

Profile of an Early-Career Researcher

David A. Spiegel, MD, PhD



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[Research Group Site](#)

David Spiegel, MD, PhD is a Professor at Yale University with appointments in the departments of Chemistry and Pharmacology. He graduated Magna Cum Laude, with Highest Honors in Chemistry from Harvard University in 1995, having worked in the laboratory of Professor Yoshito Kishi. He then went on to pursue a combined MD/PhD degree at Yale University, where he worked in the laboratory of Professor John L. Wood, focusing on synthetic organic chemistry, and graduating in 2005. After a brief postdoctoral stint at the Broad Institute of Harvard and MIT under Professor Stuart L. Schreiber, Professor Spiegel started his independent academic career at Yale University in 2007.

The central focus of the Spiegel Research Group is the development of novel, small molecule-based strategies for manipulating and regulating human immunity and biological processes. The strategies they develop allow them to study the molecular mechanisms that underlie human diseases and design novel therapeutic approaches to address a number of pathologic conditions. Studies performed in the Spiegel Laboratory have significantly contributed to both fundamental and applied areas of research.

The Spiegel Research Group has already created two new therapeutic concepts centered on bi-functional small molecules which harness the immune system to fight cancer and infectious diseases — antibody-recruiting molecules (ARMs) and synthetic antibody mimics (SyAMs). These are small molecules that can recruit either antibodies (ARMs) or immune cells (SyAMs) directly to cancer cells, thus inducing immune-mediated destruction. They are currently working to bring ARM- and SyAM-based drugs to market and hope to expand their scope and utility toward the development of next-generation, customizable immunotherapeutics.

Moving forward, the Spiegel Research Group will be focusing on several areas with great clinical relevance: expanding on customized responses against cancer and infectious diseases, reversing damage associated with aging, and developing low-cost screening strategies for targeted immunotherapies.

Professor Spiegel has co-authored over 40 peer-reviewed publications and has over a dozen patents. He is the Chief Scientific Advisor and co-founder of Kleo Pharmaceuticals. He has also served as a consultant for International Flavors and Fragrances, Novartis Institute for Biomedical Research, Bristol-Myers Squibb, and Pharmaseq.

Professor Spiegel has been recognized for his achievements with various awards and honors, including the NIH Director's New Innovator Award, the Department of Defense Era of Hope Scholar Award, the Ellison Medical Foundation New Scholar Award in Aging Research, the Novartis Early Career Award in Organic Chemistry, the Bill and Melinda Gates Foundation Grand Challenges Explorations Award, the Alfred P. Sloan Foundation Fellowship, and others.

