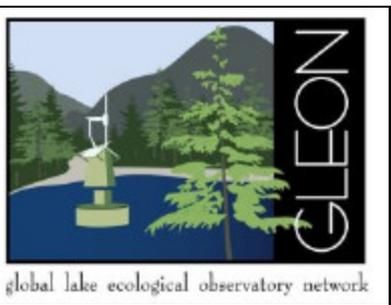
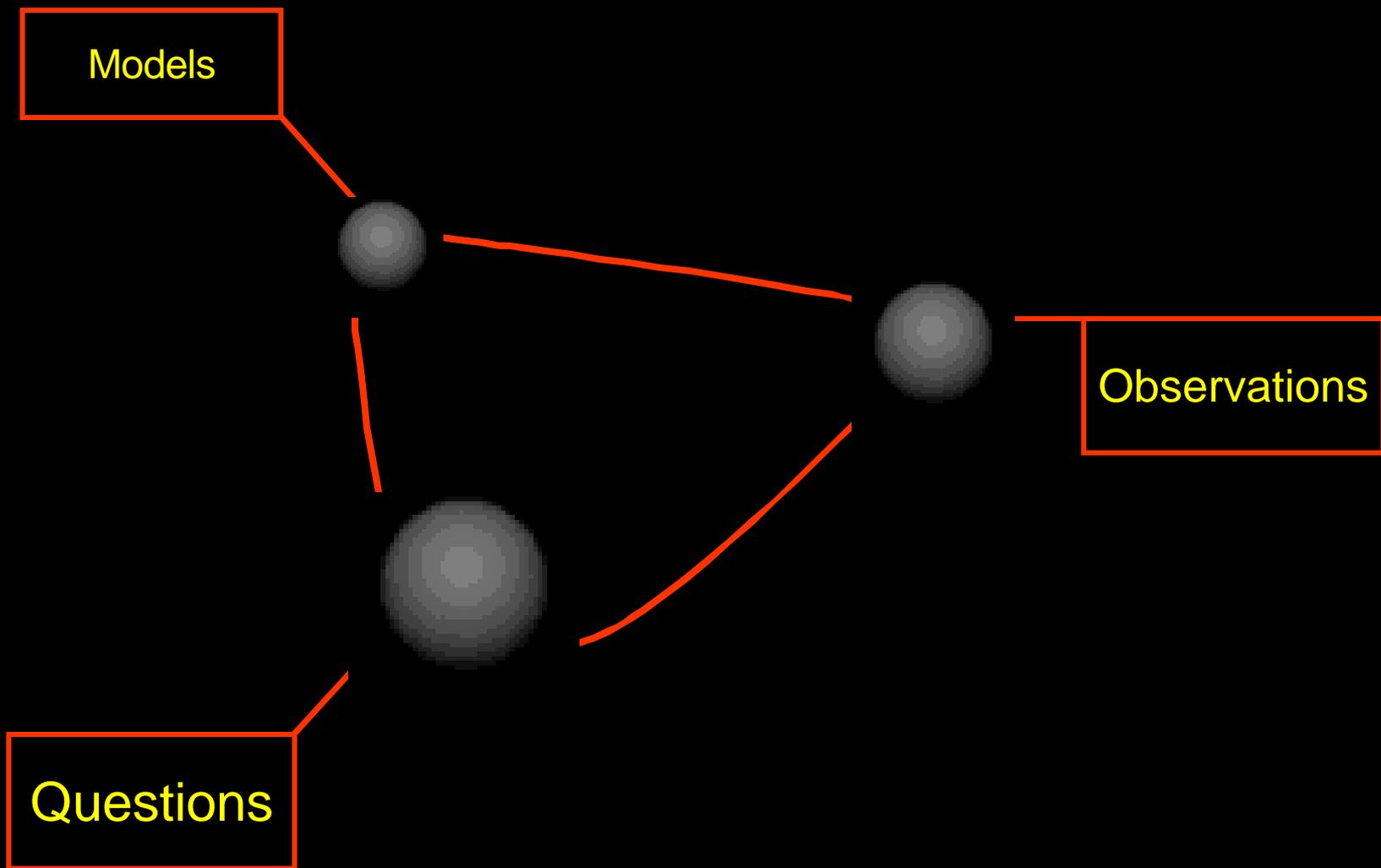


GLEON RCN





What is an RCN?

