



(photo credit: Michael Holly)

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Rich Palmer is a Fellow of the Royal Society of Canada and has been a Professor of Biological Sciences at the University of Alberta since he obtained his PhD at the University of Washington (Seattle). He and his students study the development and evolution of animal morphology, with a special focus on developmental plasticity and morphological asymmetry. His seminal papers on fluctuating asymmetry constitute the methodological reference worldwide for studies of developmental stability. His work has yielded valuable insights into the causes and adaptive significance of several striking examples of developmental plasticity in animals and structures as diverse as snail shells, crab claws, barnacle legs and penises, and sea star arms. In addition, his studies of the development, genetics and evolutionary history of conspicuous left-right morphological asymmetries in a wide array of organisms have yielded some of the strongest evidence to date for a 'genes as followers' mode of evolution. His lab continues to explore the interplay between developmental plasticity and evolution on both ecological time scales (via descriptive and experimental studies) and evolutionary time scales (via comparative studies).

His particular fondness for crustaceans has yielded intriguing answers to puzzling questions about many aspects of crustacean biology: Why do more derived barnacle species have more lateral shell plates than more primitive ones (a puzzle that confounded Darwin)? How can one species of barnacle produce legs and genitalia that function effectively over a huge range of wave exposures? How do individual barnacles that are too far away from a partner to copulate nonetheless end up with fertilized eggs? Do crab claws exhibit developmentally plastic changes in form in response to diets of different toughness? Are the safety factors of claws from large crabs higher or lower than those from small crabs? How did the spectacular claws of snapping shrimp evolve from less specialized progenitors, within Alpheidae, within

Palaemonidae, and within Caridea as a whole? What determines direction of claw asymmetry in shrimp, lobsters and crabs: genes, environment or chance?

Home page: <http://www.biology.ualberta.ca/palmer.hp/palmer.html>