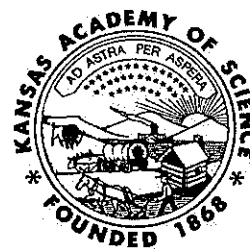


# KAS BULLETIN



## NEWSLETTER OF THE KANSAS ACADEMY OF SCIENCE

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February, 2015



## 147<sup>th</sup> ANNUAL MEETING OF THE KANSAS ACADEMY OF SCIENCE

March 27<sup>th</sup> - 28<sup>th</sup>, 2015

Pittsburg State University  
Pittsburg, Kansas



The early registration deadline is Monday, March 9<sup>th</sup>, 2015. Conference details and the online registration form can be found at:

<http://www.kansasacademyscience.org/meeting.html>

All events for this year's annual meeting will be held in the new Bicknell Family Center for Arts (BFCA):

“Located in the heart of Pittsburg State University's campus, the Bicknell Family Center for the Arts is the region's premiere destination for the fine and performing arts. Designed and constructed by the world's most renowned theater architects, this \$33 million facility features a 1,100-seat performance hall, a 250-seat theater, a 3,500 square-foot art gallery and state-of-the-art technology.”

### Friday's Events:

- **1:00-4:30 PM** Field Trip: Mined Land Wildlife Area & Big Brutus – Meet in 1<sup>st</sup> Floor Lobby
- **4-7:15 PM** Registration – Meet in 1<sup>st</sup> Floor North Lobby
- **6-7 PM** Banquet
- **7:15-8:15 PM** Keynote Speaker

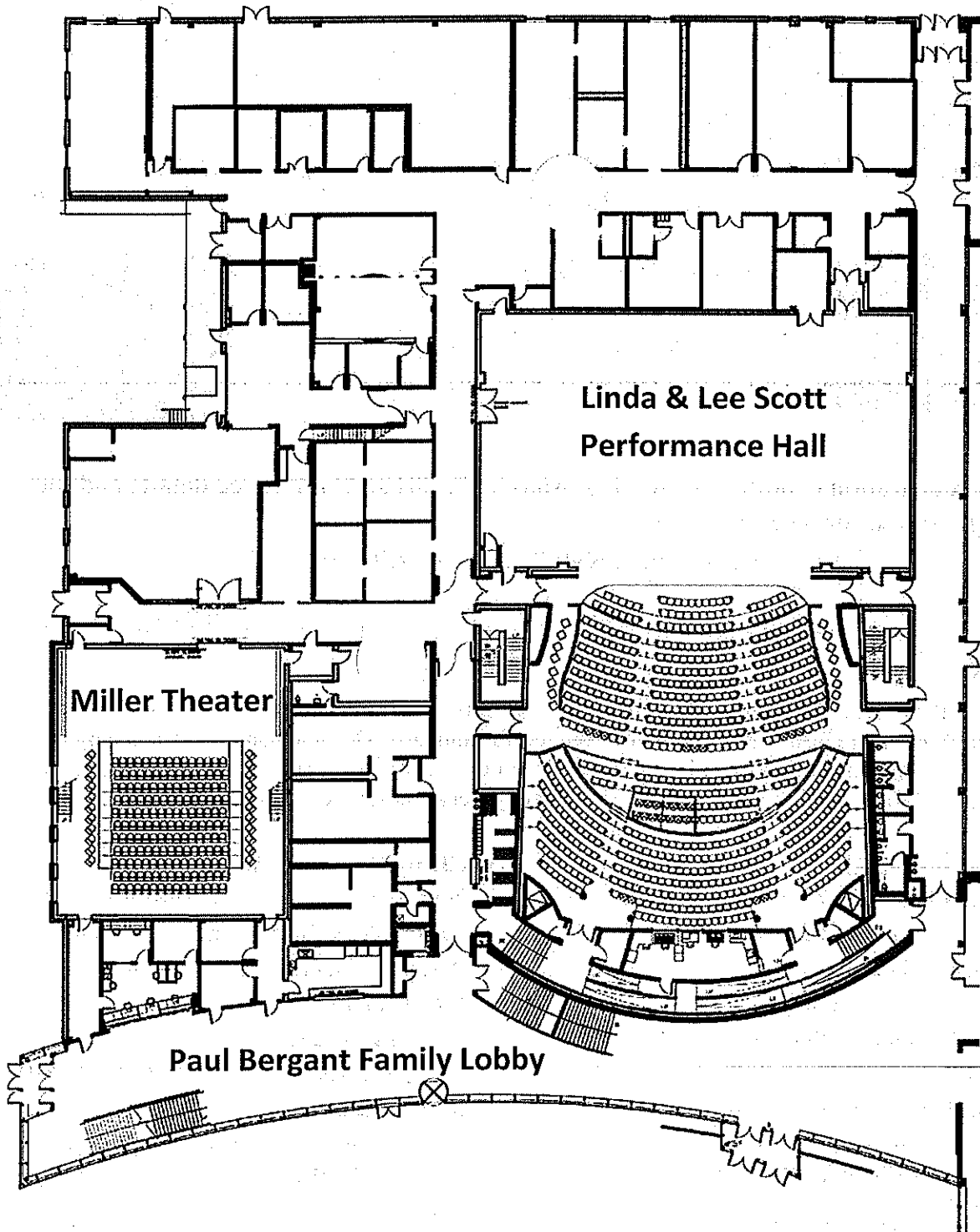
### Saturday's Events:

