# *Curriculum Vitae*
# Assistant Professor Amanda L. Eckermann

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## Education

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| California Institute of Technology | Chemistry | B.S., 1997 |
| University of Illinois, Urbana-Champaign | Chemistry | Ph.D., 2002 |

## Positions Held

Assistant Professor of Chemistry, Hope College, 2013-present.
Research Associate Professor, Northwestern University, 2012-2013.
Research Assistant Professor, Northwestern University, 2009-2012.
Postdoctoral Fellow, Northwestern University, 2003-2009.
Teaching Assistant, Department of Chemistry, University of Illinois, 1997-2002.

## Courses Taught

General Chemistry I, General Chemistry Laboratory I, General Chemistry II, Analytical Chemistry, Analytical Chemistry Laboratory, Inorganic Chemistry, Inorganic Chemistry Laboratory.

## Undergraduate Research Students

20 students have been mentored in independent laboratory research since 2013; 14 female; 3 underrepresented minorities

## Oral presentations (Undergraduate Research Students*) (7)

1.) Eckermann, Amanda L.; Gillmore, Jason G.; Shorb, Justin. "The use of Raman spectroscopy in upper-division inorganic and spectroscopy courses" Biennial Conference on Chemical Education, Notre Dame, IN, July 29 - August 2, 2018, 851.

2.) Eckermann, Amanda L.; Washburn, Anna*; Libson, Karissa* "Synthesis and leaching of strontium-doped hydroxyapatite" Abstracts of Papers, 255th ACS National Meeting & Exposition, New Orleans, LA, March 18-22, 2018, INOR-1365.

3.) Eckermann, Amanda L. Washburn, Anna*; Libson, Karissa* "Synthesis and leaching of strontium-doped hydroxyapatite nanoparticles" Fall Conference of the Michigan Space Grant Consortium, Ann Arbor MI, November 11, 2017

4.) Eckermann, Amanda L. Miller, Lyndsy*; Kennington, Lauren*; Wisniewski, Luke* "Glucose thiolate-bridged complexes of ($\eta^6$-cymene) ruthenium" 8th International Symposium on Bioorganometallic Chemistry, Moscow, Russia. September 4-8, 2016.

5.) Eckermann, Amanda L. "~~True stories~~ Stories of Truth from the Lab" Continuum Scholars presentation, Hope College, March 29, 2016.

6.) Eckermann, A. L.; Feld, D. J.; Scott, A. M.; Wasielewski, M. R.; Meade, T. J. "Kinetics of ground-state electron transfer through DNA" Abstracts of Papers, 242nd ACS National Meeting, Denver, CO, 2011 INOR-310.

7.) Eckermann, A. L.; Wunder, M.; Fenske, D.; Rauchfuss, T. B.; Wilson, S. R. "The Chevrel cluster $Ru_6S_8(PPh_3)_6$ and a related cluster $Ru_4S_6(PPh_3)_4$" Abstracts of Papers, 223rd ACS National Meeting Orlando, FL, April 7-11, 2002 INOR-375.

**External poster presentations by undergraduate researchers (4)**

1.) Miller, Lyndsy*; Kennington, Lauren*; Wisniewski, Luke*; Burnatowska-Hledin, Maria; Eckermann, Amanda L. "Glycoconjugates of organometallic ruthenium-arene complexes" Abstracts of Papers, 253rd ACS National Meeting & Exposition, San Francisco, CA, United States, April 2-6, 2017 (2017), INOR-931.

2.) Glover, Morgan J.*; SantaLucia, Daniel J*.; Eckermann, Amanda L. "Mixed-valence triruthenium clusters with hydrophobic ligands" Abstracts of Papers, 251st ACS National Meeting & Exposition, San Diego, CA, United States, March 13-17, 2016, INOR-808.

3.) SantaLucia, Daniel*; Washburn, Anna*; Rechenbach-Chapman, Lauren*; Tan, Regina*; Lapi, Suzanne; Eckermann, Amanda L. "Doped hydroxyapatite nanoparticles as scaffolds for multimodal imaging" Abstracts of Papers, 250th ACS National Meeting & Exposition, Boston, MA, United States, August 16-20, 2015, INOR-209.

