEW R.**, Gray, Harry B.; Winkler, Jay R. Probing melittin helix-coil equilibria in solutions and vesicles. *Journal of Physical Chemistry B*. **2008**, *112*, 3202-3207.
- Eckermann, Amanda L.; Barker, Kylie; **HARTINGS, MATTHEW R.**; Ratner, Mark A.; Meade, Thomas J. Synthesis and electrochemical characterization of a transition-metal-modified ligand-receptor pair. *Journal of the American Chemical Society* **2005**, *127*, 11880-11881.
- Damsbo; Martin; Kinnear, Brian S.; **HARTINGS, MATTHEW R.**, Ruhoff, Peder T.; Jarrold, Martin F.; Ratner, Mark A. Application of evolutionary algorithm methods to polypeptide folding: Comparison with experimental results for unsolvated Ac-(Ala-Gly-Gly)<sub>5</sub>-Lys+H<sup>+</sup>. *Proceedings of the National Academy of Sciences* **2004**, *101*, 7215-7222.
- **HARTINGS, MATTHEW R.**; Kinnear, Brian S.; Jarrold, Martin F. The energy landscape of unsolvated peptides: the role of context in the stability of alanine/glycine helices. *Journal of the American Chemical Society* **2003**, *125*, 3941-3947.
- Kinnear, Brian S.; **HARTINGS, MATTHEW R.**; Jarrold, Martin F. The energy landscape of unsolvated peptides: helix formation and cold denaturation in Ac-Ala<sub>4</sub>Gly<sub>7</sub>-Ala<sub>4</sub>+H<sup>+</sup>. *Journal of the American Chemical Society* **2002**, *124*, 4422-4431.
- Kinnear, Brian S.; **HARTINGS, MATTHEW R.**; Jarrold, Martin F. Helix unfolding in unsolvated peptides. *Journal of the American Chemical Society* **2001**, *123*, 5660-5667.
- Bisson, Scott E.; Armstrong Karla M.; Kulp, Thomas J.; **HARTINGS, MATTHEW R.** Broadly tunable, mode-hop-tuned cw optical parametric oscillator based on periodically poled lithium niobate *Applied Optics* **2001**, *40(33)*, 6094-6055.
- Oomens, Jos; Bisson, Scott E.; **HARTINGS, MATTHEW R.** ; Kulp, Thomas J.; Harren, Frans J. M. New laser sources for photoacoustic trace gas detection with applications in biomedical science. *Proceedings SPIE (Biomedical Optoacoustics)* Ed. Oraevsky, AA **2000**, *1(10)*, 295-300.

### Non-academic

- “Cooking up some chemistry inside of cells” Scientific American Guest Blog August 2<sup>nd</sup>, 2011 <http://blogs.scientificamerican.com/guest-blog/2011/08/02/cooking-up-some-chemistry-inside-a-cell/>

## AWARDS AND FUNDING

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- 2011 NASA DC Space Consortium Grant
- 2011 American University Faculty Research Development Grant
- 2010 American University Startup Funding
- 2006 NIH Ruth Kirchstein NRSA Postdoctoral Fellowship

## PRESENTATIONS

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### INVITED LECTURES:

- Lehigh University Seminar (December 2009)
- Hope College, Chemistry Seminar (November 2009)
- Vermont University, Chemistry Seminar (January 2009)
- Marquette University, Chemistry Seminar (January 2009)
- Ohio University, Chemistry Seminar (December 2008)
- Pittsburgh University, Chemistry Seminar (December 2008)
- Case Western Reserve University, Chemistry Seminar (January 2007)
- Rice University, Chemistry Seminar (January 2007)
- California Institute of Technology, Inorganic Organometallic Chemistry Seminar (November 2006)
- Northwestern University, Thesis Seminar (May 2005)
- California Institute of Technology, Chemistry Seminar (March 2005)
- Northwestern University, Physical/Analytical Chemistry Seminar (March 2005)

### CONFERENCE PRESENTATIONS

- International Conference of Bioinorganic Chemistry (August 2011)
- American Chemical Society National Conference, Fall (lecture) (August 2009)
- International Conference on Bioinorganic Chemistry (July 2009)
- American Chemical Society National Conference, Fall (lecture and poster) (August 2007)
- American Chemical Society National Conference, Fall (poster) (August 2006)
- Gordon Research Conference on Protein Folding Dynamics (poster) (January 2006)
- 7<sup>th</sup> Molecular Scale Electronics Meeting (poster) (January 2005)
- American Chemical Society National Conference, Fall (poster) (August 2004)
- Gordon Research Conference on Electron Donor Acceptor Interactions (poster) (August 2004)
- Gordon Research Conference on Protein Folding Dynamics (poster) (January 2001)
- Gordon Research Conference on Biomolecules in the Gas Phase (poster) (August 2000)

## PROFESSIONAL ASSOCIATIONS

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- American Chemical Society
- American Association for the Advancement of Sciences
- Society for Bioinorganic Chemistry

## COMMUNITY OUTREACH

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- Chemistry blogger at [sciencegeist.net](http://sciencegeist.net)
- General lecture titled, “Nano 101” given to several high school and senior citizen groups (2004-2005)