



# GLEON GSA NEWSLETTER



ISSUE 3

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“O Annie Buoy”



## Launch of the GLEON Fellowship Program:

Exciting times for GLEON Fellows at NH workshop. By Aline Jaimes and Kirsten Winters



Front row (from left to right): Hilary Dugan, Richard Lestyn, Kathleen Weathers, Paul Hanson, Aline Jaimes, Emily Nodine, Samantha Oliver, Grace Hong. Back row (from left to right): Stephen Crowley (knees), Arianto Santoso, Emily Read, Amy Hetherington, Jennie Brentrup, Kirsten Winters (behind Jennie), Vijay Patil, Jessica Corman, Amy Kamarainen. Far back row (from left to right): Michael O'Rourke, Luke Winslow, Jake Zwart. (Photo by: Midge Eliassen)

The Lake Sunapee Protective Association (LSPA) played host to a cohort of graduate students and scientists involved in the first GLEON Fellowship training workshop. From January 18<sup>th</sup>- 23<sup>rd</sup> 2013, we had the opportunity to interact with each student, with members of the LSPA and members of the greater Lake Sunapee (New Hampshire, USA) community.

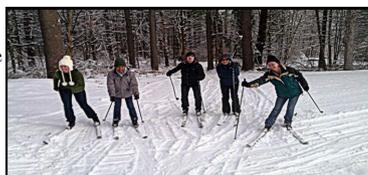
The workshop and fellowship program were created to help early career scientists and graduate students to develop bonds with other scientists, to build skills for doing “team science,” and to share and learn analytical skills for answering challenging research questions about lake ecosystem science using large datasets. While at the workshop, the cohort explored datasets and developed research questions about how lakes and their functions vary across the United States, as well as over time. We split into smaller working groups of our choice in order to develop a long-term research plan, which will direct the work we do over the next year. Most of the cohort chose their group based on

the potential for gaining practical skills complementary to personal future research. For example, one working group activity planned for the upcoming year includes online meetings where technical skills are shared and developed. One working group will focus on landscape-scale spatial variability of water quality in the context of human population and development, while the other group will focus on high frequency temporal dynamics across a collection of GLEON lakes.

The workshop and fellowship leadership team, Emily Kara Read and Kathleen Weathers (Cary Institute of Ecosystem Studies), and Paul Hanson, Grace Hong and Luke Winslow (University of Wisconsin) set the tone for the week for both working and playing hard! The week, itself, was full of highlights including a talk and discussion on metabolism led by Jon Cole. For some of our Fellows (including Aline Jaimes from Mexico/Texas, Ari Santoso from Indonesia/New Zealand, and Emily Nodine from Florida), it was the first time they had experienced ‘wintry’ joys such as cross-country skiing and seeing a frozen lake! For others, it was the first time visiting the northeast. When we had a chance to explore Lake Sunapee, Kathie Weathers, a scientist connected through family and research to Lake Sunapee, played tour guide to some of us New Hampshire “novices.” We gained understanding of the landscape through conversation during walks along the lake’s banks and visiting the LSPA buoy. We also hosted a community dinner where the fellows gained a greater appreciation of the work being done by the LSPA and the value the community places on understanding lake processes. Through both the vision of the workshop organizers and the genuine hospitality and accommodations provided by the LSPA, we, (as a fellowship cohort), were allowed time and space away from the normal pressures of graduate school life to connect and create with others who have the same general research interests. Overall it was a great experience and we are looking forward to attending the next workshop in beautiful Wisconsin in August.

The fellowship program is funded by U.S. National Science Foundation Awards #1137353, #1137327 (MacroSystems Biology Program).

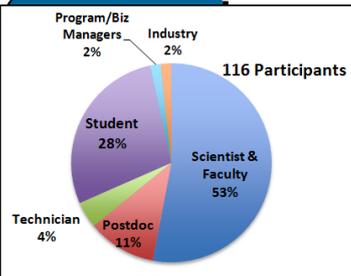
Fellows, Jessica Corman, Arianto Santoso, Richard Woolway, Aline Jaimes and Emily Nodine try out cross-country skiing at Dexter’s Inn, NH.