4.) Hsu, H.*; Feld, D. J.; Eckermann, A. L.; Meade, T. J. "Weak interactions of ligand-receptor binding events: Electron transfer of protein-bound transition metals" Abstracts of Papers, 243rd ACS National Meeting & Exposition, 2012 INOR-861.

**Publications (Undergraduate Research Students*) (25)**

1.) "Chemical strategies for the development of multimodal imaging probes using nanoparticles" Eckermann, Amanda L.; Mastarone, Daniel J.; Meade, Thomas J. Edited by Long, Nicholas; Wong, Wing-Tak Chemistry of Molecular Imaging (2015), 355-387, 5 plates.

2.) Carney, Christiane E.; Lenov, Ivan L.; Baker, Catherine J.; MacRenaris, Keith W.; Eckermann, Amanda L.; Sligar, Stephen G.; Meade, Thomas J. "Nanodiscs as a Modular Platform for Multimodal MR-Optical Imaging" *Bioconjugate Chemistry* (2015), 26(5), 899-905.

3.) Heffern, M. C.; Velasco, P. T.; Matosziuk, Lauren M.; Coomes, Joseph L.*; Karras, Constantine*; Ratner, Mark A.; Klein, William L.; Eckermann, Amanda L.; Meade, Thomas J. "Modulation of Amyloid-β Aggregation by Histidine-Coordinating Cobalt(III) Schiff Base Complexes " *ChemBioChem* (2014), 15(11), 1584-1589.

4.) Manus, L. M.; Holbrook, R. J.; Atesin, T. A.; Heffern, M. C.; Harney, A. S.; Eckermann, A. L.; Meade, T. J. "Axial Ligand Exchange of N-heterocyclic cobalt(III) Schiff base complexes." *Inorg. Chem.* (2013), 52(2), 1069-1076.

5.) Heffern, M. C.; Yamamoto, N.; Holbrook, R. J.; Eckermann, A. L.; Meade, T. J. "Cobalt Derivatives as Promising Therapeutic Agents." *Curr. Opin. Chem Biol*. (2013), 17(2), 189-196.

6.) Velasco, P.T.; Heffern, M. C.; Sebollela, A.; Popova, I.; Lacor, P. N.; Lee, K.B.; Sun, X.; Tiano, B. N.; Viola, K. L.; Eckermann, A. L.; Meade, T.J.; Klein, W.L. "Synapse-binding subpopulations of AB oligomers sensitive to peptide assembly blockers and scFv antibodies" *ACS-Chemical Neuroscience*. (2012), 3(11), 972-98.

