Expanding research frontiers is the gold standard by which we measure accomplishment. While education and service are central to the research enterprise, accomplishments in these areas often go unnoticed.

So I thank ASLO for establishing this award to recognize Excellence in Education.

As or more important than honoring an individual, our awards serve to recognize and record what we collectively value and define what we should strive for.

The award this year spotlights the growing importance of interdisciplinary research and the critically important transition from advanced graduate student to independent researcher.
Thanks to all in the Aquatic, Earth and Social Science Communities....

especially

ASLO Advancing the science of limnology and oceanography
Thank you,
Richard W. Eppley!

for inviting me to become a member of your research group and enabling me to pursue my professional goals ---

and for being a mentor, role model and friend throughout my professional life
Frederick J. Weiler  
M.S. Geography  
U.S. Dept. of Interior  
BLM State Director [AK], WA, AZ  
& Conservationist

Caroline W. Weiler,  
Liberal arts education, 2d degree in Library Science  
Multitasker extrordinaire;  
A civilizing influence in the wilderness!

Both valued education and public service.
The academic and professional workplace is changing rapidly. The symposia have changed over time because I listen carefully to the more than 500 recent PhDs who have participated in these symposia, and adapt each symposium to address their changing needs.
Check the webpage to view abstracts of PhD dissertations, to register PhD dissertations, to read materials developed for and by symposium participants, access other resources for professional development, and sign up for the weekly DISCCRS E-newsletter.
My initial ocean voyages were imaginary and I was much more interested in pirating than research.
DIALOG began as a shameless rip-off of DISCO. Ed’s original vision was to bring together every chemical oceanographer who graduated in the US and provide them with an opportunity to talk for an hour about their research, get to know each other, and schmooze with program officers.

Because so many more graduate with PhDs in limnology and oceanography, we could only bring together a portion of graduates. With a symposium only every two years due to funding constraints, I was getting around 150 applications for 40 spaces. I moved symposia from BBSR to a more cost-effective location (Dauphin Island Sea Lab) in order to hold symposia on an annual cycle. With 40 people, talks were shortened to 15 minutes and posters were added. Over time I noticed the talks got better the shorter they were. With DISCCRS, talks are limited to 7 minutes. Each is allowed an additional 2 minutes and one slide to introduce themselves to the group and show both their personal and professional side. This catalyzes the collegial interactions.
Margalef was a naturalist and a theoretical ecologist. From the words in his 1984 paper, I think he might have become an Earth System Scientist if he had been born in the 1970’s or 1980’s. (Margalef was born in 1919 and died in 2004)
We should all read and heed Lubchenco’s 1998 address.
With this central role come new responsibilities –

As Jane Lubchenco* put it, we need a

New Social Contract for Science

Earth System Science

Study of Earth as a complex system of interrelated atmospheric, aquatic, geological, biological and social processes.
"We are now faced with the fact, my friends, that tomorrow is today.

We are confronted with the fierce urgency of now. In this unfolding conundrum of life and history there is such a thing as being too late.

Procrastination is still the thief of time.... We may cry out desperately for time to pause in her passage, but time is deaf to every plea and rushes on.

Over the bleached bones and jumbled residue of numerous civilizations are written the pathetic words: Too late...."

Reverend Dr. Martin Luther King 1967
Beyond Vietnam

These words are as true today as in 1967.
Grand Challenge

So MUCH to do, so LITTLE time....

Doomsday Clock: Minutes to Midnight
The future is calling to us. Everyone in this room is engaged in this adventure, in one way or another. Our future is truly up to this Next Generation.
This is a tall order for anyone, let alone a newly minted PhD.

We more senior players can’t sit this one out on the sidelines. Disciplinary expertise is necessary, but not sufficient.

These new players require new skill sets and a greater level of mentoring than previous generations.

In the past, interdisciplinary skills and collegial networks were generally developed slowly, and largely serendipitously, over a professional lifetime. The stakes are too high to have these skills develop so slowly and we cannot leave so much to chance.

