

Stanford



Sharon S. Newman

Ph.D. Student in Bioengineering, admitted Autumn 2018

Bio

BIO

I am interested in increasing access to medical technologies, particularly in low-resource settings. As a PhD student, I develop computational and bio-analytical technologies for early detection of disease, presently focusing on methods to increase sensitivity and multiplexing capabilities in diagnostic devices. Through developing these systems, I get to explore and play with subjects such as statistical modeling, image processing, manipulation and design of molecular systems, and optimization techniques. As a student, I have gotten to take classes ranging from many project based AI/ML computation courses to mathematics in linear dynamical systems to deep dives into chemistry of therapeutic drug development. As I wrap up my PhD, I look forward to bringing my wide base of experiences in both computational and biological realms towards breakthroughs in precision health and diagnostics amenable to lower resource settings at the last mile.

I also am always excited to teach and mentor, and have been involved with a myriad of opportunities including curriculum development and teaching AI/ML to high school students in US and India, K-12 STEM outreach in US, Scratch curriculum teaching to teachers in Taiwan, and graduate level courses such as Biological macromolecules to Stanford students! Im always happy to chat about how to best reach and inspire students and people of all ages, so please reach out!

HONORS AND AWARDS

- Stanford Graduate Fellowship (SGF), Stanford University (2017-Present)
- Graduate Research Fellowship, NSF (2019-Present)
- Whitaker International Fellow, Whitaker International (2015-2016)
- U.S. Student Fulbright Scholar, Fulbright (2015-2016)

LINKS

- LinkedIn Profile: <https://linkedin.com/in/newmanst/>

Publications

PUBLICATIONS

- **High density DNA data storage library via dehydration with digital microfluidic retrieval.** *Nature communications*
Newman, S., Stephenson, A. P., Willsey, M., Nguyen, B. H., Takahashi, C. N., Strauss, K., Ceze, L.
2019; 10 (1): 1706
- **Puddle: A Dynamic, Error-Correcting, Full-Stack Microfluidics Platform**
Willsey, M., Stephenson, A. P., Takahashi, C., Vaid, P., Nguyen, B. H., Piszczek, M., Betts, C., Newman, S., Joshi, S., Strauss, K., Ceze, L., ACM
ASSOC COMPUTING MACHINERY.2019: 183–97
- **Random access in large-scale DNA data storage** *NATURE BIOTECHNOLOGY*

Organick, L., Ang, S., Chen, Y., Lopez, R., Yekhanin, S., Makarychev, K., Racz, M. Z., Kamath, G., Gopalan, P., Nguyen, B., Takahashi, C. N., Newman, S., Parker, et al
2018; 36 (3): 242-+