Michael W. Ambrogio

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EDUCATION

Northwestern University (GPA: 3.5/4.0) **Evanston, IL**
Doctor of Philosophy *May 23, 2012*
- Studied Organic Chemistry, with a focus on Nanotechnology

Kellogg School of Management (GPA: N/A) **Evanston, IL**
Completed "Management for Scientists and Engineers" certificate program *Summer 2011*
- Learned fundamentals of accounting, finance, and product commercialization

Miami University (GPA: 3.2/4.0) **Oxford, OH**
Bachelor of Science *Spring 2007*
- Major: Chemistry

ANALYTICAL SKILLS

- Design and execution of organic, inorganic, and organometallic synthetic procedures
- Synthesis and characterization of nanoparticles with highly specific morphologies and dimensions
- Experienced in developing / optimizing novel catalytic systems and methodologies in an industrial setting
- Highly proficient in the operation and interpretation of SEM, XPS, ToF-SIMS, DLS, FT-IR, and HPLC
- Technically adept at synthetic organic characterization techniques; including NMR, GC-MS, and UV-Vis
- Performing in-depth reviews of scientific literature using databases such as SciFinder and Reaxys
- Writing grants / leading grant-writing teams to obtain funding for scientific research

RELEVANT EXPERIENCE

Northwestern University **Evanston, IL**
Research Associate *2012–present*
- Currently employed by the NU*ANCE* Center (Keck-II Facility) at Northwestern University
- Perform maintenance and train new users on five separate instruments within the Keck-II Facility
- Expert on the use, operation, and processing / interpretation of data from XPS and ToF-SIMS
- Designed new analytical methods to fully characterize nanoparticle-based drug delivery systems

Graduate Student Researcher / Postdoctoral Fellow *2007–2012*
- Advisor: Professor Sir J. Fraser Stoddart
- Developed drug delivery systems to selectively release drugs / imaging agents in biological tissue
- Synthesized various mesoporous silica nanoparticles and an array of organic compounds
- Collaborated with researchers at UCLA, Notre Dame, NU Feinberg School of Medicine
- Responsible for function / maintenance of peptide synthesizer and centrifuge in Stoddart lab
- Reviewed 12 separate manuscripts for acceptance in peer-review scientific journals
- Produced 2 grant applications that were approved for funding:
  - $930,000 from King Abdulaziz City for Science and Technology (KACST) in Saudi Arabia
  - $52,500 from the NU Center of Cancer Nanotechnology Excellence (NU-CCNE)

Teaching Assistant *2007–2008*
- Oversaw educational organic chemistry lab sections containing 18-24 pre-med students
- Supervised and instructed students during lab sessions; tutored students outside of lab
- Evaluated student performance by designing and administering lab reports and quizzes

Research Assistant *Summer 2007*
- Participated in organic chemistry research projects with Professor Regan Thomson
- Designed new synthetic methodologies with the aim of producing natural products
- Implemented layout for newly acquired laboratory space

Amgen, Inc. **South San Francisco, CA**
Graduate Student Intern *Summer 2009*

- Executed over 150 experiments toward the development of biologically active compounds
- Actively engaged in project meetings spanning several scientific disciplines
- Obtained unique perspective of the operations and goals of a large pharmaceutical company

Miami University **Oxford, OH**
Undergraduate Research Assistant *2004–2007*

- Designed, synthesized, and characterized MOF compounds in the lab of Professor Hongcai Zhou
- Utilized a combinatorial approach to produce novel porous crystalline materials for gas storage

LEADERSHIP EXPERIENCE

Chicago Coatings Group, LLC – Project Manager / Chemist *February–November 2012*

- Helped to establish a technical consulting start-up and ensure it is a lasting organization
- Actively marketed the company, resulting in several new clients and thousands of dollars in sales
- Routinely prepared proposals, conducted research, and issued reports to clients; under tight deadlines

Stoddart Research Group (NU) – Drug Delivery Sub-Group Leader *2009–2012*

- Initiated collaborations with researchers spanning various scientific disciplines at multiple institutions
- Identified and secured funding opportunities to perform research related to drug delivery
- Trained new group members on laboratory techniques and supervised their research projects
- Presented latest findings to external audiences and visiting professors

Delta Upsilon Fraternity – Alumni Chairman *2004–2005*

- This an elected position within Delta Upsilon fraternity, voted on by ~80 active chapter members
- Produced and distributed *The Open Visor*, a semi-annual alumni newsletter
- Kept alumni informed regarding current events occurring within the fraternity and on campus

SELECTED EXTERNAL PRESENTATIONS (3 OF 6)

[1] "Mechanized Silica Nanoparticles: A New Frontier in Theranostic Nanomedicine"
Presented at 6th ISMSC in Brighton, UK, July 2011

[2] "Controlled Release from Mesoporous Silica Nanoparticles"
Presented at 8th FNANO Meeting in Snowbird, UT, April 2011.

[3] "Snap-Top Nanocarriers"
Presented at the 239th ACS National Meeting in San Francisco, CA, March 2010.

SELECTED PUBLICATIONS (6 OF 14)

[1] Ambrogio, M. W.; Frasconi, M.; Yilmaz, M. D.; Chen, X. "New Methods for Improved Characterization of Silica Nanoparticle-Based Drug Delivery Systems" *Manuscript in preparation*, **2013**.

[2] Wang, C.; Li, Z.; Cao, D.; Zhao, Y.-L.; Gaines, J. W.; Bozdemir, O. A.; Ambrogio, M. W.; Frasconi, M.; Botros, Y. Y.; Zink, J. I.; Stoddart, J. F. "Stimulated Release of Size-Selected Cargos in Succession from Mesoporous Silica Nanoparticles" *Angew. Chem. Int. Ed.* **2012**, *51*, 5460–5465.

[3] Ambrogio, M. W.; Thomas, C. R.; Zhao, Y.-L.; Zink, J. I.; Stoddart, J. F. "Mechanized Silica Nanoparticles: A New Frontier in Theranostic Nanomedicine" *Acc. Chem. Res.* **2011**, *44*, 903–913.

[4] Ambrogio, M. W.; Pecorelli, T. A.; Patel, K.; Khashab, N. M.; Trabolsi, A.; Khatib, H. A.; Botros, Y. Y.; Zink, J. I.; Stoddart, J. F. "Snap-Top Nanocarriers" *Org. Lett.* **2010**, *12*, 3304–3307.

[5] Cotí, K. K.; Belowich, M. E.; Liong, M.; Ambrogio, M. W.; Lau, Y. A.; Khatib, H. A.; Zink, J. I.; Khashab, N. M.; Stoddart, J. F."Mechanised Nanoparticles for Drug Delivery" *Nanoscale* **2009**, *1*, 16–39.

[6] Ma, S.; Sun, D.; Ambrogio, M. W.; Fillinger, J.; Parkin, S.; Zhou, H. "Framework-Catenation Isomerism in MOFs and Its Impact on Hydrogen Uptake," *J. Am. Chem. Soc.* **2007**, *129*, 1858–1859.