**Michael A. Boles**

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**EDUCATION**

**University of Chicago**, Chicago, Illinois  
*M.S., Ph.D. in Chemistry* GPA: 3.72/4, **2016**   
McCormick Fellow, ACS Spotlight, ACS Editor’s Choice, Best Talk Award

**University of North Carolina**, Chapel Hill, North Carolina   
*B.S. in Chemistry* *with Distinction* GPA: 3.64/4, GRE: 780/720/710 (Q/A/V) **2010**   
Honors College (top 10% of class), Dean’s List, UNC Distinguished Scholar, Coca-Cola Scholar

**PROFESSIONAL EXPERIENCE**

**Stanford University**, Dreyfus Postdoctoral Fellow in Chemistry, Stanford, California **2016 - present**

* Expanded “green” photovoltaic technology by developing new chemical approaches to reduce energy intensity of solar cell production and to avoid toxic elements that may do ecological harm upon escaping the module
* Completed graduate course on science and entrepreneurship, learned basics of financing young companies including revenue forecasting, cost of capital, and evaluating the exit potential of a business

**University of Chicago**, Research and Teaching Assistant in Chemistry, Chicago, Illinois **2010 - 2016**

* Elucidated the role of particle surfaces in driving self-assembly of nanocrystal superlattices, a compelling platform for low-cost nanoscale patterning of next-generation optoelectronic devices

**First Solar**, Real Estate Division Intern, San Francisco, California **June** **2013**

* Sat in on meetings outlining utility-scale solar project development in the southwestern US and Chile, met with project developers, engineers, and permitting managers to discuss the future of solar power generation

**Samsung**, Research Fellow within Global Research Outreach, Chicago, Illinois **2012 -** **2014**

* Led planning, experiments, and reporting of project to ultimately double the luminescence efficiency of liquid crystal display (LCD) technology, offering a path to prolong the battery life of LCD-based mobile devices

**TECHNICAL SKILLS**

* **Coding**: wrote MATLAB script to automate analysis of electron microscopy images of nanocrystal superlattices, insights led to JACS 2015 publication; full source code available on GitHub under profile mboles01
* **Microscopy**: logged >1000 hours of transmission/scanning electron microscopy (TEM and SEM) analysis for characterization of nanocrystal superlattice structure and defects, trained and supported new users
* **Chemistry**: prepared a wide range of colloidal and bulk solution-processed inorganic semiconductors, characterized with techniques including XRD, UV-Vis, PL, XPS, NMR, FTIR, and TGA

**SELECTED PUBLICATIONS** (out of total of >10, see also Google Scholar)

* **M. Boles**, T. Hyeon, and D. Talapin. “The surface science of nanocrystals” *Nature Materials* **2016**, 15, 141
* **M. Boles**, M. Engel, D. Talapin. “Self-assembly of colloidal nanocrystals” *Chemical Reviews* **2016**, 116, 11220
* **M. Boles** and D. Talapin. *“*Many-body effects in nanocrystal superlattices” *J. Am. Chem. Soc.* **2015**, 137, 4494
* **M. Boles** and D. Talapin. “Self-assembly of tetrahedral CdSe nanocrystals” *J. Am. Chem. Soc.* **2014**, 136, 5868
* **M. Boles** and D. Talapin. “Connecting the dots” *Science* **2014**, 344, 1340

**OTHER**

* **Membership**: Eagle Scout (2004), Rotary Youth Ambassador (2005), Alpha Chi Sigma (2007-2010), South Side After-School Science Club (2012-2016), Stanford Leaders in Communication (2017)
* **Interests**: *travel and language*: proficient in German and Spanish from years spent abroad as college and high school exchange student in Berlin, Germany and Cordoba, Argentina;   
  *sports and activity*: playing singles and doubles tennis since high school; snowboarded across the Rockies, Alps, and Appalachian Mountains; backpacked through Yosemite, Yellowstone, and Grand Teton National Parks