



Department of
UROLOGIC SCIENCES
UBC



Dr. Dirk Lange
Assistant Professor,
Department of Urologic Sciences
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Education/Training

B.Sc. Hon McMaster University, Hamilton,
Ontario

Ph.D. University of Western Ontario,
London, Ontario

Background

Dr. Dirk Lange is a microbiologist who earned his Ph.D. in Microbiology and Immunology from the University of Western Ontario (London, Ontario) on understanding the role of the capsular polysaccharide in the pathogenesis of *Campylobacter jejuni*. Dr. Lange completed his post-doctoral fellowship at The Stone Centre at VGH with Dr. Ben Chew, where he contributed significantly to the area of urinary biomaterial design, providing a basic science perspective to understanding ureteral stent related problems.

Together with Dr. Chew he has authored several book chapters, original research and review articles on the topic of bacterial adhesion and biofilm formation to ureteral stents, and has been actively involved in the development of a novel biodegradable ureteral stent. In addition to this, Dr. Lange expanded the research program at the Stone Centre by spearheading studies aimed at understanding the role of oxalate transport across the intestinal epithelium in calcium oxalate kidney stone formation, and how it is affected by *Oxalobacter formigenes*, a commensal oxalate degrading bacterium that is absent in many hyperoxaluric kidney stone formers.

This work has contributed to shaping his current research interests, which pertain to understanding the role of bacteria in causing and treating urologic disease. Specifically he is working to characterize *Oxalobacter formigenes* at the microbiological level, as a better understanding of the bacterium and how it

interacts with the intestinal epithelium will help to improve its potential use as a treatment for hyperoxaluria and recurrent kidney stone disease.

In addition to this, Dr. Lange is involved in collaborative work with Dr. Alan So and Dr. John Smit (Microbiology, UBC) aimed at studying the use of non-pathogenic bacteria in the treatment of superficial bladder cancer.

Dr. Lange is also interested in studying the role of inflammation in bacterial prostatitis patients in promoting prostate cancer formation.

To date Dr. Lange's contributions to Endourology and particularly Stone Disease have been recognized by the Endourological Society with the "Best Endourology Paper" award at the World Congress of Endourology in 2009 and the "Best Research Presentation" at the World Congress of Endourology in 2010. He has been invited to speak at international stent symposiums on his work regarding biofilms and ureteral stents. In addition Dr. Lange has been recognized as a Vancouver Coastal Health Research Institute Rising Star for his contributions to research and mentorship of students and colleagues.

We are pleased to have recruited him to our department to further enhance our research involving microbiological causes of both urologic oncology and non-oncologic diseases. We believe he is a rising star in basic science and urologic research.