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It’s the small things that really matter

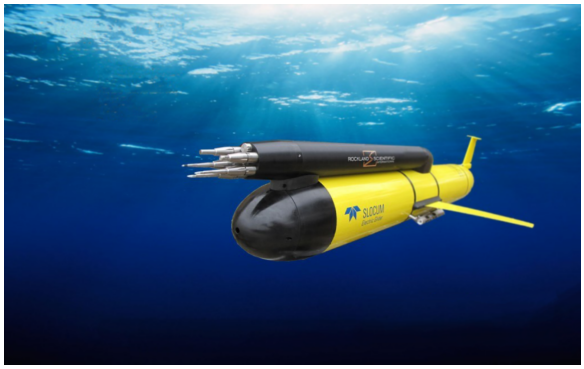
Lakes are always in motion. Whether you're kayaking, paddleboarding or simply floating, you may have felt currents or seen waves moving across the surface. Are these motions important for lake health? Surprisingly these specific motions have little effect on the biota, the clarity, or the water quality. The motions that really matter are the tiniest motions, known as turbulence.

Turbulence:

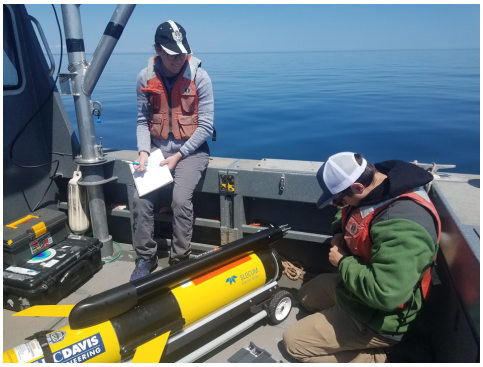
- Helps phytoplankton and attached algae take up nutrients
- Transports oxygen into the sediments
- Allows clarity-impeding fine particles to aggregate together and settle quicker

What do we know about turbulence in Lake Tahoe? Actually, very little.

Although some of the earliest lake turbulence measurements were done in the 1970s at Lake Tahoe, little has been done since then. One reason is that these minute motions are difficult to measure and the necessary equipment is expensive and fragile. Measurements need to be made continuously every $1/100^{th}$ of a second and be able to resolve temperature changes of $1/1000^{th}$ of a degree. Fortunately, we now have the technology to do this, albeit with teething issues. UC Davis graduate student Drew Friedrichs is blazing this path by using an underwater glider with a “microRider” turbulence probe attached. His work may lead to an improved understanding of environmental health at Lake Tahoe.



The underwater glider with the turbulence probe attached.



Graduate students Drew Friedrichs and Jasmin McInerney preparing for a launch.

Questions? Email tercinfo@ucdavis.edu

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