Fellows in front of Dexter’s Inn, NH.



## GLEON 14, Mulranny, Ireland



GLEON 14 participants planting an oak tree on the grounds of the Marine Institute research station, a token to off set some of our carbon footprint. Photo by Ger Rogan.

A total of 116 GLEON members from 21 countries and 25 nationalities gathered to participate in the GLEON 14 annual meeting in Ireland. The meeting agenda was packed tight throughout the day with events including the GSA workshop, world café session, poster session, public plenary session, working group meetings, tutorial sessions and bread making. The only downside to the meeting was there was not enough time to do it all and see beautiful Ireland.

For the final day of the meeting, GLEON 14 participants were taken on a visit to local historical sites including the Burrishoole Abbey where they were accompanied by a local historian. Later that morning, the field trip continued around the Marine Institute research station in Burrishoole. The Burrishoole Catchment has been a site for fisheries research since the late 1950s. The unique long-term dataset for salmon, trout and eels has resulted in the Burrishoole system becoming an index system for fisheries management and research in the north Atlantic.

Since the 1990s, the expansion of the environmental monitoring platforms at the Marine Institute research station and through involvement with Dundalk Institute of Technology and GLEON has helped amplify the sites importance and suitability for climate change research, particularly in relation to climate, land-use and water interactions. The integration of the fish stock, macroinvertebrate and plankton data with environmental monitoring provides a unique opportunity to support the fisheries ecosystem advisory approach for salmonids and eels.

## GSA planning for GLEON 15 in Argentina

Planning is in progress for the GLEON 15 All-hands Meeting, to be hosted by GLEONites Drs. Cintia Piccolo and Gerardo Perillo at Instituto Argentino de Oceanografía (IADO, <http://www.iado-conicet.gov.ar/>) in Bahia Blanca, Argentina (4-8 November 2013).

GLEON 15 Student Travel Fellowship will be announced in the coming months. The Student Travel Fellowships will provide opportunities for students to attend and participate in GLEON 15. The funding is limited, so we strongly encourage you start seeking other funding options to support your travel expenses — if you are not awarded the GLEON Student Travel Fellowship or it does not cover your expenses in full. We recommend consulting with your advisor, university and your regional funding agencies for potential supplemental travel grants. If you have any questions regarding the GLEON student travel fellowships please contact Liz Ryder: [elizabethryder2010@gmail.com](mailto:elizabethryder2010@gmail.com).

## GLEON Science Video Library

Grab your cameras now, and bring short movie clips to G15!

Inspired by the G14 Student Workshop co-leads Hilary Swain (Archbold Biological Station, USA) and Justin Brookes (University of Adelaide, Australia) from the group exercises on communicating science and the use of multimedia, a project team has been formed within the GSA led by our co-chair elect Jennie Brentrup for launching “GLEON science storyboard initiative” in the near future.

There came the idea of GLEON ‘science-in-action’ video library in the process of planning the storyboard initiative — we would like to collect footage of GLEONites (ALL members — both students and non students are welcome to contribute) doing field work, participating in education or conservation activities, working on sensors, buoys or any lab work, BBQ with lab mates, ice skating, etc.), especially as summer is approaching (well it is still summer for us in New Zealand and soon for folks in the northern hemisphere), so please take out your phones and cameras, start shooting footages of what we aquatic researchers are doing out there! This is an experimental idea that may serve as materials for the storyboard initiative.

Please keep the clips short: a maximum time of **2 minutes** with **no narration** and **no editing required**. **So please start making video clips!** Here are some examples clips taken by Kohji Muraoka and Dan Pratt: <http://goo.gl/x3F3M>

The creator acknowledgement, terms for usage and reference, upload method and storage details will be forthcoming in the next few months.

