



# **SIGMA XI NEWSLETTER**

**Iowa State University  
October 2012**

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## **CALENDAR 2012-2013**

### **SIGMA XI DISTINGUISHED LECTURER**

*The Ice Age Dispersal of Humans to the Americas: Do Stones, Bones, and Genes Tell the Same Story?*

Ted Goebel  
Department of Anthropology  
Texas A&M University

Thursday, October 25, 2012  
8:00 p.m., Sun Room, Memorial Union

Scientists from four disciplines—molecular genetics, archaeology, human paleontology, and geochronology/geomorphology—are searching for the origins of the first Americans in northeast Asia and Beringia, investigating the process of human dispersal from the Old World to the New. In this lecture, I draw on data from each of these disciplines to address four related questions: (1) when did modern humans appear in greater northeast Asia, (2) what was the northeast Asian “source” of the first Americans, (3) when did ancestors of the first Americans disperse from northeast Asia to Beringia, and (4) how did the dispersal process unfold? In short, modern ancestors of the first Americans appeared in northeast Asia before 30 ka, but they did not disperse from a core area in the Baikal region of Siberia until after the last glacial maximum, <20 ka. They colonized Beringia rapidly as glacial climates ameliorated, and soon significant genetic and cultural variability emerged. Before long, between 16 and 13 ka, these populations dispersed further into the Americas, following multiple paths. Telling of this story is unfinished, and results of new research will potentially lead to a new ending. Most important will be results of ancient DNA analyses of the earliest modern northeast Asians and Alaskans, continued exploration of the Bering Land Bridge area for early archaeological sites—terrestrial and submerged, and paleogeographic studies of deglaciation in western Canada.

*Ted Goebel is Professor of Anthropology at Texas A&M University. He holds the Endowed Professorship in First Americans Studies and is Associate Director of the Center for the Study of the First Americans. He is an archaeologist who studies the Ice Age dispersal of modern humans to the Americas. His field work has been primarily in Siberia, Alaska, and the intermountain west of the United States, and he has investigated archaeological sites spanning from more than 50,000 years ago to 10,000 years ago. He earned his B.A. degree from Washington and Lee University in 1986, and his Ph.D. degree from the University of Alaska, Fairbanks in 1993. Goebel's dissertation focused on the emergence of modern humans and the Middle-to-*

*Upper-Paleolithic transition in Siberia. Since then, his research has investigated the peopling of Beringia. He has excavated important archaeological sites containing some of the earliest evidence of humans in Beringia, and most recently directed field research at Serpentine Hot Springs, the Ice Age archaeological site yet found on the Bering Land Bridge itself. This site is significant in that it contains the first dated fluted spearpoints in Alaska, a hallmark of Clovis and other Paleoindian cultures in temperate North America. In the Great Basin of the western U.S., Goebel's research has focused on the transition from the Pleistocene to the Holocene, a period of significant climate change and human adaptation. Since 2000, he has directed excavations at the multi-layered Bonneville Estates Rockshelter (a dry cave in eastern Nevada), which contains a series of well-preserved cultural layers spanning from about 13,000 years ago to historic times. Goebel's research has been reported in a series of journal articles in Science, Current Anthropology, and Journal of Archaeological Science.*

## LOCAL HONOR LECTURE

*Learning to Think Like Scientists: Does Our Future as Humans Depend on it?*

Professor Suzanne Hendrich  
Department of Food Science and Human Nutrition, ISU

Thursday, November 8, 2012  
7:00 p.m., South Ballroom, Memorial Union

*Suzanne Hendrich, a University Professor and current president of the Faculty Senate, will engage the audience in thinking about “thinking like a scientist” in both our daily lives and in solving some of our greatest global challenges such as food security, poverty, and building community. She emphasizes the need to clearly define problems, seek evidence, make evidence-based decisions, consider the broad impacts of decisions, and seek multiple perspectives. Hendrich teaches in the areas of food-borne toxicants and nutrition and conducts research on the effects of dietary and botanical constituents on gut health and inflammation. She joined the Department of Food Science & Human Nutrition in 1987 and is a Lura M. Lovell Fellow working on dietary supplement safety education.*

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## COMING EVENTS

**October 25, 2012 (Thursday).** Professor Ted Goebel, Texas A&M University, will deliver a National Sigma Xi Lecture at 8:00 p.m. in the Sun Room of the Memorial Union— see page 1 for details. Reception will follow.

**November 8, 2012 (Thursday).** Professor Suzanne Hendrich, Department of Food Science and Human Nutrition, ISU, will deliver the Local Honor Lecture at 7:00PM in the South Ballroom of the Memorial Union – see above for details.

