

KAS BULLETIN



NEWSLETTER OF THE KANSAS ACADEMY OF SCIENCE

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145th ANNUAL MEETING OF THE KANSAS ACADEMY OF SCIENCE

April 5th - 6th, 2013

Johnson County Community College
Overland Park, Kansas



The deadline for submitting abstracts and for on-time registration is Tuesday, March 12th, 2013. Conference details and on-line registrations can be found at:

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

Friday's Events:

- **2-6 PM** Field Trip: Geology of the Kansas City Metro Area – meet in CLB411
- **4:15-6 PM** Field Trip: JCCC's Sustainability Program, a walking tour of campus – meet in Regnier Center Atrium
- **6:30-8:30 PM** Banquet – Regnier Center
- **7:30-8:30 PM** KAS Council Meeting – RC144
- **8:30-9:30 PM** Keynote Speaker: Dr. Tim Crews of The Land Institute – Carlson Center Polsky Theater
- **9:30-10:30 PM** Ad Astra Night at JCCC – Dr. Doug Patterson hosts a viewing party at the Paul Tebbe Observatory CLB 4th floor

The Paleontology Symposium and all other oral presentations will be held in the following rooms in the Regnier Center (RC): RC 101 D, RC 101 C, RC 144, RC 145, RC 146, RC 183.

Saturday's Events:

- Paleontology Symposium – Regnier Center
- **8-8:30 AM** Judges and Moderators Meeting – RC170 & RC171
- **8-8:30 AM** Refreshments – RC Lobby
- **8-10 AM** Posters may be put up (*must be up by 10AM*) – RC Atrium
- **8-10 AM** On-site registration – RC 1st floor
- **8:30-10 AM** Oral presentations Session 1
- **10-10:30 AM** Refreshments – RC Lobby
- **10:30-12 PM** Oral presentations Session 2
- **12-2 PM** Lunch – RC Cap Federal Room A&B
- **12-2 PM** KAS Business Meeting & Keynote Speaker Dr. Tim Crews – Regnier Center
- **2-2:30 PM** Refreshments – RC Lobby
- **2-3 PM** Poster session – RC 1st floor
Authors should be available at posters
- **2-2:30 PM** Field Trip: a repeat tour of JCCC's Sustainability Program – meet in RC Atrium
- **2-3:30 PM** Sustainability Workshop – RC D
- **4-4:30 PM** KAS awards presentation – Nerman Museum Auditorium

ONLINE REGISTRATION INSTRUCTIONS

Registration must be completed online at:

https://secure.touchnet.com/C20110_ustores/web/category.jsp?CATID=554

Click on the appropriate registration option, and leave the Quantity set to 1 – even if you have additional people to register. Then click Add to Cart. You will be prompted to enter your contact information and then allowed to enter additional registrants (by clicking continue, shopping, Conference workshops and events – KAS Meeting). Click on Checkout after all attendees have been entered.

Use the “Unregistered” account option to pay without creating a JCCC account. You will need to provide your email address. A confirmation email, to verify your registration, will be sent to that address. Use promo code 2012GRANT if you are a grant recipient.

ABSTRACT SUBMISSION GUIDELINES

Oral and poster presenters should download the Abstract Submission Form from the KAS website (<http://www.kansasacademyscience.org/files/kas2013-abstract-submission-form.doc>), fill it out, and email it to mlabarge@jccc.edu

In submitting your abstracts please follow the guidelines below. Following these guidelines will help us greatly in formatting the meeting abstract booklet.

Example:

Roth, D.D.^{1,2}, and Everhart, M.J.^{1,2}, 1. Sternberg Museum Of Natural History and 2. Fort Hays State University. PREPARATION OF A PROTOSTEGID TURTLE FROM THE FAIRPORT CHALK (CARLILE FORMATION; LATE CRETACEOUS).

The length of the abstract is limited to 250 words. This word limit does not include the title of your presentation, the names of the authors or the authors’ affiliations. The word limit applies to the text of your abstract.

Enter your presentation title in all capital letters and end the presentation title with a period or a question mark. You must use Times New Roman font, 12 point.

For author names and author affiliations, follow the example above. Do not use street addresses, department, or institution name abbreviations.

ORAL & POSTER PRESENTATIONS

Length of Oral presentations: Oral presentation should be no more than 15 minutes long and will be followed by up to 5 minutes of questions from the audience. Please arrive at your assigned presentation room 15 minutes before the beginning of your session to load your presentation.