For further information please contact Kohji Muraoka at [kml12@waikato.ac.nz](mailto:kml12@waikato.ac.nz)

Photos of story boards at G14 GSA workshop



## GLEON 14: GSA feedback



Photo 1: Taken by Anna Rigosi.

### GLEON 14 Graduate Student Association attendees.

*Back:* Jake Zwart, John Hernandez; *Next row:* Jennie Bentrup, Luke Winslow, Jianming Deng, Yan Shen, Giulia Valerio, Urmas Anijalg; *Next row:* Ludmila Silva Brighenti, Emily Nodine, Lindsay Hislop, Mikkel Andersen, Arianto Santoso, Vicky Veerkamp, Alo Lass. *Next row:* Nicole Hayes, Chelsea Weirich, Kohji Muraoka, Liz Ryder, Taylor Leach, Laura Gagliard, Daniel Szymanski. *Front Row:* Lucy Crockford, Marla Lima, Nicole Gallina, Tony Worm, Richard Woolway.

Missing from the photo: Dominic Vachon, Amy Hetherington, Lyubov Bragina, Sam Fey, Agron Idrizaj, Jasper Christensen, Yang Yang.

### GSA members quotes from G14:

- ***My first GLEON and I loved it.***
- You feel good, part of it and it is easy to participate.
- ***Me too! Really enjoyed the week.***
- Very good, more tutorial sessions
- ***Fantastic meeting, really easy for new comers to jump in.***
- Interesting topics covered over the week; the public session on Global Water Management was enjoyable.
- ***I enjoyed the World Café discussions.***
- Thanks for a fantastic meeting, well done to all.
- ***Congratulations!! Thanks to all.***
- I really liked the addition of the tutorial sessions to the G14 program.
- ***Monday GSA workshop was AWESOME. It's the reason I think GLEON kicks Buoy!!!***
- An extra day for the GSA workshop at the beginning or at the end would be great
- ***Very good meeting for students. Good interactive, good integration among research groups.***
- Important for scientific career. I really enjoyed the meeting.
- ***I enjoyed three kinds of potatoes dishes every meal then!***
- The meeting was great; the tutorial sessions were a great idea.
- ***Involve ↔ involved***
- Thank you very much again for your amazing team efforts. The Friday field trip was very informative and went smoothly.
- ***I loved the afternoon tea, and I enjoyed having three choices of potatoes (Fries, potato salad and mashed potato) at dinner.***
- Thousands of thanks to all the staff in the Marine Institute and Dundalk Institute of Technology. Go raibh mile maith agaibh :)
- ***Thank you so much for a wonderful week!***
- I think GLEON is a great success – congratulations to all involved.
- ***Tutorials were great***



Photo 2: Collage of GSA activities at GLEON 14 (taken by Ger Rogan and Grace Hong; edited by Kohji Muraoka)

## Postdoc life....

### Working at the Interface of Science and Policy by Kevin Rose



Have you ever wanted to learn more about government policy and participate in the policy creation process? The American Association for the Advancement of Science (AAAS) hires approximately 125 Ph.D. level scientists every year to work in most branches of the US federal government as Science and Technology Policy fellows (<http://fellowships.aaas.org/>). Fellows gain experience working at the interface of science and policy in agencies such as the US National Science Foundation (NSF), United States Geological Survey (USGS), National Oceanic and Atmospheric Association (NOAA), State Department, US Agency for International Development (AID), among others, for a period of 1-2 years. While very competitive, the AAAS fellowship experience builds on skills possessed by GLEON members, including the ability to think and work inclusively across borders and to engage with a diversity of individuals.

