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The TGF- β Superfamily Conference: Signaling in Development and Disease

Organizer Bio: Tom Thompson, PhD

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Tom Thompson founded his own laboratory in 2005 utilizing advanced structural biological technologies to interrogate the structure-function of TGF- β superfamily signaling mechanisms. The Thompson Laboratory is focused on understanding the interplay of extracellular antagonists and how they bind with differential specificity to TGF- β family members. Using the follistatin-family antagonists as a model system, his lab has shown antagonist-ligand specificity is complicated involving features of both the ligand and antagonist, as well as conformational changes that can accommodate different antagonist-ligand pairs. Work has extended to the DAN family of BMP antagonists and their crosstalk with other signaling pathways and challenging delineation of activin-receptor ternary complexes which is revealing new paradigms of signaling specificity.

After undergraduate studies in chemistry and postgraduate studies in computational biology, Thompson earned a PhD in the laboratory of Dr. Ivan Rayment (University of Wisconsin) where he acquired rigorous training in structural biology with an emphasis on X-ray crystallography. As a post-doctoral fellow, he trained with Dr. Theodore Jardetzky (Northwestern University) where he initiated his work on the TGF- β family. During this time, Dr. Thompson solved the first structure of an activin class ligand in complex with its type II receptor and the structure of activin in complex with the extracellular antagonist, follistatin.

Dr. Thompson serves on the Scientific Advisory Board for both Acceleron Pharma (a company broadly focused on therapeutic modulation of TGF- β) and Eclode (a company focused on AAV therapy targeting the TGF- β family member, myostatin). He is an elected Council member and current President of the Society for Experimental Biology and Medicine.