

MESOZOIC AND CENOZOIC ASSEMBLY OF THE NORTH END OF THE NORTH AMERICAN CORDILLERA BY CONVERGENCE AND TRANSLATION

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Despite the numerous terrane names, the assembly of Alaska and adjacent regions can be simplified by considering the region as a series of convergent/collisional margins. Debate continues over how extensive some of the margins were and how great a role later extension and translation played in shaping the current crustal section. This talk will break Alaska and adjacent areas into three tectonic regions, each with a unique history prior to the Jurassic or Cretaceous, separated by major, long-lived fault systems with multiple periods and types of slip. Recent geophysical transects across the major faults and many of the largest terranes, combined with the geologic histories, will be examined to illustrate which processes dominated during assembly of the crust we see today. The three tectonic regions from north to south are Arctic, Interior, and Southern Alaska. The major event in Arctic Alaska was Jurassic subduction and Cretaceous collision of a 2500 km. long continental margin with an island arc. The Tintina fault system separates this collisional event from Interior Alaska, where an ensialic island arc and North America also collided in the Jurassic, producing a regionally extensive metamorphic terrane locally strongly overprinted by middle Cretaceous extension. The southernmost collisional event in the middle Cretaceous to Paleocene brought oceanic arc and subduction complexes against the preassembled Interior along a cryptic boundary which became overprinted by the Denali strike-slip system. Subduction and collision processes continue today along the southern and southeast Alaska margins.