As a current AAAS Science and Technology Policy Fellow, I work at the US National Science Foundation in the Directorate for Geosciences. In this capacity, I focus primarily on global environmental change policy programs, including the Belmont Forum. The Belmont Forum ([www.belmontforum.org](http://www.belmontforum.org)) represents a new network of international partners dedicated to understanding global change. Countries participating in the program include the US, Canada, Great Britain, France, Germany, Russia, China, Japan, India, Australia, South Africa, and Brazil. Through the Belmont Forum, I'm working on a program focusing on freshwater security, leveraging many of the skills and networks I built through GLEON.

The AAAS Science and Technology Policy Fellowship is a great experience which provides scientists the opportunity to engage in policy creation, continue their academic engagement, and foster an enlightened perspective at the interface of science and policy. Much like an academic postdoc position, AAAS Science and Technology Policy fellows learn new skills, continue to publish, and develop new collaborations and professional networks. However, the skills that fellows learn offer up new professional opportunities and networks beyond academia. While the AAAS program is only open to US citizens, there are many similar programs (including through AAAS affiliated organizations) that do not require US citizenship.

There is much to be gained by working at the interface of science and policy. The work can be extremely rewarding and fulfilling and if you're interested in it, I encourage you to explore the opportunities!



SCIENCE &  
TECHNOLOGY POLICY  
FELLOWSHIPS



Picture of AAAS Science and Technology Policy Fellows in front of US Congress

## Early Career and Student GLEONites' Research

Anna Rigosi published a recent research paper, Rigosi, A., & Rueda, F. J. (2012). *Propagation of uncertainty in ecological models of reservoirs: From physical to population dynamic predictions*. *Ecological Modelling*, 247, 199-209.

Cayelan Carey published a recent paper, Carey, C. C., Ibelings, B. W., Hoffmann, E. P., Hamilton, D. P., & Brookes, J. D. (2012). *Eco-physiological adaptations that favour freshwater cyanobacteria in a changing climate*. *Water Research*, 46(5), 1394-1407.

Chris Solomon and many GLEON members recently published, Christopher T. Solomon, Denise A. Bruesewitz, David C. Richardson, Kevin C. Rose, Matthew C. Van de Bogert, Paul C. Hanson, Timothy K. Kratz, Bret Larget, Rita Adrian, Brenda Leroux Babin, Chih-Yu Chiu, David P. Hamilton, Evelyn E. Gaiser, Susan Hendricks, Vera Istvanovics, Alo Laas, David M. O'Donnell, Michael L. Pace, Elizabeth Ryder, Peter A. Staehr, Thomas Torgersen, Michael J. Vanni, Kathleen C. Weathers, and Guangwei Zhu. (2013). *Ecosystem respiration: Drivers of daily variability and background respiration in lakes around the globe*. *Limnol. Oceanogr.*, 58(3), 2013, 000-000

Conrado Rudorff published a recent paper, Rudorff, C. M., Melack, J. M., MacIntyre, S., Barbosa, C. C., & Novo, E. M. (2012). *Correction to "Seasonal and spatial variability of CO2 emission from a large floodplain lake in the lower Amazon"*. *Journal of Geophysical Research: Bio geosciences*, 117(G1).

Gabriel Yvon-Durocher and GLEON colleagues recently published in Nature, Gabriel Yvon-Durocher, Jane M. Caffrey, Alessandro Cescatti, Matteo Dossena, Paul del Giorgio, Josep M. Gasol, Jose´ M. Montoya, Jukka Pumpanen, Peter A. Staehr, Mark Trimmer, Guy Woodward & Andrew P. Allen. (2012). *Reconciling the temperature dependence of respiration across timescales and ecosystem types*. *Nature* doi:10.1038/nature11205.

Lucas Beversdorf is the main author of a recent publication, Beversdorf, L. J., Miller, T. R., & McMahon, K. D. (2013). *The Role of Nitrogen Fixation in Cyanobacterial Bloom Toxicity in a Temperate, Eutrophic Lake*. *PloS one*, 8(2), e56103.