- U.S. NSF program designed to bring scientists together to focus on a specific topic that can best be addressed by a network. “The goal of this program is to encourage and **foster interactions among scientists to create new research directions or advance a field.**” (NSF RFP)

What is our RCN?

- A strategic initiative of GLEON.
- Research Coordination Network; “*RCN: Advancing **Lake Ecology** by Building an **International Community** to Exploit Innovations in **Sensor Network Technology**”* (GLEON RCN)
- Three foci: science, people, technology
- We are funded for 5 years, beginning March 2007

GLEON RCN

1. Administrative infrastructure
 1. Marilyn Larsen (Program Coordinator)
 2. Steering Committee
 3. Web site (<http://GLEON.org>)
 4. Document management (<http://owl.GLEONRCN.org>)
2. Fund an annual meeting
 1. Experts from multiple fields
 2. Students
 3. Representatives from key organizations
3. Support between-meetings activities
4. Fund graduate student-exchanges

GLEON-RCN Steering Committee



Tim Kratz
Univ. Wisconsin
USA



Peter Arzberger
Univ. California-San Diego
USA



David Hamilton
Univ. Waikato
New Zealand



Fang-Pang Lin
National Center for
High Performance Computing
Taiwan



Paul Hanson
Univ. Wisconsin
USA



Ami Nishri
Limnology and Oceanographic Research Center
Israel



Barbara Benson
Univ. Wisconsin
USA



Carol Brewer
Univ. Montana
USA



Cayelan Carey
Cornell Univ.
USA



John Cole
Cary IES
USA

China

es

Science Goals

1. **Advance the science** that requires a global network of sensed-lakes.
2. Articulate the data and metadata **standards** required to advance the science.
3. Develop ecosystem **models** that maximally exploit information content of sensor data.
4. **Disseminate** to the community the **outcomes** of the RCN to inform other national sensor network efforts.

Technology Goals

1. **Inform** RCN members of recently developed information technologies, and **engage** them in the development of the requirements for the next generation of information technologies.
2. Inform information technologists on new ecological science and **modeling directions**.
3. Identify, prioritize, and develop plans to address **common needs**.
4. Share outputs on requirements and **best practices** broadly with the community.

Community Goals

1. **Integrate** junior scientists (students, postdocs, beginning faculty) in RCN activity to inform, train, and mentor.
2. **Prepare** the next generation of scientists for large, collaborative, international, interdisciplinary science.
3. Engage researchers and funding agencies in individual countries to build a **diverse international community**.

Science

Technology

Community

Aquatic ecologists

Information technologists

Physical limnologists

Computer scientists

Sensors

Network hw/data stream

Controlled vocabulary

Data

Data models

QA/QC

Federation

Physical-chemical-biol

Data delivery

Metabolism

Models

Pattern recognition

Statistical

Signal processing

Visualization

Visualization

Other supporting data

Inference

Analysis

The "ecological story"

Interpretation

Some expected outcomes

Group organization and discovery

1. Agreement for **common measurements**. Catalog of the data structures and **ontologies** from sites.
2. Cyberinfrastructure **requirements** that allow **data sharing** among sites.
3. Recommendations for new sites that do not have sensors or that may be expanding.
4. Examples of empirical models connecting **drivers and response** variables. Recommendations for scales at which processes need to be modeled or explored further.
5. **Knowledge base** for lake researchers, including research, sensors, measurement frequency, and other information useful for the community

More expected outcomes

Process model development and intersite exchange

1. Growth in sites, available data, and expertise to drive stability and error **testing of models** across wide **geographical gradients**.
2. **Specifications** for an application of coupled physical and biological models.
3. **Alternative methods** for analyses based on the availability of observations and the scales of those observations.
4. **Data** are available **on-line** and available to research projects addressing metabolism.

Even more expected outcomes

Best practices, implementation, and diversification

1. Widely disseminated **best practices for the measurement** and calculation of lake metabolism.
2. Plans developed to create the cyberinfrastructure and **distributable software** for modeling ecosystem process.
3. **Publications and presentations** of new models, community infrastructure requirements, and new questions that can be posed with a global network of lake observatories.
4. **Address question** of how lake physical attributes, geologic setting, and regional climate influence lake processes across scales.
5. **Proposals and awards** that follow-up on interactions, insights, and requirements.



Thank you!