C A Marcus Carr, PhD

camarcuscarr.com | marcus.carr@gmail.com | 510.457.1707

Up-and-coming data scientist with substantial research experience in biochemistry (PhD), chemistry (MS and BA), and biotech applications. Side projects on seasonality and social media and the Data Science Specialization on Coursera.

Education

University of California, Berkeley

PhD in Chemistry, Dec 2013. Relevant coursework: Python for bioinformatics, probability theory, statistical methods. Cleantech to Market (**Haas School of Business**).

Master of Science in Chemistry, May 2008

Columbia University, New York City. **Bachelor of Arts** in Chemistry, May 2005

MOOCs: Coursera Data Science Specialization (Johns Hopkins), Machine Learning (Andrew Ng, Stanford), Social Network Analysis (Lada Adamic, Michigan), Structure and Interpretation of Computer Programs (UC Berkeley CS61A)

Research experience

Kiverdi, Inc., Scientist. January 2014–present.

- Engineered bacteria to make chemicals, including proof-of-concept for a new chemical in just two months.
- Wrote narratives and work plans for grants ($100K–$2M) and partner proposals.
- Assigned work to two research associates.

Univ. of California, Berkeley, Doctoral dissertation. Apr 2008–Dec 2013. PI: Judith P. Klinman

- Developed a method to compare normal enzymes with defective mutants by directly measuring the shape.
- Applied novel data collection and analysis methods to determine population distributions from protein structure data.
- Built two new teams with other research groups to carry out these projects.
- Mentored three undergraduate student researchers.

Univ. of California, Berkeley, Master's thesis. Oct 2006–Sep 2007. PIs: Robert G. Bergman & Kenneth N. Raymond.

- Synthesized molecular scaffolds for a new type of chemical catalyst.

Columbia University Medical Center, clinical research assistant. October 2005–August 2006. PI: Robyn J. Barst, MD

Skills

General software & programming	Python (data preprocessing, normalization, file format conversion, bioinformatics applications), R, SQL, Microsoft Office suite, Adobe Illustrator.
Biology-specific software	BLAST, multiple sequence alignment, PHENIX, Maestro, homology modeling.

Publications

CA Marcus Carr, JP Klinman. Hydrogen tunneling in a prokaryotic lipoxygenase. *Biochemistry* 2014, 53, 2212. — S Hu, SC Sharma, AD Scouras, A Soudackov, **CA Marcus Carr**, T Alber, S Hammes-Schiffer, JP Klinman. Extremely Elevated Room-Temperature Kinetic Isotope Effects Quantify the Critical Role of Barrier Width in Enzymatic C–H Activation. *J Amer Chem Soc* 2014, 136, 8157. — **CA Marcus Carr**, M Horitani, AR Offenbacher, MW Knitz, JP Klinman, BM Hoffman. Direct detection of active-site geometries in soybean lipoxygenase-1 by ENDOR. In preparation.

Awards

July 2009–June 2011	**NIH** Molecular Biophysics Training Grant
May 2005	Jackson Memorial Prize (outstanding scholar-athlete)

Teaching Experience

UC Berkeley, Graduate Student Instructor, various chemistry and biology labs at the introductory and advanced level.
Columbia Univ., Teaching Assistant, general chemistry lecture and lab.

Other Activities

California Triathlon, UC Berkeley Club Sports, 2008–2013. Sponsorships Chair, 2012–2013 season
Chemistry Graduate Life Committee, UC Berkeley, 2009–2012. Funding Chair, November 2009–December 2012
Columbia University Men's Lightweight Rowing (EARC/NCAA Division I), 2002–2005

Languages

English (native), German (expert, Goethe-Zertifikat C2), French (intermediate)