Ludmila Silva Brighenti is a co-author in a recent publication, Bezerra-Neto, J. F., Brighenti, L. S., Mello, N. A. S. T. D., & Pinto-Coelho, R. M. (2012). *Hydroacoustic assessment of fish and Chaoborus (Diptera-Chaoboridae) distribution in three Neotropical lakes*. *Acta Limnologica Brasiliensia*, 24(1), 18-28.

Marko Järvinen published a recent paper, Järvinen, M., Drakare, S., Free, G., Lyche-Solheim, A., Phillips, G., Skjelbred, B., Mischke, U., Ott, I., Poikane, S., Søndergaard, M., Pasztaleniec, A., Van Wichelen, J. & Portielje, R. (2013). *Phytoplankton indicator taxa for reference conditions in Northern and Central European lowland lakes*. *Hydrobiologia*, 704(1), 97-113.

Nathan Barros is a co-author in a recent publication, Mendonça, R., Kosten, S., Sobek, S., Barros, N., Cole, J. J., Tranvik, L., & Roland, F. (2012). *Hydroelectric carbon sequestration*. *Nature Geosciences*, 5(12), 838-840.

Ryan Batt is the main author of a recent publication, Batt, R. D., Carpenter, S. R., Cole, J. J., Pace, M. L., Cline, T. J., Johnson, R. A., & Seekell, D. A. (2012). *Resources supporting the food web of a naturally productive lake*. *Limnology and Oceanography*, 57(5), 1443.

Sam Fey published a recent paper, Fey, S. B., & Cottingham, K. L. (2012). *Thermal sensitivity predicts the establishment success of non-native species in a mesocosm warming experiment*. *Ecology*, 93(11), 2313-2320.

If you have recently published a paper or presented at a conference, please send us details, for inclusion in the next issue of the GSA newsletter.

## Jennie: The new GSA co-chair elect!



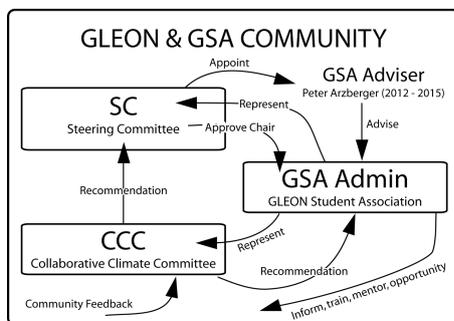
Jennie Brentrup standing in front of the Cascade mountains on a hike around Mt. Hood in Oregon.

Jennie Brentrup was recently elected to serve as the next GSA co-chair following the GLEON 15 meeting in Argentina. She will be following in the footsteps of current co-chair Kohji Muraoka and current chair Liz Ryder.

Originally from Hanover, New Hampshire (NH), Jennie received her undergraduate degree in biology from Colby College in Maine. Currently, she is working towards her Ph.D. under the guidance of Dr. Craig Williamson in the global change limnology lab at Miami University in Ohio. Jennie is broadly interested in using high-frequency sensor data to examine the effects of increased dissolved organic carbon (DOC) concentrations on aquatic ecosystems. She hopes to use a profiling buoy to aid in studying the effects of changes in transparency due to rising DOC concentrations on zooplankton communities.

Jennie's first introduction to GLEON began while working for former GSA chair Cayelan Carey on Lake Sunapee, NH during the summer of 2010. She had the wonderful opportunity to attend the automated stations and high frequency data analysis workshop at Lake Erken, Sweden the following summer and has participated in the two most recent GLEON meetings at G13 in New Hampshire and G14 in Ireland. Jennie has been part of the Signal Processing working group, examining patterns in chlorophyll fluorescence data as well as the Climate Sentinels working group. In addition, she is a member of the GLEON Fellowship's first cohort, which is a graduate student training program funded by the NSF Macro-Systems biology program. The Fellowship had their first meeting in January this year at the Lake Sunapee Protective Association (LSPA) in New Hampshire, which provided the perfect location to interact with some very interesting and diverse graduate students and do team science. Jennie is very excited to represent the GSA and work alongside other members of the GSA at the GLEON 15 meeting in Argentina.

