Tejas A. Navaratna, Ph.D

University of California, Santa Barbara
tejasn@ucsb.edu
(408) 318-5227

Education

University of Michigan
Ph.D., Chemical Engineering, August 2020
Dissertation: *Stabilized Bacterial Peptide Display and Directed Evolution*

Massachusetts Institute of Technology
S.B., Chemical-Biological Engineering, 2014
S.B., Physics, 2014
Minor, biology, 2014

Publications

6. S. Roberts, E. Khera, C. Choi, **T. Navaratna**, J. Grimm, G.M. Thurber, T. Reiner. Optoacoustic imaging of GLP-1 Receptor with a near-infrared exendin-4 analog. *Journal of Nuclear Medicine,* in press (2020). https://www.biorxiv.org/content/10.1101/2020.04.29.068619v1

5. **T. Navaratna**, L. Atangcho, M. Mahajan, V. Subramanian, M. Case, A. Min, D. Tresnak, G. Thurber. Directed evolution of potent MDM2 binders using stabilized bacterial peptide display. *Journal of the American Chemical Society.* 142(4), 1882-1894 (2020). https://doi.org/10.1021/jacs.9b10716

4. L. Atangcho, **T. Navaratna,** G. Thurber. Hitting undruggable targets: viewing stabilized peptide development through the lens of quantitative systems pharmacology. *Trends in Biochemical Sciences.* 44(3), 241-257 (2019). https://doi.org/10.1016/j.tibs.2018.11.008

3. L. Zhang, **T. Navaratna**, G. Thurber. A Helix-Stabilizing Linker Improves Subcutaneous Bioavailability of a Helical Peptide Independent of Linker Lipophilicity. *Bioconjugate Chemistry.* 27(7), 1663–1672 (2016). https://doi.org/10.1021/acs.bioconjchem.6b00209

2. L. Zhang, **T. Navaratna**, J. Liao, G. Thurber. Dual-purpose linker for alpha helix stabilization and imaging agent conjugation to glucagon-like peptide-1 receptor ligands. *Bioconjugate Chemistry*. 26(2), 329–337 (2015). https://dx.doi.org/10.1021/bc500584t

1. A. Tzeng, B. H. Kwan, C. F. Opel, **T. Navaratna**, K. D. Wittrup. Antigen specificity can be irrelevant to immunocytokine efficacy and biodistribution. *Proc. Natl. Acad. Sci. U.S.A.* 112(11), 3320-3325 (2015). https://dx.doi.org/10.1073/pnas.1416159112

Presentations

T. Navaratna, et al. Chemically Diverse Peptide Libraries Yield Potent Inhibitors of the p53-MDM2 Interaction. 2019 AIChE Annual Meeting, Orlando, FL.

T. Navaratna, L. Atangcho, G. Thurber. Directed evolution of high affinity MDM2-binding ligands using stabilized bacterial peptide display. 2019 Spring ACS National Meeting, Orlando, FL.

T. Navaratna, L. Atangcho, A. Min, G. Thurber. Surface display-enabled selection of bioorthogonally stabilized alpha helices using non-natural amino acid incorporation. 2018 Spring ACS National Meeting, New Orleans, LA.

T. Navaratna, G. Thurber. Surface Display-Enabled Directed Evolution of Stabilized Alpha Helix Peptides. 2016 AIChE Annual Meeting, San Francisco, CA.

T. Navaratna, Z. Huang, S. J. Lippard. Synthesis and characterization of novel fluorescent zinc sensors. MIT Department of Chemistry Undergraduate Research Symposium (2011)

Awards and Honors

- Rackham Travel Grant (awarded 2016, 2018, 2019)
- National Science Foundation Graduate Research Fellowship (2016)
- National Science Foundation Graduate Research Fellowship Program – Honorable Mention (2015)
- Doctoral Candidacy Examination – pass with distinction (2015)
- Zeno Karl Schindler Foundation summer grant (2013)
- Merck Manufacturing Division Engineering and Technology Fellowship (2012)
- High Honors (top 50), United States National Chemistry Olympiad (2009)

Professional experience

Postdoctoral researcher **09/2020 – present**

Advisor: Dr. Michelle O'Malley, University of California Santa Barbara

- Directed evolution of anaerobic gut fungi
- Development of genetic tools for non-model organisms

Graduate researcher **06/2014 – 05/2020**

Advisor: Dr. Greg Thurber, University of Michigan

- NSF Graduate Fellow 2016-2019
- Biophysical characterization (nuclear magnetic resonance circular dichroism spectroscopy) of peptides stabilized by copper-catalyzed [3+2] azide-alkyne cycloaddition
- Development of a surface display screening platform for libraries of stabilized alpha helix peptides and directed evolution of sequences

Undergraduate researcher **09/2013 – 05/2014**
Wittrup Lab, MIT
- Modeled pharmacokinetics and pharmacodynamics for cancer immunotherapies
- Experimentally validated models and determined parameters in mammalian cell culture

Undergraduate researcher **06/2013 – 08/2013**
Stelling Lab, ETH Zurich
- Developed models of yeast nutrient transporter concentrations from growth data
- Fluorescently tagged transporter proteins and analyzed by microscopy

Teaching assistant **01/2012 – 05/2012**
MIT Biology
- Supervised a four person group in an experimental biology laboratory class
- Led discussions of biochemistry and genetics literature

MMD Engineering and Technology Fellow **06/2012 – 08/2012**
Merck & Co.
- Investigated refolding conditions and *E. coli* expression of a lead protein candidate
- LC-QTOF analysis of protein isoforms

Undergraduate researcher **11/2011 – 05/2012**
Langer Lab, MIT
- Design and characterization (^{13}C NMR, FT-IR, HPLC) of biocompatible nanoparticle polymers
- Mammalian cell culture *in vitro* validation of siRNA delivery

Summer research intern **06/2011 – 08/2011**
Halcyon Molecular, Inc.
- Synthesis and characterization (HPLC, NMR, CE) of novel DNA probes
- Enzymatic and chemical degradation assays of DNA

Undergraduate researcher **01/2011 – 05/2011**
Lippard Group, MIT
- Synthesized and characterized novel small molecule fluorescence-based zinc sensors

High School Research **10/2008 – 04/2010**
- Investigated long term orbit and temperature changes of solar system objects associated with stellar evolution
  → Intel Science Talent Search Semifinalist (January 2010)
  → First place in category, California State Science Fair: (May 2009)

Outreach and community involvement
- Engaging Scientists in Research and Advocacy (ESPA): **2018 – 2020**
  - Met with state legislators in Lansing, MI to advocate for graduate student issues
  - Planned Meet a Scientist events to engage UM STEM graduate students with the public
- Peer mentor, University of Michigan Chemical Engineering: **2015 – 2016**
- Chemical Reaction Engineering source grader (10.37): **Spring 2014**
- Hall Chair, East Campus dormitory: **2012 – 2013 academic year**

- MIT ESP Splash Teacher: **09/2010 – 09/2012**
- Webmaster, MIT chapter of AIChE: **2012 – 2013 academic year**
- Cofounder, president of Lynbrook High School Astronomy Club: **11/2008 – 09/2010**