

# HEINRICH WIELAND PRIZE



## SYMPOSIUM SPEAKER 2026 | PROFILE

**Professor Hagan Bayley, PhD**  
Ellison Institute of Technology Oxford, UK

Hagan Bayley's work has transformed the understanding of transmembrane pores and unlocked a broad range of biotechnological applications. By systematically redesigning the bacterial pore-forming protein  $\alpha$ -hemolysin, he developed stochastic sensing – a single-molecule technique that detects analyte binding through the modulation of ionic currents that pass through engineered nanopores. Stochastic sensing enables the analysis of diverse analytes and ultrarapid sequencing of nucleic acids. He also uses protein nanopores as nanoreactors to observe and understand covalent chemical reactions at the single-molecule level. In another line of research, he discovered that aqueous droplets connected by lipid bilayers can be 3D-printed into synthetic tissues capable of signal propagation, light-activated communication, and shape changes on demand. He has extended this platform to pattern living cells into hybrid materials, paving new ways for drug discovery and regenerative medicine.

Hagan Bayley studied Chemistry at the University of Oxford, and obtained his PhD from Harvard University in 1979, followed by postdoctoral research at MIT. After faculty positions at Columbia University, the Worcester Foundation for Experimental Biology, and Texas A&M University, he joined the University of Oxford as Professor of Chemical Biology in 2003. In 2005, he founded Oxford Nanopore Technologies, whose MinION device has democratised portable DNA and RNA sequencing worldwide. In 2025, he joined the Ellison Institute of Technology in Oxford as a Principal Scientist, where he is Director of the Institute for Materials & Devices for Life Sciences. He is a Fellow of the Royal Society and has received numerous honours, including the Royal Society Mullard Award and the Royal Society Buchanan Medal.