### The GSA in the GLEON Governance and Leadership Structure



GLEON is truly a grassroots network that facilitates experiential leadership opportunities that include students — this is quite clear from the involvement and the unique role the GSA plays on the GLEON Steering Committee (SC) and the Collaborative Climate Committee (CCC), in addition to sharing the organizing responsibility of the student workshop, poster and site updates at GLEON all-hands meetings.

### GSA Leadership Rotation



Paul Hanson and Jordan Read at GLEON 14, Ireland.

On behalf of the GSA members, we would like to take this opportunity to thank Jordan Read, the GSA alumnus that just rotated off the GSA leadership role before the G14 Meeting, for his exemplar contribution to the GSA and as a GLEON citizen. Jordan co-led the GSA with Emily Kara Read and Liz Ryder from 2010 to 2012, organized several well-received training workshops oriented for students from G11 through G14. Jordan has also played one of the key leading roles in collaborative efforts and publications that come to fruition from the GLEON Climate and Lake Physics working group and other project teams. He has recently earned his PhD degree from University of Wisconsin Madison in July 2012 and started a position at the U.S. Geological Survey Wisconsin Water Science as a civil engineer. We are truly thankful for Jordan's dedication to all things GSA for the past years. We also know for sure that he will continue to inspire his peers and the students in and outside of GLEON with his enthusiasm in driving science research and expeditions.

### GLEON Leadership and Governance

There has been a number of re-elections and new appointments to the GLEON Steering Committee (SC) and the Collaborative Climate Committee (CCC) since G14 in October 2012. Following the e-announcement through GLEON listserv on 31 March 2013, we are delighted to reiterate that the SC has unanimously endorsed Kathie Weathers for a second term as the SC co-chair. Lucky us!! (-: Additionally, among the recently appointed new SC members Bomchul Kim, Cintia Piccolo, Kevin Rose and Evelyn Gasier (reappointed), Kevin is one of the former GSA co-chairs and has continued to co-lead GLEON collaborative efforts. Bomchul, Cintia and Evelyn have all introduced talented students to GLEON and have assumed mentoring roles, supporting the GSA in various GLEON activities.

We would like to express our gratitude to the recently rotated-off SC members for their continuous guiding by being examples of team science leaders for the GSA: Tim Kratz, Fang-Pang Lin, David da Motta-Marques and Cayelan Carey. Our thank-you also goes to the outgoing CCC members: Cayelan Carey (GSA founder), Paul Hanson, Kathie Weathers and Carol Brewers. They are part of the founding group of the CCC that started the GLEON meeting surveys and helped inform SC decisions, all-hands meeting planning in maintaining the collaborative social climate of GLEON, and strengthening the integration of students and members participation in GLEON across career types and stages. The GSA is excited about working alongside the CCC with four new members Lisette de Senerpont Domis, Stefan Bertilsson, Chris McBride and Bruce Hargreaves, continuing to 'learn leadership by doing' with the GLEON members.

# NETLAKE



**cost**  
EUROPEAN COOPERATION  
IN SCIENCE AND TECHNOLOGY

**DUNDALK**  
INSTITUTE OF TECHNOLOGY

## Official launch of NETLAKE by Vicky Veerkamp

In February 2013 the NETLAKE COST Action kicked off its first two day science meeting in Ireland, hosted by the Dundalk Institute of Technology. The meeting was attended by 44 delegates from 21 countries who came together to share their expertise. Participants included Kathie Weathers, Co-Chair of GLEON, who attended to give advice on outreach and citizen science projects. The main focus of the NETLAKE meeting was to discuss how the NETLAKE network can be established to promote collaborations between participants.

