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Sondermann Receives Pew Award

Holger Sondermann, Robert N. Noyce assistant professor of life sciences and technology, was recently named one of 20 exceptional researchers selected as 2008 Pew Scholars in the Biomedical Sciences. As a Pew Scholar, he will receive a \$240,000 award over four years to help support his research, as well as gain inclusion into a unique community of scientists that encourages collaboration and the exchange of ideas.

Sondermann will investigate how harmful bacteria are able to form biofilms-microbial blankets that shelter their residents from attack by antibiotics. His work could lead to the development of novel antibiotics for eradicating difficult-to-treat infections.

"The Pew award will allow me to approach my research project in a much broader way, and will allow me to tackle more risky projects," said Sondermann. "Infectious diseases remain the second leading cause of death worldwide, emphasizing the limitations of current treatments and the need for novel approaches. My research team proposes to elucidate the signaling mechanisms controlling major virulence pathways. We hope to translate our findings into novel therapies that will reduce the spread of infections and infectious diseases by focusing on biofilms - sessile community forms of bacteria that are both very common and widespread."

Biofilm formation, explained Sondermann, plays a crucial role in - for example - hospital-acquired infections, in the pathogenicity of microbes in Legionnaires disease, and in infections accompanied with cystic fibrosis. The pathogenic colonization of organs, heart, ear, and lungs, as well as infections resulting from catheters and prosthetic implants also involve biofilms.

The formation of biofilms is a signaling process in which microbes switch from a free-swimming, planktonic state to a surface-attached, self-contained social life form. Although biofilm-specific genes have been identified and the process has been studied morphologically, how biofilm formation is regulated, and the underlying signaling mechanisms involved, are largely unknown. Sondermann's team studies a second messenger, unique in the microbial world that recently has been shown to control secretion, cell adhesion and motility leading to biofilm formation and increased cytotoxicity.

"Pew's Program in the Biomedical Sciences is designed to enable scientists to take calculated risks, expand their research and follow unanticipated leads," said Rebecca W. Rimel, President and Chief Executive Officer of The Pew Charitable Trusts. "Pew is honored to invest in these brilliant minds, and to provide financial and professional support as they pursue their pioneering breakthroughs."



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