7.) Feld, D. J.; Hsu, H.-T.*; Eckermann, A. L.; Meade T., J. "Trinuclear Ruthenium Clusters as Bivalent Electrochemical Probes for Ligand-Receptor Binding Interactions" *Langmuir* (2012), 28 (1), 939–949.
8.) Manus, L.M., Strauch, R., Hung, A.; Eckermann, A.L. Meade, T.J. "Analytical Methods for Characterizing Magnetic Resonance Probes" " *Anal. Chem.* (2012), 84 (15), 6278-6287. *(Invited Feature, Cover Article)*.
9.) Mastarone, D.J., Harrison, V.S.R, Eckermann A.L., Parigi, G., Luchinat, C., Meade T.J. "A Modular System for the Synthesis of Multiplexed Magnetic Resonance Probes." *J. Am. Chem. Soc*. (2011), 133(14), 5329-37.
10.) Sweeney, C.M., Nehl C.L., Hasan W., Liang T., Eckermann A.L., Meade T.J., Odom T.W. A three-channel spectrometer for wide-field imaging of anisotropic plasmonic nanoparticles. *J Phys Chem C.* (2011), 115(32), 15933-15937.
11.) Schultz-Sikma, E.A., Joshi, H.M., Ma Q., MacRenaris, K.W., Eckermann, A.L., Dravid, V.P., Meade, T.J. "Probing the chemical stability of mixed ferrites: Implications for magnetic resonance contrast agent design." *Chem. Mater.*(2011), 23(10), 2657-64.
12.) Eckermann, A. L., Shaw, J. A., Meade, T. J. "Kinetic Dispersion in Redox Active Dithiocarbamate Monolayers." *Langmuir*, (2010), 26(4), 2904-2913.
13.) Eckermann, A. L., Feld, D., Shaw, J. A., Meade, T. J. "Electrochemical Determination of Electron Transfer Parameters in Self-assembled Monolayers." *Coord. Chem. Rev.*, (2010), 254(15-16),1769-802.
14.) Hu, F., MacRenaris, K. W., Waters, E. A., Schultz-Sikma, E. A., Eckermann, A. L., Meade, T. J. "Highly Dispersible, Superparamagnetic Magnetite Nanoflowers for Magnetic Resonance Imaging." *Chem. Comm*, (2010), 46(1), 73-75.
15.) Barker, K. D., Eckermann, A. L., Sazinsky M. H., Hartings, M. R., Abajian,C., Georganopoulou, D. G., Ratner, M. A., Rosenzweig,A. C., Meade, T. J. "Protein Binding and the Electronic Properties of Iron (II) Complexes: An Electrochemical and Optical Investigation of Outer Sphere Effects." *Bioconj. Chem*. (2009), *20* (10),1930–1939.
16.) Hu, F., MacRenaris, K. W., Liang, T., Waters, E. A.., Schultz-Sikma, E. A., Eckermann, A. L., Meade, T. J. "Ultrasmall Magnetite Nanoparticles with High Relaxivity for Cellular Imaging." *J. Phys. Chem. C*, (2009) 113(49), 20855-20860.
17.) Bertin, P. A., Georganopoulou, D., Liang, T., Eckermann, A. L., Wunder, M., Ahrens, M. J., Blackburn, G. F., Meade, T. J. "Electroactive Self-Assembled Monolayers on Gold via Bipodal Dithiazepane Anchoring Groups." *Langmuir*, (2008), *24*, 9096-9101.
18.) Urbanczyk-Pearson, L. M., Femia, F. J., Smith, J., Parigi, G., Duimstra, J. A., Eckermann, A. L., Luchinat, C., Meade, T. J. "Mechanistic Investigation of beta -Galactosidase-Activated MR Contrast Agents." *Inorg.Chem.*, (2008), *47*, 56-68.
19.) Wang, P., Miller, J. E., Henling, L. M., Stern, C. L., Frank, N. L., Eckermann, A. L., Meade, T. J. "Synthesis and Characterization of Ruthenium and Rhenium Nucleosides." *Inorg.Chem.* (2007*), 46*, 9853-9862.
20.) Eckermann, A. L., Barker, K., Hartings, M., Ratner, M., Meade, T. J. "Synthesis and Electrochemical Characterization of a Transition Metal-Modified Ligand-Receptor Pair." *J. Am. Chem. Soc.,* (2005), 127(34), 11880-11881.
21.) Wunder, M., Eckermann, A. L., Rauchfuss, T. B., Fenske, D. "Syntheses and crystal structures of new sulfido-bridged ruthenium clusters." *Zeitschr. Anorg. Allgem. Chemie*, (2005), 631(1),131-134.

22.) Zimmermann, C., Anson, C.E., Eckermann, A. L., Wunder, M., Fischer, G., Keilhauer, I., Herrling, E., Pilawa, B., Weigand, F., Dehnen, S. "Syntheses of the 47 Electron Clusters $[(Cp^*Fe)_3(\mu_3\text{-}X)_2]$ (X = S, Se) and the First Fe/Sn/Se Heterocubane Cluster $[(Cp^*Fe)_3(SnCl_3)(\mu_3\text{-}Se)_4]\cdot$DME by the Use of Chalcogenostannate Salts." 2004, *Inorg.Chem.*, 43(15), 4595-4603.

23.) Eckermann, A. L.; Meade, T. J. "Azidoruthenium(III) complexes as precursors for molecular nitrogen and nitrene complexes" *Chemtracts* 2004, *17*, 523.

24.) Eckermann, A. L., Wunder, M., Fenske, D., Rauchfuss, T. B., Wilson, S. R. "New Class of Ruthenium Sulfide Clusters: $Ru_4S_6(PPh_3)_4$, $Ru_5S_6(PPh_3)_5$, and $Ru_6S_8(PPh_3)_6$." 2002, *Inorg.Chem.*, 41(8), 2004-2006.

25.) Eckermann, A. L., Fenske, D., Rauchfuss, T. B., "Syntheses of Ru-S Clusters with Kinetically Labile Ligands via the Photolysis of $[(cymene)_3Ru_3S_2](PF_6)_2$." 2001, *Inorg.Chem.*, *40*(7), 1459-1465.