NETLAKE ([www.netlake.org](http://www.netlake.org)) is funded by a 4-year EU COST Action grant with the aim of sharing state-of-the-art sensor data from lakes across Europe, allowing scientists and stakeholders to assess changes happening in lake ecosystems at a European scale. COST (Collaboration in Science and Technology) is one of the longest running EU funding schemes, and is specifically aimed at strengthening collaborative links, both within the European science community, and between European scientists and their global counterparts. The meeting was structured into working groups which allowed for the discussion of crucial topics such as the generation of a general European meta-database for lake sites which have high frequency instrumentation, and the development of tools for the analysis of high frequency data. Other key issues considered were the bridging of gaps in communication between researchers, policy makers and the local communities.

Early stage researchers (defined as those within eight years of having completed a PhD) and students are a particular focus within all COST Actions, and can avail of site visit grants and training schools. Close links with the GLEON network already exist as many of the participants are members of GLEON, while the NETLAKE Chair and Vice-Chair (Eleanor Jennings and Bas Ibelings) are also members of the GLEON steering committee. These links will facilitate collaborations between GLEON and NETLAKE over the coming four years.

For further information, contact Eleanor Jennings ([eleanor.jennings@dkit.ie](mailto:eleanor.jennings@dkit.ie)).



Participants at the NETLAKE meeting February 2013 Dundalk Institute of Technology, Ireland.



NETLAKE working group 3 and poster session



## ASLO by Jennie Brentrup

The Association for the Sciences of Limnology and Oceanography (ASLO) held the aquatic sciences meeting from February 17<sup>th</sup> - 22<sup>nd</sup> in New Orleans, Louisiana. Established in 1936, ASLO has grown into an organization with more than 3,800 total members from 58 countries. The theme of the meeting was "Learning for the Future" and throughout the week, there were local presentations focused on New Orleans and the aftermath of Hurricane Katrina. In addition, there was a full schedule of daily sessions ranging from phytoplankton and carbon cycling to long-term perspectives on lake research and management.

Over twenty GLEON members attended the ASLO meeting with many more GLEON members participating as co-authors on a number of presentations. Tim Kratz, former GLEON co-chair, gave a presentation about the network and shared the results of two recent collaborations using GLEON buoy data to understand physical and biological control in lakes. This session also included a presentation by GLEON member Evelyn Gaiser on using long-term observational and paleolimnological data from Lake Annie to separate out climate signals from land-use changes. For the first time, ASLO offered a mentoring program, similar to the GLEON Network Partnership Program (NPP), matching students and early-career scientists with experienced ASLO members. A mixer on the opening night of the meeting brought students together for the opportunity to interact with a variety of people and discover more about oceanographic research as well.

The ASLO meeting provided a great forum to learn about some of the latest aquatic research, and all who attended had the chance to experience the vibrant New Orleans culture, enjoy great seafood, and outstanding jazz music!

## Lake Lacawac, ARTHUR, and the Lacawac Ecological Observatory Workshop by Lesley Knoll

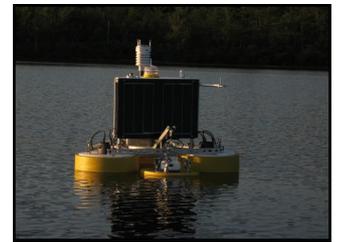
In 2012, a novel Aquatic Resource Tool for High-Frequency Underwater Research (ARTHUR) was deployed on Lake Lacawac, a 52 acre glacial lake nestled in the Pocono Mountains of Northeastern Pennsylvania, USA. **ARTHUR** is a small, portable profiling buoy equipped with a suite of biological, physical, and chemical sensors used to explore the use of smaller lakes as climate sentinels. It uses an innovative winch system that incorporates wireless technology. Jennie Brentrup, a PhD student at Miami University, led the ARTHUR team and she plans to deploy the buoy in another nearby lake in Pennsylvania in 2013.