- **7-10 AM** Registration- 1<sup>st</sup> Floor North Lobby
  - Paleontology Symposium – Miller Theatre
  - Poster (1<sup>st</sup> Floor South Lobby) and Oral Presentations
  - **12-1 PM** Luncheon
  - **1-2 PM** Keynote Speaker Dr. Gabe Bever – Miller Theatre
- Keynote Topic: “Science Along the Stem: Chasing the Origins of Amniote Structural Diversity.”**
- Afternoon Award Presentation – 1<sup>st</sup> Floor South Lobby

Mail Annual Meeting Registration Form to:

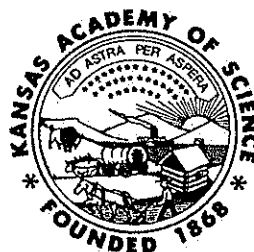
Kelly Borden, Dept. of Biology,  
Pittsburg State University, 1701 S.  
Broadway, Pittsburg, KS, 66762  
Or Fax to: (620) 341-5844

**Bicknell Family Center for Arts**  
1711 South Homer, Pittsburg, KS, 66762



# Kansas Academy of Science 2015 Annual Meeting

March 27 and 28, 2015  
Bicknell Family Performing Arts Center (PAC),  
Pittsburg State University, Pittsburg, Kansas



## Registration Instructions and Form

Last Day for Early Registration: Monday, March 9, 2015

- Option 1: Register and pay online at <https://go.pittstate.edu/kasregistration>. All credit card transactions must be through this link. Ignore the "Add Attendee" button when you see it.
- Option 2: Send this form with purchase order number or check to Kelly Borden, Dept. of Biology, Pittsburg State University, 1701 S. Broadway, Pittsburg, KS, 66762. Make check payable to Dept. of Biology, Pittsburg State University. If paying for more than one person, attach one form with information for each person, but just include totals and cost on the payer's form.  
[PO number \_\_\_\_\_]

Name: \_\_\_\_\_ Affiliation: \_\_\_\_\_

Address: \_\_\_\_\_

Phone: (\_\_\_\_) \_\_\_\_\_ - \_\_\_\_\_ E-mail: \_\_\_\_\_

Check if you are interested in chairing a session  Specify Subject Area \_\_\_\_\_

Check if you are interested in judging student posters  Specify Subject Area \_\_\_\_\_

