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, Dean's List, UNC Distinguished Scholar, Coca-Cola Scholar

EXPERIENCE

Lam Research Corporation, Process Engineer, Fremont, California   **2018 - present**
- Developing physical/chemical processes that shape nanoscale features at the heart of next-generation NAND and DRAM (flash and main memory) devices
- Created Python scripts for Lam Supervised Image Measurement (SIM), an internal image analysis application that reduces by 50% the time spent by engineers collecting manual measurements of microscopy images

Stanford University, Dreyfus Postdoctoral Fellow in Chemistry, Stanford, California   **2016 - 2018**
- 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
- Wrote MATLAB script to identify objects of interest within electron microscopy images and extract geometrical properties of the set, published insights from this work in JACS 2015 article

SIDE PROJECTS

- **Analysis of Bay Area housing market**: scraped thousands of real estate listings, incorporated commute time and school quality data in multiple linear regression model to identify factors driving home values, underpriced neighborhoods and listings (Python, BeautifulSoup, Pandas, Cartopy, Matplotlib, Seaborn, Scikit-learn)
- **Personal finance analytics**: wrote small script to pull transactions information from personal bank statements and categorize, bin, and plot income, expenses, and cash flows across months (R, dplyr, ggplot)

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**: Stanford Leaders in Communication (2017), South Side After-School Science Club (2012-2016), Alpha Chi Sigma (2007-2010), Rotary Youth Ambassador (2005), Eagle Scout (2004)
- **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