The Lacawac Sanctuary Field Station will host the second annual Lacawac Ecological Observatory Workshop (LEOW) June 26-29, 2013. Lacawac has a history of high frequency limnological data collection and the use of advanced sensors for student and faculty research. LEOW is geared towards new and intermediate sensor users from the undergraduate level to faculty. Sessions will include:

- Panel discussion on ecological observatory networks and continental scale ecology approaches
- Case studies including work by GLEON, NEON, and the Global Lake Temperature Collaboration
- Buoy/sensor troubleshooting
- Analysis of large datasets including a "Practical Guide to Managing Large Environmental Datasets"
- Coupling physical and biological parameters with high frequency data
- Hands-on sensor comparisons on Lake Lacawac

For more information or to register go to the LEOW webpage (<http://lacawac.org/>) or contact Lesley Knoll with questions ([knoll1b@MiamiOh.edu](mailto:knoll1b@MiamiOh.edu)).

**The registration deadline is June 7th, 2013.**



Participants at the Lacawac Ecological Observatory Workshop (LEOW) 2012 hosted at the Lacawac Sanctuary Field Station.

## GLEON & NETLAKE @ SIL



GLEON / NETLAKE session at the  
32nd International Society of Liminology (SIL)

August 4th - 9th, 2013 in Hungary.



The cooperation between a global network, GLEON and an European networking initiative NETLAKE, provides an opportunity to networking and collaboration at SIL.

The theme of this session is: **Hypothesis testing using high frequency time series for aquatic ecosystems.** This session aims to bring together a selection of presentations from both GLEON and NETLAKE members and affiliates on the use of high frequency data to explore ecosystem functioning in lakes and their in-flowing streams.

During the 32nd SIL conference in Hungary, there will be a GLEON/NETLAKE reunion dinner. To make the restaurant reservations, please contact Liz Ryder : [elizabethryder2010@gmail.com](mailto:elizabethryder2010@gmail.com) if you are interested in participating and attending the informal GLEON/NETLAKE reunion dinner. Your colleagues that want to know more about GLEON and NETLAKE are also very welcome to join us.

## Oh, Annie Buoy by Evelyn Gaiser

(Debut at GLEON 14, the lyrics of 'Annie Buoy' in *Danny Boy* tune).



*Oh, Annie buoy, your pipes are made of PVC.*

*With mooring lines to anchors you are tied.*

*You float up right, unless your ballast's missing.*

*And ride the waves, while listing to one side.*

*Oh Annie buoy, you send us data we can show*

*All the cool things that GLEON loves to know.*

*And don't you cry, when data streams, or none do flow.*

*Oh, Annie buoy, oh, Annie buoy, we love you so.*

*And when the sky gets dark and waves wash over you.*

*Canister wires - so dry, until just now.*

*And lightning bolt fries CR10 and sensors too*

*We'll fix you soon - as soon as we learn how.*

*Oh Annie buoy, we'll boat out in the morning dew*

*We'll set you right, with sensors all anew*

*And you'll call back, with sat phone and new data cue*

*Oh Annie buoy, oh, then we'll sing with you.*

## Editor Contact Details:

Liz Ryder: [elizabethryder2010@gmail.com](mailto:elizabethryder2010@gmail.com)

Kohji Muraoka: [kohji.muraoka@gmail.com](mailto:kohji.muraoka@gmail.com)

Jennie Brentrup: [brentrja@miamioh.edu](mailto:brentrja@miamioh.edu)

Grace Hong: [gshong@wisc.edu](mailto:gshong@wisc.edu)

There was a new newsletter committee established in February 2013 including GSA and non GSA members (Liz Ryder, Kohji Muraoka, Jennie Brentrup, Vicky Veerkamp, Kristin Elliott and Grace Hong). If you are interested in getting involved in the GLEON GSA Newsletter sub-committee please contact us.

***If you would like to contribute to Issue 4 of the GLEON GSA Newsletter, please do not hesitate to contact the GSA.***