***AcademiCast* Transcript**
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Post: A Texas Tech Paleontologist is "Flying High."

Hello everyone, I'm Sally Post and this is *AcademiCast*, brought to you by Texas Tech University.

Dr. Sankar Chatterjee, curator of paleontology at the Museum of Texas Tech is featured in a film that recently won the British version of the Oscar. "Flying Monsters 3-D," narrated by Sir David Attenborough, is the first 3-D film ever to earn a British Academy of Film and Television Arts award in the Specialist Factual category. In the film, Dr, Chatterjee is interviewed on the evolution of Pterosaur, the earliest vertebrates to develop flight.

Chatterjee: *This is a sort of Pterodactyl which lived during the age of dinosaur. And this particular one is called Tapejara, known from Brazil that lived about 150 Million years ago. And it was a very, very good flyer. We did all the simulations and it could fly very well. It could take off from the water or from the ground. It could fly it could glide.*

Post: Pterosaurs lived from the late Triassic Period to the end of the Cretaceous Period. Chatterjee says they dominated the sky, swooping over the heads of other dinosaurs. Their sizes ranged from that of a sparrow to a Cessna plane with a wingspan of 35 feet.

Four Texas Tech professors received a four-year $1.2 million grant from the Office of Naval Research to develop more effective systems for finding explosive materials. The researchers are creating new technology to better detect homemade explosives that current sensors are unable to find.

Texas Tech engineering students recently won the annual micro-electro-mechanical system contest held at Sandia National laboratories. The students created a dragonfly the width of five human hairs, with wings that actually move. The design will be produced in Sandia's microfabrication facility, one of the most advanced in the world.

Our integrated scholar features continue with Dr. Mindy Brashears. She is one of those Texas Tech scholars honored for her teaching, research and service. Provost Bob Smith talks with Dr. Brashears about her internationally renowned work in food safety.

Smith: The field of food science and technology owes a great deal of gratitude to Dr. Mindy Brashears, a world-renowned researcher and expert in food microbiology. Not only is Dr. Brashears a professor of food microbiology and food safety in the Texas Tech Department of Animal & Food Sciences in the College of Agricultural Sciences & Natural Resources, she also directs the International Center for Food Industry Excellence, which promotes research to protect consumers from food contamination on a global-scale.

Dr. Brashears' interest in food science developed in a roundabout way, based on her upbringing on a farm and background in agriculture.

Brashears*: Growing up on a farm I had an interest in agriculture, but I knew I didn't want to go back to the farm and actually farm and raise cattle. And whenever I came into the College of Ag at Texas Tech, I really thought I would probably only be there a semester or a year, but I was there because I had a scholarship. And I thought, 'well I'll find another major' because I wanted to go into a very science-based field. And I had never even heard about food science. Once I went into the animal science department and heard about food science and food technology, I knew that it was something that really interested me. And from my first class in there, I just really enjoyed it and knew right away I wanted to go into a career in the food industry and study food science and food technology.*

Smith: Dr. Brashears' research projects have a two-fold component: She looks at pre- and post-harvest measures to find ways to keep consumers safe from bacteria such as pathogenic strains of *E. coli* and *Salmonella*.

Brashears*: We really focus on both pre-harvest and post-harvest food safety – pre-harvest being in the live animal and post-harvest being in the meat product itself. Some of the pre-harvest work we do is looking at the interventions that kill E. coli before the cattle actually go to be harvested. And one of the big things we have done, is we developed a direct-fed microbial, which is like the bacillus bacteria that we can feed to cattle. So it's a good bacteria that kills the bad bacteria. We've done a lot of work on that and we are going to be expanding that work this summer to Salmonella and other types of bacteria to see what it kills. Some of the things on the post-harvest side we've looked at are interventions that actually kill the bacteria before the product gets to the consumer. So we've looked at things like acid washes, heat treatments, and even we've developed a microwave treatment that can cold pasteurize not only meats, but also eggs, peanuts and other products.*

Smith: One of the areas of the world that is of great concern in terms of food safety is Mexico. Dr. Brashears and her team of faculty and student colleagues travel to Mexico often to help packing plants follow safety-training measures more effectively. Let's listen as Dr. Brashears describes the kind of work she does on a global-scale.

Brashears*: A lot of our work really has shifted to Mexico. And we do both research and training there. Food-borne illness is the number one cause of death in children under five in Mexico. And it's very preventable. And it's our goal to reduce the amount of Salmonella and E. coli and other pathogens in the food supply in Mexico by working with the processing plants, and the animal growers and the retail markets, to reduce the amount of bacteria that gets to the consumer. And we do this through retail surveys to see where we find the bacteria, and then interventions where we can kill the bacteria in the food chain, and then by education and training of the food processing employees and the retail establishments as well.*

Smith: In addition to her research, Dr. Brashears is an engaging teacher. She teaches courses including food microbiology, at the undergraduate and graduate levels, and grant-writing at the graduate level. Dr. Brashears also works on outreach projects to improve public health.

Brashears: *We feel like just about everything we do is service. What our goal is to really serve the industry, and the consumer, and just people world-wide by providing the world with a safer food supply. That's really our motto, or our vision within this program. But the way we do that is by working with our scientific journals to make sure that the information gets out and it's correct. And so not only myself, but other members of our group serve on a number of editorial boards. We also teach a lot of outreach classes to the industry, passive training to everyone from the fruit and vegetable, to the meat, to the pet food industry. So that's a huge part of our service component. Teaching in Mexico, again, is part of our service. So we really have a lot of interaction with our stake holders, so that we don't just sit in the lab and do the work, that what we do actually makes an impact and improves public health in the long-term.*

Smith: Dr. Brashears' work in the classroom, in the laboratory, and in places around the world, makes her a notable integrated scholar. Indeed, she is a prime example of how one can balance the research, teaching and service components of academic life, to the benefit of students and society alike. We appreciate Dr. Brashears for all that she does at Texas Tech and beyond. Thanks for listening! I'm Bob Smith.

Post: Thanks, Dr. Smith. Two Texas Tech students received scholarships from the Fulbright U.S. Student Program, sponsored by the U.S. Department of State. Kendra Phelps, a doctoral candidate in biology, earned a research-based fellowship to study bats in Malaysia, and Julie Meadows, who graduated in December with a bachelor's degree in music, earned an English teaching assistantship also in Malaysia.

The economics department at Texas Tech recently received a $1.2 million gift from an anonymous donor to create the Institute for the Teaching and Study of Free Market Economics. The institute is expected to supplement the department's course offerings, support research, and encourage interdisciplinary dialogue on the behavior of free markets and the effects of marketplace intervention. The gift, which is part of the Texas Tech University System's billion-dollar Vision & Tradition campaign, provides funds for the department to hire three new faculty members. Thank you for joining us – I'm Sally Post for AcademiCast.