

SEMINAR

ALL ARE WELCOME

23 April 2015 (Thursday), 11am
The Auditorium (Level 1)

Bacteria from diverse habitats colonize and compete in the mouse gut

Dr Henning Seedorf
AgResearch Ltd, New Zealand



Henning Seedorf graduated from Philipps University in Marburg, Germany, with a diploma in biology in 2003 and a PhD from Philipps University and the Max Planck Institute for Terrestrial Microbiology in Marburg in 2006. He received postdoc training at Washington University in St Louis, USA, and at AgResearch Ltd. in Palmerston North, New Zealand. His research interests are revolving around the physiology, metabolism, and ecology of commensal intestinal microbes.

Understanding the factors that allow microbes to colonize the human gut should help us achieve better understanding of how contact with other microbial reservoirs in our environment impacts diversity in this body habitat. To study how microbes establish themselves in a mammalian gut environment, we colonized germ-free mice with microbial communities from human, zebrafish, and termite guts, human skin and tongue, soil, and microbial mats. Bacteria from these foreign environments colonized and persisted in the mouse gut. Cohousing mice harboring these xenomicrobiota or a mouse cecal microbiota, along with germ-free "bystanders," revealed the success of particular bacterial taxa in invading guts with established communities and empty gut habitats. Unanticipated patterns of ecological succession were observed; for example, a soil-derived bacterium dominated even in the presence of bacteria from other gut communities (zebrafish and termite). This approach can be used to address mechanistic questions about succession and host-specificity of gut microbes.

Recent Publications:

1. Seedorf H, Kittelmann S, Peter H Janssen PH (2015) Few highly abundant operational taxonomic units dominate within rumen methanogenic archaeal species in New Zealand sheep and cattle. *Appl Environ Microbiol* 3:986-995
2. Seedorf H, Griffin NW, Ridaura VK, Reyes A, Cheng J, Rey FE, Smith MI, Simon GM, Scheffrahn RH, Woebken D, Spormann AM, Van Treuren W, Ursell LK, Pirrung M, Robbins-Pianka A, Cantarel BL, Lombard V, Henrissat B, Knight R, Gordon JI (2014) Bacteria from Diverse Habitats Colonize and Compete in the Mouse Gut. *Cell* 2:253-266