Stanford



Cort Breuer

Ph.D. Student in Immunology, admitted Autumn 2022

Bio

BIO

Cort Breuer is currently an Immunology PhD student in the lab of Nathan Reticker-Flynn. Cort received his BS in Biological Engineering from Cornell University in 2022, where he studied lymphatic-cancer interactions and T cell mechanosensing in the lab of Esak Lee. Previously, he worked with James Moon at Massachusetts General Hospital to develop in vivo gene therapies for the immune system and with Michelle Krogsgaard at NYU Perlmutter Cancer Center to investigate structural biology of TCR signaling. Cort's current work focuses on mechanisms of tumor-immune tolerance and decoding the antigen specificity of T cell receptors. Drawing on his engineering background, he designs new molecular tools to record how immune cells communicate and constructs therapeutics to target impaired immune responses.

HONORS AND AWARDS

- F31 Predoctoral Fellow (Ruth L. Kirschstein National Research Service Award), National Cancer Institute (NIH) (2025-2028)
- Graduate Fellow, Arc Institute (2022-2026)

EDUCATION AND CERTIFICATIONS

- BS, Cornell University College of Engineering , Biological Engineering (2022)

Research & Scholarship

LAB AFFILIATIONS

- Nathan Reticker-Flynn, Reticker-Flynn Lab (6/1/2023)

Publications

PUBLICATIONS

- **Lymph node environment drives FSP1 targetability in metastasizing melanoma.** *Nature*
  Palma, M., Chaufan, M., Breuer, C. B., Müller, S., Sabatier, M., Fraser, C. S., Szylo, K. J., Yavari, M., Carmona, A., Kaur, M., Melo, L. M., Cansiz, F., Monge-Lorenzo, et al
  2025

- **Spontaneous and experimental models of lymph node metastasis.** *Nature protocols*
  Breuer, C. B., Xiong, Z., Wang, A., Rodriguez, G. E., Abhiraman, G. C., Garcia, K. C., Reticker-Flynn, N. E.
  2025

- **Redirecting immune signaling with cytokine adaptors.** *Nature communications*
  Abhiraman, G. C., Householder, K. D., Rodriguez, G. E., Glassman, C. R., Saxton, R. A., Breuer, C. B., Wilson, S. C., Su, L., Yen, M., Hsu, C., Pillarisetty, V. G., Reticker-Flynn, N. E., Garcia, et al
  2025; 16 (1): 2432

- **Type I interferon signaling instills divergent metastatic phenotypes and immunotherapy responses** *bioRxiv*
  Breuer, C. B., Labrado, M., Rodriguez, G. E., Garcia, K., Reticker-Flynn, N. E.
  2025
- **Bioengineered in vitro models of leukocyte-vascular interactions** *BIOCHEMICAL SOCIETY TRANSACTIONS*
  Lee, J., Breuer, C. B., Lee, E.
  2021; 49 (2): 693-704
- **In vivo engineering of lymphocytes after systemic exosome-associated AAV delivery** *SCIENTIFIC REPORTS*
  Breuer, C. B., Hanlon, K. S., Natasan, J., Volak, A., Meliani, A., Mingozzi, F., Kleinstiver, B. P., Moon, J. J., Maguire, C. A.
  2020; 10 (1): 4544