

JOI/USSAC
Distinguished Lecturer Series
1992

**INVESTIGATING THE PLUMBING OF ACCRETIONARY PRISMS
USING THE JOIDES RESOLUTION, ALVIN, AND A ROCK HAMMER**

Dr. J. Casey Moore, U. of California, Santa Cruz

Dr. Moore has been involved with ocean drilling since DSDP, serving as Co-Chief Scientist for Legs 66 (Middle America Trench) and 78A (Barbados Ridge). He returned to the Barbados Ridge as Co-Chief of ODP Leg 110. In addition to his ocean drilling experience, he has participated in four *Alvin* dive programs along the Cascadia accretionary prism and has studied subaerially exposed accretionary prisms in Alaska and the Pacific Northwest. Dr. Moore's lecture will focus on the synergism of structural and hydrogeologic evolution in accretionary prisms. Using submersible studies he will show how biological communities define the surface occurrences of fluid flow. He will demonstrate the power of ODP drilling in physically and chemically probing the nature of deforming accretionary prisms, revealing the source depths of fluids and providing examples of the relationships between structures, fluid flow, and water-rock interactions. Finally, using studies of exhumed accretionary prisms, he will show how the coupling of fluid and structural evolution continues deep into prism interiors and strongly influences the geology of mountain belts.