**December, 2012.** Forms for the nomination of Associate and Full Members, for Undergraduate Research Scholars and for the Promotion of current Associate Members will be available from the Secretary-Treasurer. They will be sent to Department Executive Officers and Department Representatives early in January. Nominations are to be sent to the Secretary/Treasurer, Paul Sacks, 396 Carver. Nominations may be submitted at any time, but the preferred deadline for receipt of nominations is February 11, 2013, for timely review by the Committee on Membership. Questions on procedures or qualifications can be addressed at any time to Paul Sacks, 294-8143 or psacks@iastate.edu. The Winter Newsletter (late January) will contain a reminder, and details of the nomination procedures. Guidelines for nomination are a part of the nomination form, which is available online via the National Sigma Xi Website [www.sigmaxi.org](http://www.sigmaxi.org).

**March 7, 2013 (Thursday):** National Sigma Xi Lecturer Professor Richard Anthes, University Corporation for Atmospheric Research, will present a lecture, *title TBA*

**March 1, 2013:** Invitations will be sent to those whose nominations have been approved by the Committee on Membership at its February meeting.

**March 25, 2013.** Deadline for receipt of acceptances from nominees for membership or promotion.

**May 2, 2013 (Thursday).** The Annual Initiation Banquet will be held in the Scheman Building. At this event, the year's initiates (who are the Chapter's guests at the Banquet) are installed as members of Sigma Xi; Undergraduate Research Scholars are recognized and awarded the Lester Earls prize; the Zaffarano Prize for Graduate Student Research is awarded; the Karas Dissertation Award is announced; and the new President of the ISU Sigma Xi chapter is installed. The evening begins with a social hour at 5:30, followed by dinner and the necessary initiation formalities. The evening will conclude with a lecture by the retiring President, Chris Minion, at 8:00 p.m.

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### **Subsidized Sigma Xi membership opportunity for students**

Nominate your qualified students, graduate or undergraduate, for Sigma Xi membership ASAP, but no later than December 10, 2012 to take advantage of a fund the ISU chapter was awarded to pay for membership of new initiates before the end of 2012. Nomination forms can be found at

[www.sigmaxi.org/member/join/index.shtml](http://www.sigmaxi.org/member/join/index.shtml)

and they should be emailed to Paul Sacks at [psacks@iastate.edu](mailto:psacks@iastate.edu). Please direct your questions to Paul Sacks or Diane Birt at [dbirt@iastate.edu](mailto:dbirt@iastate.edu). This funding was made available by the National Sigma Xi office.

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### **PRESIDENT'S MESSAGE**

The budget crisis is making a huge impact on US science. Despite the fact that funding for science has proven a sound investment strategy, the future funding line looks grim. Sequestration will occur if the Congress fails to act. That means significant cuts in funding for science through NIH, NSF, and USDA. Already these agencies are reeling from insufficient increases to keep up with inflation over the last couple of years. Couple that with the loss of state funds for higher education, and the US is fast approaching a crossroads. Will it continue to lead the world in scientific breakthroughs, in science training, in research facilities, or will it fall into mediocrity and be left behind? Already the latter is becoming more and more likely. Over my 30 year career, I have seen several "critical" funding cycles, but I have never ever seen anything like this.

In addition to the federal funding cuts, state legislatures across the country have been cutting state university budgets significantly over the past decade. To keep the educational enterprise going, the state universities have been forced to continue increasing the tuition rates with its negative impact on the student debt rates. Rather than taking the blame for continued rises in tuition and other educational costs (you can't educate for nothing), they are blaming "high" faculty salaries as the cause for continued raises in tuition. (I have even heard this from the mouth of the Vice President.) I don't know what world they live in, but faculty salaries have definitely not been keeping up with inflation. At least that is the case with Iowa State University (and many others I suspect). For the legislature it's a matter of declining revenues and where do you cut. It's easy to blame and cut the educational enterprise of the state rather than solving the real problems. Those are hard.

Every cloud has a silver lining, right? So where is the silver lining in this time of extreme budget cuts? As I look around my own department, college and the university, the faculty are still highly motivated. Iowa State has been hit hard in declining state funds, but it has been increasing its total research dollars, primarily through some large grants awarded recently and in recruitment of new students. We are at an all-time high of numbers of students (31,000+). The faculty are very aggressive in competing for research funds to continue their work.

Eventually that will take a toll on them, but at the present these activities are at an all-time high. We continue to be competitive for new hires, and we do a good job of mentoring young faculty. I still get contacted almost weekly with requests to come and work or study in this country by foreign students. So that is saying something important about the training we still provide and the reputation we still have around the world. Can we continue these trends? Only time will tell but I have confidence in our university administration to temper the impact as much as possible so that faculty can continue to do their excellent job in teaching, research and service to the community, state and country.