**Patents (2)**

1.) Eckermann, A. L., Ahrens, M., Bertin, P., Georganopoulou, D., Gray, H.B., Meade, T.J., Wunder, M. F. "Novel Chemistry Used in Biosensors." Application No. 12/253,875 (filed October 17, 2008)

2.) Eckermann, A.L., Barker, K.D., Meade, T.J. "Compositions and methods for electrochemical analyte detection of proteins using transition metal complexes." U.S. Pat. Appl. Publ. 2006, 26 pp. Application: US 2005-125982 20050510.

**Poster presentations (11)**

1.) Eckermann, Amanda L.; Miller, Lyndsy A*.; Chamberlain, Carmen*; Drust, Vanessa*; Davenport, Cydney "Synthesis and characterization of hydrophobic $[(\eta^6\text{-arene})Ru(L)Cl_2$ complexes" Abstracts of Papers, 255th ACS National Meeting & Exposition, New Orleans, LA, United States, March 18-22, 2018 (2018), INOR-275.

2.) Mastarone, D. J.; Kohlmeir, E. K.; Harrison, V. S.; Eckermann, A. L.; Parigi, G.; Luchinat, C.; Meade, T. J. "Multiplexed Magnetic Resonance Probes for the Tracking of Cells In Vivo" Abstracts, 42nd Central Regional Meeting of the American Chemical Society, 2011 CERM-206.

3.) Wang, P.; Vega, A. M.; Eckermann, A. L.; Wasielewski, M. R.; Meade, T. J. "Kinetics of ground-state electron transfer through DNA" Abstracts of Papers, 235th ACS National Meeting 2008 INOR-1036.

4.) Shaw, J. A.; Eckermann, A. L.; Kurnikov, I. V.; Meade, T. J.; Ratner, M. A. "Calculation of reorganization energy and electron transfer rate changes upon binding of a ligand receptor pair" Abstracts of Papers, 236th ACS National Meeting 2008 INOR-140.

5.) Eckermann, A. L.; Barker, K. D.; Feld, D. J.; Meade, T. J. "Outer sphere effects of ligand-receptor binding on electrochemical probes" Abstracts of Papers, 236th ACS National Meeting 2008 INOR-154.

6.) Eckermann, A. L.; Meade, T. J. "Electrochemical studies of ruthenium ammine complexes attached via short dithiocarbamates to gold electrodes" Abstracts of Papers, 233rd ACS National Meeting 2007 INOR-823.

7.) Barker, K. D.; Eckermann, A. L.; Georganopoulou, D.; Meade, T. J. "Electrochemical probes of weak interactions in ligand-receptor pairs" Abstracts of Papers, 233rd ACS National Meeting 2007 INOR-829.

8.) Eckermann, A. L.; Georganopoulou, D.; Kylie, B.; Meade, T. J. "Electrochemical probes for ligand-receptor binding" Abstracts of Papers, 232nd ACS National Meeting 2006 INOR-196.

9.) Eckermann, A. L., Barker, K., Hartings, M., Ratner, M., Meade, T. J. "Modification of a ligand-receptor pair for electron-transfer." 2005, ICBIC, Ann Arbor, MI.

10.) Barker, K.; Eckermann, A. L.; Hartings, M.; Ratner, M. A.; Meade, T. J. "Transition metal redox-active probes for investigating ligand-receptor energetics" Abstracts of Papers, 230th ACS National Meeting 2005 INOR-382.

11.) Eckermann, A. L.; Barker, K.; Hartings, M.; Ratner, M.; Meade, T. J. "Solvent reorganization energy as a probe for ligand-receptor binding" Abstracts of Papers, 228th ACS National Meeting 2004 INOR-507.

## Grants, Fellowships, and Awards

**Ruth L. Kirschstein National Research Service Award (2006-2007)**

**Continuum Scholars 2015-2016**

**NASA Michigan Space Grant**
(2016-2017)-$10,000.
*Principle Investigator:* ***Doped Hydroxyapatite Nanoparticles for Osteoporosis Treatment and Imaging***

**Jacob E. Nyenhuis Faculty Development Grant**
(2016-2017)-$10,800.
*Principle Investigator:* ***Targeted antiproliferative ruthenium complexes***