Size of posters: Posters may be up to 48 inches long X 36 inches tall.

Schedule for poster presentations: Posters must be up and available for viewing by meeting participants by 10AM. The actual poster presentation session is 2-3PM. During this presentation session, you are expected to be by your poster to interact with meeting participants. All posters must be taken down by 5PM.

National Association of Academics of Science Release

STEM is an educational buzzword that stands for the teaching of Science, Technology, Engineering, and Mathematics. With STEM funding available, and much of it given to entities that do not have a program that truly encompasses STEM, the NAAS thought it appropriate to clarify and define what STEM education should reflect. The NAAS has approved the attached release regarding STEM education in the US. The NAAS contacts regarding this resolution are Dr. Lynn E. Elfner and Dr. Mandana Sassanfar.

STEM EDUCATION POLICY RESOLUTION

**National Association of Academies of Science (NAAS)*

ADHERENCE BY STEM SCHOOLS AND STEM EDUCATION PROGRAMS TO SCIENTIFIC INQUIRY AND TECHNOLOGICAL OR ENGINEERING DESIGN

WHEREAS, STEM Education is both the *mastery* and *integration* of Science, Technology, Engineering and Mathematics to embed STEM concepts, methodologies and skills into the habits of mind and actions of daily life for all PK-12 students; and

WHEREAS, STEM Education incorporates scientific inquiry and technological or engineering design through student-focused, project based curricula to develop skills of communication, teamwork/collaboration, creativity/innovation, critical thinking, and problem solving; and

WHEREAS, Science is a systematic method of continual investigations, based on observation, hypothesis testing, measurement, experimentation and theory building, which lead to more accurate explanations of natural phenomena, explanations that are open to further testing and revision and are accepted or rejected on the basis of empirical evidence; and

WHEREAS, Technology modifies the natural world through innovative processes, systems, structures and devices to extend human abilities; and

WHEREAS, Engineering is design under constraint that develops and applies technology to satisfy human needs and wants; and

WHEREAS, Mathematics is the concise language of nature that scaffolds, symbolizes, describes and defines the limits and relationships of science, technology and engineering.

WHEREAS, Technology and engineering, coupled with knowledge and methods derived from science and mathematics, create social and environmental value and economic wealth to improve the quality of life; and

WHEREAS, Integration of science, technology, engineering and mathematics into STEM curricula and activities should produce novel results and solutions to vexing questions in healthcare and disease prevention, energy, the environment, agriculture, sustainability, aerospace and manufacturing.

BE IT THEREFORE RESOLVED THAT: THE NATIONAL ASSOCIATION OF ACADEMIES OF SCIENCE URGES ALL STEM SCHOOLS, STEM EDUCATION PROGRAMS OR OTHER VARIATIONS OF STEM ACTIVITIES FOR STUDENTS TO ADHERE TO THE FUNDAMENTALS OF SCIENCE, TECHNOLOGY, ENGINEERING AND MATHEMATICS AND TO ENSURE THAT THEIR STUDENTS SHALL CONDUCT ORIGINAL RESEARCH AND TECHNOLOGICAL OR ENGINEERING DESIGN PROJECTS THAT CONTRIBUTE TO A FULLER UNDERSTANDING AND ENRICHMENT OF THE WORLD RATHER THAN SIMPLY REPEATING PREVIOUS RESEARCH OR TEMPLATE EXPERIMENTS.

***APPROVED 22 OCT 2012 BY THE BOARD OF DIRECTORS OF NAAS.**

Eminent KU Paleontologist, Larry Martin, passed away on Saturday, March 9th after a battle with lymphoma. It is with great sadness that we report his passing. It is a great loss to the world of paleontology. We express our deepest heartfelt condolences to his family and friends.

A 700,000-Year Trip From Mars to Morocco

by Sindya N. Bhanoo, The New York Times,
October 15, 2012

A meteorite that landed in the Moroccan desert last summer was ejected from the surface of Mars 700,000 years ago, a new study reports. The meteorite is composed of an abundance of black glass, with noble gases trapped inside.

“Based on the noble gas measurements, we could calculate the ejection age of the meteorite,” said Hasnaa Chennaoui Aoudjehane, an astronomer at the Hassan II University in Casablanca, Morocco, and the study’s first author.

The study appears in the current issue of the journal *Science*.