Check if you are interested in judging student oral  Specify Subject Area \_\_\_\_\_

Registration Category	Due Dates	Cost	#	Enter Total
KAS Regular Registration	On or before March 9, 2015	\$44		
KAS Late Registration	After March 9, 2015	\$55		
KAS Student Registration	On or before March 9, 2015	\$22		
KAS Student Late Registration	After March 9, 2015	\$30		
KAS Student Grant Awardee	On or before March 9, 2015	Free		
Friday Evening Banquet	On or before March 9, 2015	\$18		
Friday Evening Banquet--Student	On or before March 9, 2015	\$ 9		
Saturday Luncheon	On or before March 9, 2015	\$17		
Saturday Luncheon--Student	On or before March 9, 2015	\$ 8		
		<b>TOTAL</b>		

Luncheon and Banquet tickets cannot be guaranteed after March 9, 2015.

## SICKNESS IN THE ARCTIC

By Christopher Solomon, Excerpted from Scientific American Vol. 311, No. 2, August 2014

The sea otters splashing off Alaska's Aleutian Islands should have thrived in their home far from civilization.



Instead the furry little creatures were in trouble. Their population throughout the Aleutians and southwestern Alaska had crashed by 70 percent in less than 10 years.

Trying to decipher the decline, Tracey Goldstein of the University of California, Davis, and her fellow researchers went looking for disease. What they found chilled them: evidence of a distemper virus usually found in seals. The virus had already killed more than 50,000 seals along Europe's shores over two decades. It had also been linked to seal deaths on the eastern coasts of Canada and the U.S. Yet seal distemper virus had never been found in the North Pacific. How did it get there?

The sleuthing soon pointed to arctic ice – or the lack of it. The year of the last big seal distemper epidemic in Northern Europe – 2002 – was also a time of extremely little summer sea ice in the arctic. Goldstein theorized that a melting Arctic opened the fabled Northwest Passage to disease transmission, allowing an infected Atlantic marine mammal such as a ringed seal, or its feces, to mingle somewhere with marine animals from the North Pacific, spreading the virus to sea otters there. The fragment of virus found in the Aleutian otters was identical to that in Europe's 2002 outbreak.

The theory has some skeptics, but if it is correct, marine mammals in the Arctic and Pacific oceans, particularly harbor seals, may be threatened by the virus's spread, according to Goldstein, who directs the university's Marine Ecosystem Health Diagnostic and Surveillance Laboratory. What is more, other species are now encountering one another or their effluence in the Northwest Passage, possibly leading to new exchanges of disease. **In the summer of 2010, for instance, bowhead whales from the Atlantic and the Pacific, which had been tagged and tracked by satellite, met there, a union that probably had not happened since the start of the Holocene epoch 12,000 years ago.**

As climate change heats the world's highest latitudes faster than almost anywhere else, animals on land, as well as in the sea, are getting sick. Temperatures across Alaska increased by 1.9 degrees Celsius on average over the past 50 years, compared with 0.7 degree C worldwide. Alaskan winters are heating up even more quickly than summers, rising an average of 2.6 degrees C. That warming can create more hospitable conditions for pathogens and parasites and encourage northward migration of many animals and pests, such as ticks, that often carry disease. New life is also crawling and swimming toward a warmer north, carrying microbes to populations that have not seen them before.

The migration could spell trouble for humans, too. In a shrinking world where old barriers are literally melting away, animal diseases can spread to humans more readily. Indeed, more than 60 percent of the new infectious diseases emerging in humans worldwide since 1940 have been transmitted from animals to people – including those caused by Ebola virus and severe acute respiratory syndrome (SARS) virus. Simply put, says Michael Grigg, chief of molecular parasitology at the National Institute of Allergy and Infectious Diseases, "if the animals are sick, we can get sick."

