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# DISCOVR Q1 Slides: Spectroradiometric Monitoring

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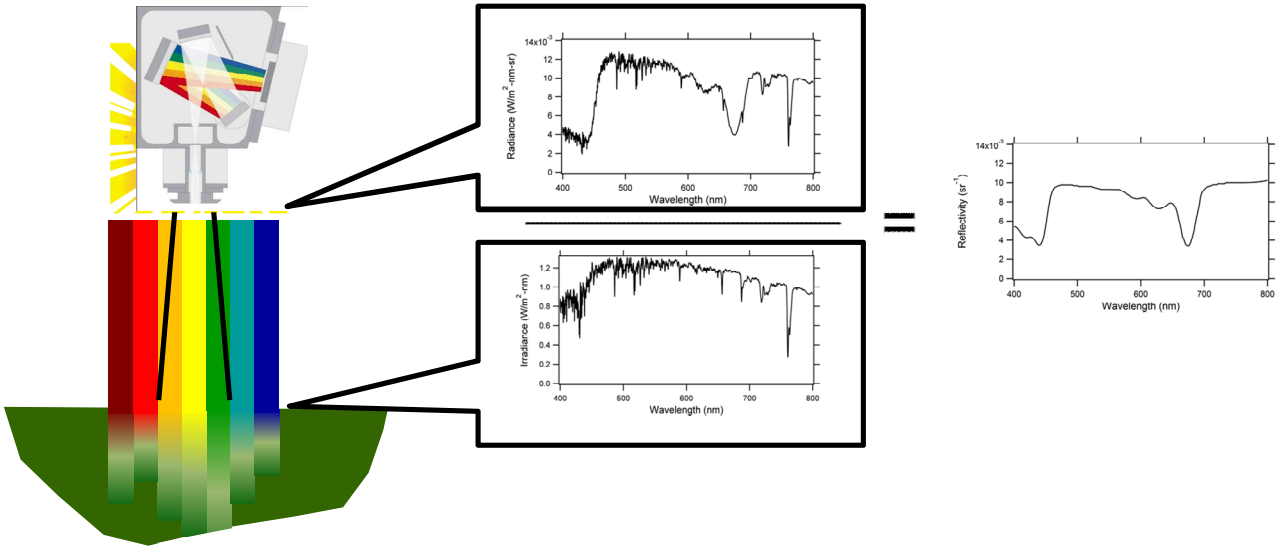
# Spectroradiometeric Monitoring for Creation of Robust Signatures of Pond Infection (SNL)

Goal: *Identify and characterize the spectral signatures resulting from the interaction of algae with multiple, diverse pests relevant to production scale algal culture in a stand-off fashion.* We have deployed the spectroradiometric monitoring approach for measuring biomass in the field and have anecdotal evidence for early crash detection, but need validation of signatures.

Approach:




Relevance:

- Inexpensive, fully scalable technology (beaker to satellite)
- Real-time, process control potential
- Provide baseline data to quantify the benefits of early detection w.r.t. reducing the number of pond crashes

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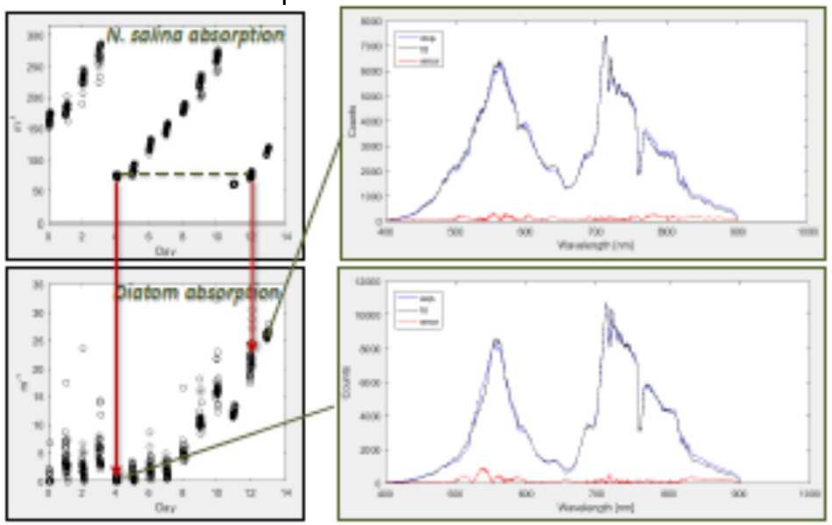
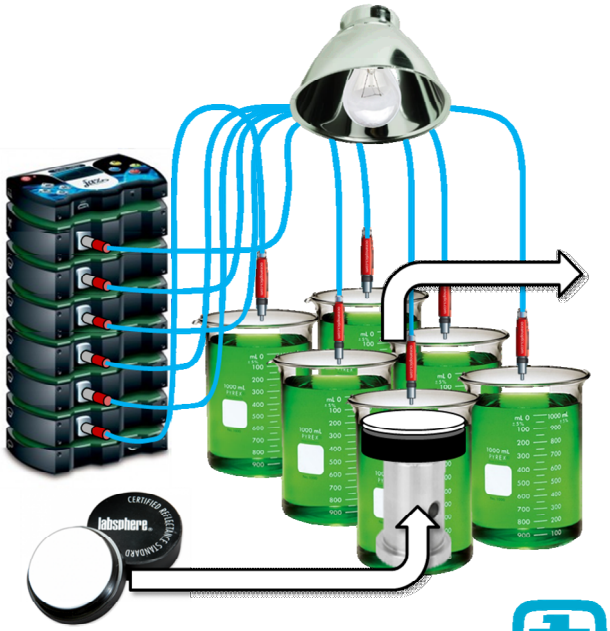
# Spectroradiometeric Monitoring: Planned work in FY17 (SNL)

Analysis of field trial data from crashing ponds already collected in the recent ATP3 AFS trials to identify optical signatures of functional pest presence and laboratory scale

Example: Detection of a diatom invasion of *N. oceanica* KA32. Direct detection of changes in the absorption spectrum due to presence of diatoms.




Multifactorial (temp and salinity) experiments on one algal/pathogen pair to validate and assess the sensitivity and specificity of the optical biomarkers under relevant (and highly variable) field conditions.

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