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# Keynote 4, Prof. Yvonne Jones: From structure to mechanism in the assembly and modulation of cell surface signalling complexes.

*Thursday, 10 October 2019 09:00 (40)*

In my laboratory we combine crystallographic, biophysical, electron and light microscopy based approaches into integrated structural biology analyses to study the assembly and modulation of cell surface signalling complexes involved in development and tissue homeostasis. We aim to generate mechanistic insights, at atomic resolution, which can be tested by functional studies in vitro and in vivo. I will discuss some of the recent results we have generated by applying this approach to the signalling mechanism of the semaphorin-plexin cell guidance system and to the extracellular modulation of signalling by the morphogen Wnt. Published examples of our work on these two systems include the following:

D. Rozbesky, *R.A. Robinson, V. Jain, M. Renner, T. Malinauskas, K. Harlos, C. Siebold, and E.Y. Jones.* (2019) Diversity of oligomerization in Drosophila semaphorins suggests a mechanism of functional fine-tuning. Nature Commun. 10, 3691.

Y. Kong=, B.J.C. Janssen=, T. Malinauskas, V.R. Vangoor, C.H. Coles, R. Kaufmann, T. Ni, R.J.C. Gilbert, S. Padilla-Parra, R.J. Pasterkamp*and E.Y. Jones* (2016) 'Structural basis for plexin activation and regulation.' Neuron 91, 548-560

S. Kakugawa=, P.F. Langton=, M. Zebisch=*, S. Howell, T.-H. Chang, Y. Liu, T. Feizi, G. Bineva, N. O'Reilly, A.P. Snijders, E.Y. Jones* and J.-P. Vincent*. (2015) 'Notum deacylates Wnts to suppress signalling activity.' Nature 519, 187-192

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**Session Classification :** Keynotes and Short talks 3