

The Signal

Monthly newsletter of the W. M. Keck Center for Behavioral Biology
at North Carolina State University
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The *Signal* wishes Its Readers a Happy, Healthy and Productive New Year!

From the Director



Dear Friends and Colleagues,

A Happy New Year to All of You!

2014 has been a good year for the Keck Center. We have had an excellent program of seminars and wonderful activities. The highlight of the year was our successful external review, which re-affirmed the positive contributions of our organization to the mission of the university and insured the continuation of the Keck Center. Following the review, the College of Sciences has allocated stable operating support for the Center for at least five years, providing much needed financial stability and continuity. We also received generous corporate contributions and most importantly, emeritus members of the Center, Drs. John Vandenberg and Robert Grossfeld have established two unique funds for the Center: The John and Barbara Vandenberg Travel Awards, which enable students to attend specialized courses or collaborative work at other organizations that benefit their career advancement, and the Robert and Margaret Grossfeld Award, which will be given annually to a

Keck Center trainee in recognition of the most creative and impactful paper published in the preceding year.

We are all well aware that budgetary constraints, both state and federal, are becoming increasingly tighter. It is therefore a tribute to members of the Keck Center that by and large we have been able to maintain stable research support across the board. Junior investigators received their first extramural grants, Nadia Singh from the National Science Foundation and Reade Roberts a Beckman Award. Also congratulations to Beth Dumont for receiving her K99 award!

Another highlight for the Center was the appointment of Dr. Emilie Rissman as Head of the Department of Biological Sciences. Rissman is also a member of the Keck Center and will contribute additional strength to behavioral neuroscience and the Keck Center's already strong representation in behavioral neuroendocrinology and behavioral toxicology.

2015 promises to be an even better year. An excellent diverse seminar program with outstanding speakers has already been lined up for both the Spring and Fall semester. Our annual student/postdoc symposium is scheduled for February 20; please, submit your abstracts. We will continue our social evening discussions and our outreach activities with the North Carolina Museum of Natural Sciences.

I trust that all of you will actively participate in the many activities sponsored by our Center. Our only mission is to create an exceptionally vibrant and intellectually stimulating environment at North Carolina State University. I wish you every success as we enter 2015 with optimism!

Robert R. H. Anholt
Center Director

Farewell to Ed Vargo

Just before Thanksgiving, Dr. Ed Vargo left North Carolina State University to assume the position of *Endowed Chair in Urban and Structural Entomology* at Texas A&M, and to direct a new \$4 million building that will house the *Center for Urban and Structural Entomology*. Ed received his Ph.D. in Entomology from the University of Georgia in 1986, where he investigated the physiology and behavior of the red imported fire ant. He then spent two years with Professor Luc Passera in Toulouse, France, where he studied the physiology and the reproductive biology of Argentine ants. He resumed his studies on fire ants in 1989, with Larry Gilbert at the University of Texas at Austin. In 1998, Ed joined the Entomology faculty at NCSU and developed a vibrant program on behavior and molecular ecology of urban pests, including termites, ants, cockroaches and bed bugs. He served as Interim Head of Entomology from 2013-2014.



Ed Vargo



A pressing need in subterranean termite research is a deeper understanding of their basic biology in order to improve existing methods of control, and to develop more targeted approaches of pest management. In the last two decades, termite management has moved from heavy reliance on soil treatments with termiticides to more targeted methods such as baiting. Ed recognized that these newer methods would require a deeper understanding of the spatial and social organization of termite colonies. Yet, the cryptic nesting and foraging habits of subterranean termites made it difficult to obtain such information. Ed developed molecular genetic markers that have opened up many new fronts in investigations of colony and population structure, foraging ranges, breeding systems, colony fragmentation and fusion, bait sharing and transfer within colonies, and efficacy of control efforts against subterranean termites. His lab showed, for example, that many North Carolina houses with termite infestations are being attacked simultaneously by

numerous colonies, with up to four colonies present in a structure at the same time.

Ed also led an effort at North Carolina State University to understand why bed bugs have resurged as a serious and growing problem, not only in North America, but also globally. Again, using microsatellite and mitochondrial DNA markers, Ed led an effort to understand the genetic diversity of bed bug populations at geographic scales ranging from within room to across continents.

The invasion biology of bed bugs and their modes of spread from home to home are exceptionally important issues not only for evolutionary and behavioral biologists, but also for the public health system.

By teaming up with investigators at North Carolina State University and elsewhere, Ed established a broadly-based basic and applied research program that addresses highly destructive structural and public health pests. He has published more than 100 scientific articles, and has been recognized with major national awards, including the 2006 Entomological Society of America's Recognition Award in Urban Entomology. North Carolina State University and the W. M. Keck Center for Behavioral Biology have lost a creative and collaborative colleague and a good friend. We wish him all the best in his new position at Texas A&M.

