

# GABE MEDNICK

## Background and evolving interests in data science and machine learning

As a PhD candidate, I maintained a broad interdisciplinary approach that included microbiology, molecular biology, biochemistry, physical chemistry and spectroscopy. In my postdoctorate, my love for learning and teaching biology and chemistry was nurtured. At my first research position with a start-up, I was introduced to bioinformatics (command line tools, python and R) for processing data generated by nanopore sequencing. In the process, of learning how to analyze my data, I discovered data science and became a passionate convert.

## PROFESSIONAL EXPERIENCE

- 2020 • **Data Scientist, intern**  
Claret Biosciences LLC 📍 Santa Cruz, CA
- Worked on unique modeling problems using tidyverse and tidymodels framework in R as well as command line tools, bash scripting and other technologies.
  - Created workflows using Snakemake.
  - Used version control, Rmarkdown, vim and touched on some python scripts as well.
- 2020 | 2018 • **Senior Scientist**  
UpRNA LLC (founded by David Deamer, inventor of the 'nanopore sequencing concept' that is now a reality!) 📍 Santa Cruz, CA
- Investigated proprietary methods of DNA and RNA synthesis.
  - Worked as the principal operating scientist.

## TEACHING EXPERIENCE

- 2018 | 2016 • **General chemistry.**  
Taught and co-taught general chemistry and biology as part of an active learning initiative. 📍 UCSC
- 2016 | 2009 • **Biochemistry and Physical chemistry**  
Teaching assistant for upper division biochemistry and physical chemistry series for multiple years 📍 UCSC

## EDUCATION

- 2018 | 2016 • **HHMI postdoctorate at UCSC**  
Teaching chemistry and biology with a focus on technology and student engagement in STEM 📍 UCSC



## CONTACT INFO

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For more information, please contact me via email.

## SKILLS

Experienced with microbiology, molecular biology, biochemistry, spectroscopy, data science, bioinformatics, and machine learning.

Programming skills include: R, Bash, Python, Git and SQL. Also experienced with Markdown and LaTeX. Please see my [DataCamp](#) profile for a detailed view of courses I have completed.

*This resume was made with the amazing R package [pagedown](#).*

*Last updated on 2020-09-12.*

- 2016 • **University of California, Santa Cruz**  
PhD in Chemistry 📍 UCSC
- Thesis: Structural Characterization of a Bacterial Photosensing Light-Oxygen-Voltage (LOV) Protein Domain From *Rhizobium leguminosarum*
- 2008 • **University of California, Santa Cruz**  
B.S. in Biochemistry and Molecular Biology 📍 University of California, Santa Cruz
- Thesis: Interpreting conformational changes of the LOV2 domain using time-resolved Raman spectroscopy

## RESEARCH EXPERIENCE

- 2016 | 2008 • **PhD research**  
Principal Investigator: professor Roberto Bogomolni 📍 UCSC
- 2008 | 2006 • **Undergraduate research**  
Mentor: professor Roberto Bogomolni 📍 UCSC  
• Studied the mechanism of light triggered chemistry in light activated proteins using Raman spectroscopy.
- 2006 • **NSF Summer Undergraduate Research Fellowship (SURF) at UCSC**  
Mentor: professor Pradip Mascharak 📍 UCSC  
• Investigated a novel compound that was designed to release nitric oxide under targeted light activation.
- 2005 • **Summer research intern**  
Mentor: Dr. Michael Matthay 📍 UCSF  
• Ran experiments in a lab in the Cardiovascular Research Institute (CVRI) working on therapies for severe acute respiratory syndrome (SARS)

## SCHOLASTIC RECOGNITION AND AWARDS

- 2015 | 2014 • **Graduate Division's Outstanding TA of the Year Award**  
Chemistry 📍 UCSC
- 2010 • **NSF Graduate Research Fellowships Program (GRFP) Fellowship — honorable mention**  
Chemistry 📍 UCSC
- 2008 • **BS in Molecular Biology with Highest Honors from the Department of Chemistry and Biochemistry (UCSC)**  
Chemistry 📍 UCSC
- 2007 | 2006 • **UCSC Reagent's Scholarship**  
Chemistry 📍 UCSC
- 2007 • **Dave Drexler Scholarship in Chemistry (UCSC)**  
Chemistry 📍 UCSC

2006

- **NSF Summer Undergraduate Research Fellowship (SURF) recipient**  
Chemistry 📍 UCSC  
Highest Honors Award (Mira Costa Community College)  
  
Chemistry  
UCSC  
2004



## INVENTIONS

2020

- **Methods And Devices For Non-Enzymatic Nucleic Acid Synthesis**  
David Deamer, Gabriel Mednick 📍 Filed by UCSC's patent office



## SELECTED PUBLICATIONS

2020

- **Viroid-sized rings self-assemble from mononucleotides through wet-dry cycling: implications for the origin of life**  
Tue Hassenkam, David Deamer, Gabriel Mednick, Bruce Damer  
📍 ResearchGate Publications

2016

- **Structural and Functional Characterization of a Bacterial Thesis Photosensing Light-Oxygen-Voltage (LOV) Protein Domain From *Rhizobium leguminosarum*.**  
Gabriel Mednick (PhD thesis) 📍 UCSC

2006

- **Receptor for Advanced Glycation End-Products is a Respiratory Marker of Type I Cell Injury in Acute Lung Injury.**  
Tokujiro Uchida, Madoka Shirasawa, Lorraine B. Ware, Katsuo Kojima, Yutaka Hata, Koshi Makita, Gabe Mednick, Zachary Matthay, and Michael A. Matthay  
📍 American Journal of Respiratory and Critical Care Medicine

2005

- **Activation of the 7nAChR Reduces Acid-Induced Acute Lung Injury in Mice and Rats to the distribution of intra-individual divergence of alternative splicing.**  
Xiao Su, Jae Woo Lee, Zachary Matthay, Gabe Mednick, Tokujiro Uchida, Xiaohui Fang, Naveen Gupta, and Michael A. Matthay  
📍 American Journal of Respiratory Cell and Molecular Biology