

Brief Biography for Dr. Bevin Page Engelward

Dr. Bevin Engelward is Prof. of Biological Engineering at MIT where she has been a Full Professor since 2014. Dr. Engelward was a history major at Yale whose fields of study included both history and biology. As an undergraduate, she worked in the laboratory of Prof. Thomas A. Steitz, where she studied structural biology. Her first co-author paper was from the Steitz lab and it describes how a protein can invoke a sharp bend in DNA. With a passion for understanding life itself, as well as a commitment to leveraging science for public good, she went on to get her doctoral degree in Molecular Toxicology from the Harvard School of Public Health. While at Harvard, she cross-registered to take core classes at MIT (including Biochemistry, Genetics, and Molecular Biology), and it was these experiences that ultimately inspired her work as an educator at MIT. While at Harvard as a graduate student, she worked under Prof. Leona D. Samson and her project was to study a DNA repair enzyme, namely the Alkyladenine DNA glycosylase. In collaboration with Prof. Jan Hoeijmakers' laboratory, Dr. Engelward contributed to the creation of the first knockout mice lacking expression of a DNA glycosylase. She began her independent career at MIT in 1997 in the Division of Toxicology. Later, this Division merged with engineers, which ultimately led to the creation of what is now the MIT Department of Biological Engineering. She has held several leadership positions, including being the President of her society, the Environmental Mutagenesis and Genomics Society (EMGS). She was also Deputy Director of the Center for Environmental Health Sciences at MIT, and she is currently the Director of the MIT Superfund Research Program and Associate Editor for Environmental and Molecular Mutagenesis. Among honors that she has received, she was awarded the EMGS Mentor Award and the Society of Toxicology Education Award. She is also a fellow of the American Association for the Advancement of Science (AAAS). Dr. Engelward has mentored more than 70 undergraduates, graduate students, and postdocs. Dr. Engelward currently studies how genes and environmental factors affect susceptibility to DNA damage, mutations, and cancer. Her work spans from basic research to technology development, and her lab created the first mouse model for which mutant cells harboring sequence rearrangements fluoresce, enabling in vivo studies of mutation susceptibility. Her laboratory is also known for mammalian cell-array-based platforms that can be used for assessing DNA damage (CometChip), the extent of cell growth (MicroColonyChip), and other endpoints. By bridging basic and applied research, Dr. Engelward's work contributes to our understanding of how gene-environment interactions impact disease susceptibility as well as applications of novel technologies to address problems relevant to public health.

