



Credit: NASA

Joe ENGLE
Aeronautical Engineering
NASA

Joe ENGLE 1932-

- A native of Chapman, in 1956 he graduated from the University of Kansas with a degree in aeronautical engineering. Joined the United States Air Force.
- Testing the X-15 rocket aircraft, he flew to an altitude of 280,600 feet, exceeding the 50 mile altitude required for an astronaut rating and became the youngest pilot ever to do so.
- Was selected by NASA in 1966 as one of the original crew of 19 for space missions.
- Commanded space shuttle test flights. On one flight, he became first and only pilot to manually fly an aerospace vehicle from Mach 25 (25 times the speed of sound) to landing.
- Commanded Space Shuttle Discovery's mission to deploy three communications satellites in 1985.
- Has flown over 185 different types of aircraft. Logged over 14,700 flight hours including 224 hours in space.

EXTRA COOL: His honors include being in the Astronaut Hall of Fame and the National Aviation Hall of Fame.

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2011 SCIENCE in KANSAS
150 years and counting

Kansas Sesquicentennial 2011



Photo credit WSU Dept. of Mechanical Engineering

BOB MINAIE
MECHANICAL ENGINEERING
Wichita State University



Bob Minaie current

- Principal Investigator (PI) on two 3-year projects for NASA as well as other projects. One NASA project focuses on repairing carbon fiber based composites.
- Composites are two or more materials put together to make a new material with all the good qualities of the originals. NASA uses composites on spacecraft because of their strength and light weight.
- When patches are applied, the cure temperature must be in a certain range to bond properly. So far there has been no way to tell the stages of the cure besides time and temperature, and sometimes the patch does not "take."
- Minaie and other researchers will be trying to take the guesswork out of the repair process. One thing they will try is putting tiny microwires inside the patch that can feed back realtime data to computers about the stages of the curing process.

EXTRA COOL: When this is perfected it can be extended to work on airplanes, boats or automobiles, many of which also use composites.

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Photo courtesy of KSU Photo Services

VIRGINIA NAIBO
MATHEMATICS
Kansas State University



Virginia Naibo current

- Grew up in Argentina. Joined KSU faculty in 2006.
- Does research in Fourier Analysis. This is a type of math that allows signals, images or sounds to be decomposed (broken down) into individual parts that are easier to understand. Sort of like the way a music chord can be broken down into single notes.
- This makes it easier to develop algorithms (step-by-step problem solving formulas) to compress or improve signals or digital images.
- The FBI uses wavelets, a type of decomposition, to compress huge fingerprint data bases. Also, an image or signal corrupted by noise can be improved by getting rid of the pieces that carry it.
- Fourier Analysis is also used in engineering, oceanography, cryptography (information security) and computer tomography, a type of x-ray that takes cross-section images of body organs.
- Naibo helped organize KSU's first MathPhysChem Symposium for Middle School Students in 2010.

EXTRA COOL: "Math trains you to think logically and to reason. Even if you don't go into math as a career, it is worth taking because it trains you to think a certain way."

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Credit: Pittsburgh State University

ZORAN PETROVIC
CHEMISTRY
Kansas Polymer Research Center
Pittsburg State University



Zoran Petrovic current

- Is the research director of the Kansas Polymer Research Center. The KPRC focuses on developing environmentally friendly materials.
- Recognized for developing new polymers (a type of chemical compound) made from natural vegetable oils like soybean oil. It can be used to make items like "green" floor tiles, flexible foam for plastic chairs, or temperature sensitive gels used in athletic shoes.
- The center recently received a patent for developing a soybean oil-based concrete that is 10 times stronger than traditional formulas.

EXTRA COOL: Petrovic is one of four KPRC scientists awarded the 2007 Presidential Green Chemistry Challenge Award from the Environmental Protection Agency (EPA). This group is the only research institution in Kansas to receive this honor.

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