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Uncovering patterns in biodiversity through environmental DNA

Ecosystems are undergoing rapid changes globally, resulting in changes to local biodiversity. It is increasingly important to be able to monitor these changes and the scales on which they are occurring. Genetic tools like environmental DNA (eDNA) analysis offer a way to detect a wide diversity of organisms from a single sample. With eDNA analysis, we can detect material that organisms leave behind as they travel through the water column, such as shed skin, excrement, or mucus. Since eDNA sample collection involves filtering water instead of collecting whole organisms, it can be obtained on scales not possible through traditional methods of biodiversity monitoring. It can also allow us to go back in time and gain a picture of what ecosystems looked like in the past through archived samples. This seminar will discuss how we've used these genetic techniques to examine how biological communities have changed in Monterey Bay over 10 years and how our genetic results align with what we know about ecosystem patterns within the California Current. Together with advances in autonomous sampling platforms like the Environmental Sample Processor and long-range autonomous underwater vehicles at MBARI, eDNA analysis offers a novel way to sample biological communities that will expand our ability to detect and monitor ecosystem change.

Registration for this seminar is required and space is limited. [Please RSVP here.](#)