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Department of Marine Sciences
Presents a Seminar by

David Morse

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Circadian rhythms: specializing cells for different roles at different times of day

Circadian rhythms are the output of endogenous timers called circadian clocks, and are thought to increase fitness by aligning cell metabolism to daily environmental changes. We have studied rhythms in the unicellular marine dinoflagellate *Lingulodinium polyedra* to try and understand the biochemical bases of rhythms in bioluminescence, photosynthesis and the cell cycle. Previous work has indicated that modification of either enzyme or substrate levels are possible strategies by which a clock controls metabolism. We have also used high throughput techniques involving nucleic acid and protein sequencing to look for macromolecular changes in an unbiased fashion. While transcriptomic analyses have shown no detectable changes in transcript levels over the circadian period, proteomic analyses have identified thirteen proteins whose levels vary. More recently we have begun ribosome profiling to examine changes in protein synthesis rates. Initial results indicate ribosome profiling is robust and replicable, and that several thousand transcripts show rhythmic transcription rates.

Host: Senjie Lin
Time & Date: 11:00 am, Friday, December 6, 2019
Place: Marine Sciences Building, Seminar Room 103

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