Symposium 2015

Announcement and Call for Abstracts

The Sixteenth Annual Student/Postdoc Symposium of the W. M. Keck Center for Behavioral Biology will be held on Friday, February 20, 2015, in the Stanley G. Stephens room, 3503 Thomas Hall, at North Carolina State University. Participation is open to all students, postdoctoral fellows and faculty, and is mandatory for students enrolled in the Concentration for Behavioral Biology.

Preliminary Program

8:30	Breakfast
9:15	Welcome by Dr. Robert Anholt, Center Director
9:30	Symposium
10:45	Coffee break and group photograph
11:15	Symposium
12:30	The Robert and Margaret Grossfeld Award Presentation
12:45	Lunch
2:00	Symposium
3:15	Break
3:45	Symposium
5:00	Reception and dinner

Presentations will be 12 minutes with 3 minutes for discussion. Participants should submit an abstract by e-mail to Caroline Leitschuh (caro.leit@gmail.com) or Megan Serr (meserr@ncsu.edu) no later than **February 6**. The abstract should contain no more than 300 words without figures or tables. It must provide a title and the name of the presenting author (without co-authors or affiliation).

Undergraduate students are invited to submit abstracts for poster presentations.

Trainees within their first year may present their future research objectives. Advanced trainees will present progress of their research. Computer-assisted projection and a PC-type laptop will be available for PowerPoint presentations. All presentations must be rehearsed with the mentor.

Breakfast, lunch and a reception and buffet-style dinner will be provided.

Announcing

The Robert and Margaret Grossfeld Award

Established through a generous gift by the Grossfeld family, the Robert and Margaret Grossfeld Award is presented each year to a student or postdoctoral fellow from a laboratory affiliated with the W. M. Keck Center for Behavioral Biology for best publication of the preceding year.

Eligibility requirements

- ❖ The nominee can be an M.S. or Ph.D. student or a postdoctoral fellow.
- ❖ The nominee must be the first author of the publication.
- ❖ The work reported in the publication must have been performed at North Carolina State University.
- ❖ The publication must report original research. Review articles or opinion papers are not eligible.
- ❖ The recipient must be able to present his/her work reported in the winning article at the annual student/postdoc symposium on February 20, 2015. If the nominee has recently moved to a position at another institution, the W. M. Keck Center will provide travel expenses for the successful nominee to attend the symposium and receive the award.

Nominations

The Principal Investigator must nominate the candidate, submit an electronic link to the publication, and explain in less than 250 words the significance of the contribution reported in the manuscript. Nominations must be submitted electronically before January 16 to the Director of the Keck Center.

Selection process

The successful candidate will be selected by the Keck Center's Executive Committee and two or more external judges either from within or outside the university. To avoid conflict of interest committee members will recuse themselves from the selection process if individuals from their laboratories have been nominated. The successful candidate will be notified prior to the annual student/postdoc symposium date.

Award

The recipient will receive a customized plaque indicating the recipient's name and accomplishment. The recipient will also have access to \$1,000 of funds (\$500 from the Grossfeld fund and \$500 matching funds from the Keck Center operating fund) to be spent for research (e.g. supplies, computer, books) or career development (e.g. attendance at a conference), provided the funds can be encumbered through NC State University. For applicants who are no longer affiliated with NC State University, award money will be used to cover their travel expenses to receive the award.

Seminars

On **January 29**, 3:30 pm, Dr. Andrea C. Gore from the Department of Pharmacology and Toxicology at the University of Texas at Austin will present a seminar, titled “Are environmental endocrine disruptors impairing reproduction, brain, and behavior?”

The seminar will be in 101 David Clark Laboratories.

On **February 20**, the W. M. Keck Center for Behavioral Biology will host its sixteenth annual student/postdoc symposium. See the Announcement and Call for Abstracts in this issue of the Signal.

To contribute to The Signal, to be placed on our mailing list or for information about the W. M. Keck Center for Behavioral Biology, contact Dr. Robert Anholt, Department of Biological Sciences, Box 7614, North Carolina State University, Raleigh, NC 27695-7614, tel. (919) 515-1173, anholt@ncsu.edu.

Visit our website: <http://keck.sciences.ncsu.edu/>

Publications

The following publications from the W. M. Keck Center for Behavioral Biology have appeared in print:

Robert, M. A., Okamoto, K. W., F. Gould, F. and Lloyd, A. L. (2014) Antipathogen genes and the replacement of disease-vectoring mosquito populations: a model-based evaluation. *Evol. Appl.* **7**: 1238-1251.

Mackay, T. F. C. (2015) Epistasis for quantitative traits in *Drosophila*. *Methods Mol. Biol.* **1253**: 47-70.

The W. M. Keck Center for Behavioral Biology gratefully acknowledges its corporate sponsors.

