AVIEZRI FRAENKEL, Weizmann Institute of Science, Rehovot, Israel *Can one perceive the alpine wind of a game?*

Nim and chess are both combinatorial games with perfect information and no chance moves. Why is Nim easy and chess hard? There are several mathematical differences between them. Previously we have launched a concentrated attack on each of the differences separately, since this divide-and-conquer approach has a better chance of answering our question than a direct attempt to scale the sheer cliff separating polynomial Nim from Exptime-complete chess. We thus ascended from sea-level Nim towards alpine-heights chess at a moderate gradient, by gradually introducing into Nim more and more complications in a natural order of increasing complexities. What happens at the higher elevations, when we have already introduced cycles and a capture rule, but games are still impartial? We will attempt to show how one can hear and feel the breeze of the crisp alpine wind blowing out of such games. The talk is dedicated to Richard Guy, who is both a leading gamester and a keen member of the Alpine Club of Canada; both of these activities made him 90 years young!