We need to jump-start these careers, get these new recruits off the bench and in to the front line.

Above all we must provide opportunities to broaden knowledge and for interdisciplinary, collaborative team research. We need to transmit basic skills such as effective communication. We must train our students to work effectively in collaborative, team settings. We must be positive role models and show this work is rewarding as well as challenging.
Two can accomplish more than one, but it takes training to reach one’s full potential. We need to provide training in interdisciplinary professional skills as well as research.
Effective communication is the cornerstone of interdisciplinary work. Success begins with the establishment of a common language, not the discipline-specific jargon used for communicating with our fellow specialists. These same skills will help us communicate more effectively beyond the ivory towers.
Nobody likes to be “typed,” but let’s face it, from Hippocrates to Larson, we do categorize things and people and we do share some common traits. Anyone who has ever tried to get something passed at a faculty meeting knows that there are personality differences among our colleagues, and understanding ourselves and others can make us more effective in moving forward. The business world has been quick to realize this and use it to advantage. Academia lags too far behind. Larson, we all do it to some degree. Training can enable us to understand ourselves, appreciate the differences in others, and work more effectively together than any of us can alone.
We need experts who can work as an Expert Team. Our interdisciplinary research relies so much on collaboration and there are skill sets that can facilitate the process.
Interpersonal, facilitation, and team training programs have become standard practice in industry, where efficiency is valued, and in sports where the importance of teamwork is recognized. More of this should be transferred to academic settings.
In conclusion

Transition from student to independent researcher is challenging. It can profoundly shape research directions and long-term professional goals.

Interdisciplinary research on complex environmental systems is not an easy task. This new generation is ready for the challenge. We must be ready to coach them.

All in all I am absolutely in awe of today’s graduates. I see a great future and am honored to be part of their team.
Symposium participants return to their institutions with new perspectives on their research. Through their interdisciplinary perspectives, they are extending research frontiers. In addition, they are more aware of their responsibility to the scientific community. Many of the past symposium participants are now serving in leadership positions or are otherwise committed to being effective catalysts for change in order to mentor the next generation and build a more international and interdisciplinary research community.

I especially thank DIALOG I symposium participants

Maarten Boersma, who was able to raise travel funds for international participation through grants from the European Commission and served as symposium co-organizer and international mentor for DIALOG II, III and IV

and

W. Monty Graham, who served as co-organizer of DIALOG VI and VII at the Dauphin Island Sea Lab and served as mentor for DIALOG V, VI and VII.

I also thank the current DISCCRS Team, Ronald B. Mitchell who served as a mentor for DISCCRS I and has served as a co-organizer ever since, bringing in the social-science perspective and helping to shape DISCCRS and mentor symposium scholars. Jenn Marlon has contributed to the program first as a graduate assistant and now as a post-doc. Ruth Ladderud has contributed in ways too numerous to mention as the DISCCRS Program and Symposium assistant.

There are many others too numerous to name, including all symposium scholars.

This has truly been a team effort with many essential players!
Co-sponsoring Societies
In-kind Support, advertising, international participants

ASLO American Society of Limnology and Oceanography
AFS American Fisheries Society
AGU American Geophysical Union
ERF Estuarine Research Federation
ESA Ecological Society of America
JSL Japanese Society of Limnology
NABS North American Benthological Society
NALMS North American Lake Management Society
PSA Phycological Society of America
SIL International Society of Limnology
SCL Society of Canadian Limnologists
OSJ Oceanographic Society of Japan
TOS The Oceanography Society
WSN Western Society of Naturalists
Interdisciplinary programs are difficult to put together, and it is often hard to get funding. I thank the many program officers at NSF, NOAA, ONR, and NASA who have so far supported DIALOG, DIACES, NGPR and DISCCRS symposia.

For information on future symposia, see

**DISCCRS**: Interdisciplinary symposia for early career researchers involved with climate change and impacts:

http://disco.org
I could not have succeeded without the love and support of husband Paul H. Yancey and son Ross W. Yancey.