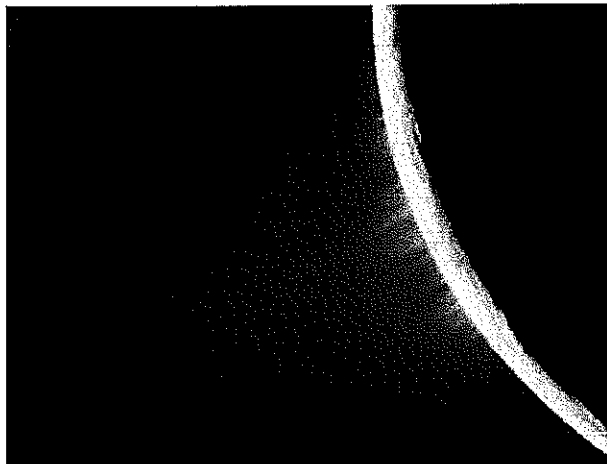
## ENCELADUS, THE COLD MOON WITH A HEART OF WARM FLUFF

New Scientist Vol. 224, No. 2993, Nov 1-7, 2014

In the cold of space, a tiny moon is keeping warm with a fluffy heart. Enceladus, the pipsqueak of a world renowned for shooting huge watery plumes into space as it orbits Saturn, has a secret – a core that contradicts everything we thought we knew about the structure of planetary bodies.

Planets and moons usually follow the classic "onion" model: an outer crust or atmosphere over a large mantle, with a sphere of dense material at the core. But new research presented at the Geological Society of America meeting in Vancouver on 19 October suggests Enceladus isn't following the rules.

The moon's density suggests it contains some rock. And since its surface is icy and it has a penchant for spewing water and ammonia into space, researchers have concluded it probably has a crust of ice, a watery mantle and a core of solid rock.



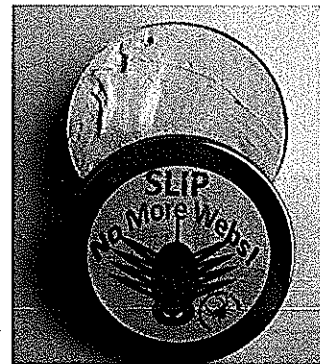
Enceladus: cold crust, soft centre  
(Image: NASA/JPL/SSI/Corbis).

As Enceladus orbits Saturn, changes in the planet's gravitational pull flex the moon, heating it up. But when James Roberts at Johns Hopkins University developed computer models to test just how this works, something didn't add up.

A stiff rocky core would not flex enough to generate the heat necessary to melt the ice or explain the jets. When Roberts made the core more like a snow cone than a stone, it flexed and created enough heat to fuel its famous water jets. "Enceladus has been surprising us all along," says Roberts.

## 'SLIP' – NO MORE WEBS

By Geoff Oxford from British Arachnological Society The Newsletter, No. 131, Autumn 2014



One major headache for operators of CCTV security cameras around the world is that spiders love to build their webs across the camera lenses, perhaps attracted by the warmth given off by the infrared light sources. Once the spider has spun its web the infrared light bounces off the silk and causes a white-out effect, rendering the image next to useless and thereby compromising security.

Wayne Lewis, Managing Director of Jelly Bean Design Studio based in South Wales, first tried CT-2 Synthetic Grease with Teflon on the periphery of car mirrors and around window frames with remarkable results – no webs were built with anchors on the greased areas. His company then experimented with its own formulations and eventually came up with a polytetrafluoroethylene (PTFE) infused white grease that outperformed all the other combinations of greases and potions tested: they called it "Slip", and for the name of the product, "No More Webs". The product holds up incredibly well under hot conditions, doesn't drip, and has kept its form in whatever the British weather has thrown at it.

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The 147th Annual Meeting of the Kansas Academy of Science

**Keynote Speaker: Dr. Gabe Bever**

Dr. Gabe Bever, Resident Research Associate, Division of Paleontology, American Museum of Natural History will provide the plenary session lecture on the topic "Science Along the Stem: Chasing the Origins of Amniote Structural Diversity."

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