

Stanford



Kathryn Brink

Postdoctoral Scholar, Infectious Diseases

Bio

BIO

Kathryn Brink is a postdoctoral scholar in the Center for International Security and Cooperation (CISAC), where she works with Megan Palmer and David Relman.

Kathryn is a synthetic biologist by training. During her PhD, Kathryn studied bacterial two-component systems (TCSs), signal transduction pathways that bacteria use to sense and respond to changes in their environment. TCSs play important roles in host-pathogen interactions and can be engineered for medical and environmental biosensing applications. In her thesis work, Kathryn developed engineering and screening approaches to discover and characterize the stimuli that activate these pathways.

At CISAC, Kathryn's research focuses on risk management and assessment in biological science and engineering, with the goals of improving the governance of biological research and reducing the risk of its misuse. She investigates factors associated with attention to risk among scientists and engineers and studies risk assessment processes in the life sciences.

PROFESSIONAL EDUCATION

- PhD, Rice University , Systems, Synthetic, and Physical Biology (2021)
- BS, Massachusetts Institute of Technology , Biological Engineering (2016)

STANFORD ADVISORS

- David Relman, Postdoctoral Faculty Sponsor

Publications

PUBLICATIONS

- **Guiding Ethical Principles in Engineering Biology Research.** *ACS synthetic biology*
Mackelprang, R., Aurand, E. R., Bovenberg, R. A., Brink, K. R., Charo, R. A., Delborne, J. A., Diggans, J., Ellington, A. D., Fortman, J. L., Isaacs, F. J., Medford, J. I., Murray, R. M., Noireaux, et al
2021
- **Mucosal acidosis elicits a unique molecular signature in epithelia and intestinal tissue mediated by GPR31-induced CREB phosphorylation** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*
Cartwright, I. M., Dowdell, A. S., Lanis, J. M., Brink, K. R., Mu, A., Kostelecky, R. E., Schaefer, R. M., Welch, N., Onyiah, J. C., Hall, C. T., Gerich, M. E., Tabor, J. J., Colgan, et al
2021; 118 (20)
- **Rewiring bacterial two-component systems by modular DNA-binding domain swapping** *NATURE CHEMICAL BIOLOGY*
Schmidl, S. R., Ekness, F., Sofjan, K., Daeffler, K., Brink, K. R., Landry, B. P., Gerhardt, K. P., Dyulgyarov, N., Sheth, R. U., Tabor, J. J.
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