

# New Vistas in the Asymmetric Construction of C-C Bonds: Total Synthesis of Complex Bioactive Agents

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The seminar will describe the development and application of stereoselective transition metal catalyzed higher-order carbocyclizations and allylic substitutions to the total synthesis of complex bioactive agents.<sup>[1,2]</sup> Specifically, we will provide our approach to emulating terpene biosynthesis and a new approach to the construction of quaternary carbon stereogenic centers. Hence, the first part will outline our approach to the development and understanding of new transition metal-catalyzed higher order reactions and their application to the synthesis of complex terpenes.<sup>[3]</sup> In contrast, the second part will outline the development of new rhodium-catalyzed allylic substitution reactions for the enantioselective construction of acyclic quaternary carbon stereocenters, which are embedded in numerous bioactive agents.<sup>[4,5]</sup>

## References

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## Biography

P. Andrew Evans is the *Alfred R. Bader Chair of Organic Chemistry* and a *Tier 1 Canada Research Chair in Organic and Organometallic Chemistry* in the Department of Chemistry at Queen's University. He received a B.Sc. with honors in Applied Chemistry at Newcastle Polytechnic in 1987 and a Ph.D. at the University of Cambridge in 1990 under the supervision of Andrew B. Holmes, FRS. He then completed postdoctoral studies with Philip D. Magnus, FRS, at the University of Texas at Austin as a NATO Postdoctoral Fellow. In 1993 he initiated his independent career at the University of Delaware, where he rose through the ranks to Professor before moving to Indiana University in 2001. In 2006, he moved to the University of Liverpool where he was the *Heath Harrison Chair of Organic Chemistry* before moving to his current position in July 2012. Recent awards include the *ACS Cope Scholar Award*, *RSC Pedler Award*, *Royal Society Wolfson Research Merit Award*, *Pfizer Award for Creativity in Organic Chemistry*, *Johnson and Johnson Focused Giving Award*, *GlaxoWellcome Chemistry Scholar Award*, *Camille Dreyfus Teacher-Scholar Award*, *Eli Lilly Grantee Award* and *Zeneca Excellence in Chemistry Award*. He has also served on *ACS Division of Organic Chemistry as a Member-at-Large*; *Councilor*, *National Organic Symposium Executive Officer* and *Chair*. Additionally, he has also served the *Chem. Comm. Editorial Board* and he is currently an *Associate Editor for Synthesis*. He has published more than 100 papers, articles, reviews and monographs, in addition to delivering nearly 500 plenary and invited lectures.