

## **Team Science Spotlight**

### **Horst von Recum, PhD**

Professor, Department of Biomedical Engineering



Dr. von Recum would tell you that Biomedical Engineering is a field prone to translation, yet he would also tell you that it wasn't only his formal education that prepared him for the highly translational research with which he engages now. Participating in two I-Corps™ projects, (NSF programs aimed at speeding the translation of promising technologies to marketplace), reinforced Dr. von Recum's understanding of the necessity of bringing the "customer", or translational partner, into the research team to let them help lead the research question development. Subsequently, Dr. von Recum spent time on sabbatical learning about the industry/translational partner side of product development. It was these experiences that enabled him to gain a complete picture on what it takes to convert research from the lab to products which benefit human health.

In the spring of 2019, Dr. von Recum and his colleagues, Dr. Michael Rosen, a general surgeon from the Cleveland Clinic, and Dr. Julius Korley, President and CEO of Affinity Therapeutics, received a CTSC Community and Collaboration Pilot grant. Their study "Translating a Product That Prevents Surgical Adhesions into a Large Animal Model" examines the potential for a polymer-coated hernia repair mesh to reduce post-surgery complications in a large animal model as a step in the translational process to developing a product for human use. Their work embodies team science by exemplifying how bringing together the disciplines that design, test and ultimately use the product in practice, can yield a highly-useful translational product informed by its end-users.

The partnership began years ago when Dr. Rosen approached Dr. von Recum about helping to find a solution for the high infection rate following hernia repair surgery. Through their work in this area they made an accidental discovery that a polymer coating they had designed for the hernia mesh had the potential to combat a different complication of hernia repair surgery, that of bowel adhesion. They began to scientifically examine the impact of their polymer on preventing

adhesion in animal models. This research came easily because of the existing relationships between investigators who had identified the value of teaming together to solve complex problems that exceeded the limits of their individual disciplines. They had already laid the groundwork and had processes developed, so when a new and potentially more impactful research question came up - they were able to easily act on it. Positive results from Dr. von Recum's research would represent an important step in moving this biomaterial through the translational process with next steps being larger scale studies in animals and eventually in humans.