The meteorite, called Tissint after a nearby village, is only the fifth Martian meteorite that people have witnessed falling to Earth. There are about 60 known meteorites thought to be from Mars. But Tissint is unique because it fell into the desert and suffered little damage from Earth’s environment. “We had no rain between the moment it fell and the moment it was collected,” Dr. Aoudjehane said. “It was fresh, and it is very exciting to be able to analyze this.”

By analyzing the noble gases trapped in the glass, along with its oxygen isotopes and minerals, she and her colleagues were able to determine that the rock is Martian.

The meteorite may have been knocked loose from Mars by an asteroid or some other large body that hit the planet, the researchers believe. The impact may have also caused some melting, creating the black glass and preserving a Mars “signature” inside the glass.

Pieces of the meteorite are on display at several museums, including the Museum of Natural History of Vienna and the Natural History Museum in London.



A piece of the Tissint meteorite,
which fell to Earth in Morocco last year.
In the Natural History Museum in London

Ancient Marine Reptiles Swam in Rivers Too

by Sindya N. Bhanoo, The New York Times,
December 24, 2012

Mosasaur were large, ancient relatives of monitor lizards. They were common during the Late Cretaceous period, 66 million to 100 million years ago, and were found near shallow marine areas in salt water.

But researchers now say a newly discovered species of mosasaur lived in freshwater river environments. This species probably adapted to fresh water the same way river dolphins in Asia and South America did.

The new mosasaur has been named *Pannoniasaurus inexpectatus*. Researchers discuss the species and its fossils in the journal *PLoS One*.

The fossils, from newborns and adults, suggest that the mosasaur had limbs like a terrestrial lizard; a flattened, crocodilian skull; and a very long tail, half the length of its body. (The bodies ranged from 28 inches to 20 feet, though the average was about 10 feet.)

“These animals were undulating their tail like a crocodile to propel their movement in water,” said an author of the study, Laszlo Makadi, a paleontologist at the Hungarian Natural History Museum. “They used their limbs just to brake and steer.”

The fossils were discovered in an open-pit bauxite mine in the Bakony Mountains in western Hungary. In 1999, a mosasaur fossil was found in nonmarine rocks in western Canada, but scientists doubt it was a freshwater animal.

“That individual probably just exploited the river system and died there,” Mr. Makadi said. “But it was not specialized for that environment.”

Wet Wrinkled Fingers Evolved for Better Grip

by Sindya N. Bhanoo, The New York Times,
January 10, 2013

The prunelike wrinkles that result from a long, hot bath may have an evolutionary purpose, researchers say.

Writing in the journal *Biology Letters*, the scientists report that wrinkled fingers and toes allow a better grip on wet objects — so they may have evolved to give early humans an advantage in wet conditions.

“People are about 12 percent quicker” at moving wet objects, said an author of the study, Tom Smulders, an evolutionary biologist at Newcastle University in England, “if their fingers are wrinkled than if their fingers are non-wrinkled.”



He and his colleagues tested how quickly wrinkled and unwrinkled fingers could move wet and dry marbles. All the participants in the study were able to transfer dry marbles faster than wet marbles, but wrinkly fingers helped with the wet ones.

“It’s not just our fingers that do it, but our toes do it as well,” Dr. Smulders said. “The actual origin of this may have been to help us move on all fours.”

Wrinkly fingers could also have helped with gathering food from wet vegetation or streams.

Why, then, are finger pads not permanently wrinkled?

That remains to be studied, Dr. Smulders said, but “it may be that wrinkled fingers are more easily injured, or they may affect the sense of touch.” Further research with other species that share this feature may also help explain how long ago wrinkly fingers and toes evolved, and for what purpose.



KANSAS ACADEMY OF SCIENCE
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MAIL TO:

The 145th Annual Meeting of the Kansas Academy of Science

Keynote Speaker: Tim Crews, Ph.D.

Tim Crews is the Director of Research and a Research Ecologist at the Land Institute in Salina, Kansas. He is broadly interested in what agriculture can learn from the prairie and forest about sustainability. Tim's current research focuses on reducing or eliminating dependence on synthetic fertilizers in perennial agriculture. Before coming to The Land Institute in September 2012, Tim was a Professor of Environmental Studies and Agroecology at Prescott College in Arizona for 18 years. He was a visiting researcher in Australia with CSIRO in 2002 and with Rothamsted Research in the U.K in 2009. Tim received his Ph.D. from Cornell University in Ecology and Evolutionary Biology, and was an Ecology post-doc fellow at Stanford University before taking his faculty position at Prescott.