F. Chris Minion, President, ISU Sigma Xi Chapter 2012-13

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## GENERAL COMMENTS

We need to have you begin to think about those graduate students and colleagues whom you would wish to nominate for either Associate or Full Membership in Sigma Xi, or for Promotion from Associate to Full Membership. Please take a little time to identify individuals who have impressed you with their achievements or research aptitude necessary for membership. We also encourage you to consider those outstanding undergraduates who have had a research experience and whom you would wish to honor by nomination as Undergraduate Research Scholars. Generally, these Scholars would be initiated as Associate Members; however, an especially research-productive undergraduate might well qualify for Full Membership. General requirements for nomination as an Undergraduate Research Scholar are a good GPA (3.50 or better) and contribution to an original research investigation which has led to a written report, a presentation at an appropriate meeting and/or (preferably) a publication. More details will be given in the *Guidelines for Nomination* in the Winter, 2013 Newsletter. Nomination forms may also be obtained electronically via the Sigma Xi Web site: <http://www.sigmaxi.org/member/join/nom.shtml>. Note also, that recognition as an Undergraduate Research Scholar carries with it not only a certificate but also a monetary award, the Lester Earls Award, made possible by a generous contribution to the ISU Chapter by Professor Emeritus Lester Earls. We do publicize this honor to undergraduates, so do not be surprised by questions you may be asked.

Please let us know of any new faculty or graduate students who are Sigma Xi members and who should be on our mailing list. Also, please let us know if your address is incorrect. We wish to encourage inactive members to pay their current dues and become active (past arrears in dues need not be made up; payment of 2012-13 dues will reactivate your status). We encourage ISU members and active Ames residents who have other affiliations to join the ISU Chapter. If you wish to change your affiliation or return to active status, please contact me for assistance.

Paul Sacks, Secretary-Treasurer  
Department of Mathematics  
396 Carver Hall  
515-294-8143 [psacks@iastate.edu](mailto:psacks@iastate.edu)

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## 2011-2012 MEMBERSHIP ACTIONS

The annual initiation banquet took place on Thursday, April 26, 2012 at the Scheman building. There were a total of 37 in attendance at the initiation Banquet, including 6 initiates and promotees. For the year there are a total of 14 initiates plus one individual promoted to Full Membership, see below for details. The Graduate College recognized one 1 Zaffarano Prize Awardee, 1 Zaffarano Prize Honorable Mention, one Karas Award Winner and one Karas Award Honorable Mention.

The Banquet and Award and Initiation Ceremonies were followed by the Retiring President's Address, Diane Birt, Distinguished Professor of Food Science and Human Nutrition, ISU: *Diet, genes and microbes: Complexities of colon cancer prevention*.

## 2012 INITIATES

### FULL MEMBERSHIP

Brenda Carillo-Conde+	UT-Austin - Biomedical Engineering
Venkat Chintareddy	Biocryst Pharmaceuticals
Jianrong Dong	Computer Science
David Grewell	Agricultural and Biosystems Engineering
Mingyu Kim*	Physics and Astronomy
Venkat Krishnan	Electrical and Computer Engineering
Athanasios Matzavinos	Mathematics
Yongchao Su++	MIT-Francis Bitter Magnet Laboratory
Philippe Tassin	Ames Laboratory
Srinivasa Thimmaiah	Ames Laboratory
Zhijun Wu	Mathematics
Michael Zimmermann**	Biochemistry Biophysics and Molecular Biology

\* Zaffarano Prize

\*\* Zaffarano Prize Honorable Mention

+ Karas Award

++ Karas Award Honorable Mention

### PROMOTION TO FULL MEMBERSHIP

Deepak Dibya	Advanced Analytical Technologies
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### ASSOCIATE MEMBERSHIP

Craig Erickson	Mathematics
Sarah Hargreaves	Ecology, Evolution and Organismal Biology

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### OFFICERS OF THE CHAPTER

President	F. Chris Minion
President Elect	C. Lee Burras
President Emeritus	Diane Birt
Secretary-Treasurer	Paul Sacks

### COMMITTEE ON MEMBERSHIP

Thomas Sauer	2010-13
Curtis Struck	2010-13
L Keith Woo	2011-14
Susan Lamont	2011-14
Leslie Hogben	2012-15

### Executive Committee

Diane Birt	2009-13
W. Sue Fairbanks	2010-13
F. Chris Minion	2010-14
C. Lee Burras	2011-14
Maynard Hogberg	2011-14
James Raich	2012-15
Michelle Ihmels	2012-15
Paul Sacks	2010-13

### NOMINATING COMMITTEE (one-year terms)

Carl Jacobson Kenneth Koehler  
Lester Schmerr