



Courtesy of KU University Archives

Victor FROST

Electrical Engineering/Communications
Information and Telecommunications
Technology Center (ITTC), KU

2011 **SCIENCE in KANSAS**
150 years and counting

Victor FROST current

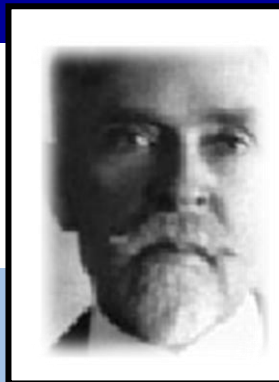
- Often it is impossible for emergency workers to access needed information after a disaster because people overwhelm communications networks. Frost developed techniques to give emergency workers digital priority during disasters.
- Helped develop one of the first remote communications systems that allowed dependable internet access at the northern latitudes such as Greenland.
- Led development of a transportation security project that combines hardware, software and sensors to enable real-time monitoring of goods en route.
- Inventor of the Frost filter, widely used for reducing speckle noise in radar, sonar and biological images.

EXTRA COOL: In the early 1990s, served as co-investigator on MAGIC, a national "information superhighway" project and a precursor to today's high-speed networks.



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Kansas Sesquicentennial 2011



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ED C. JERMAN X-RAY TECHNOLOGY

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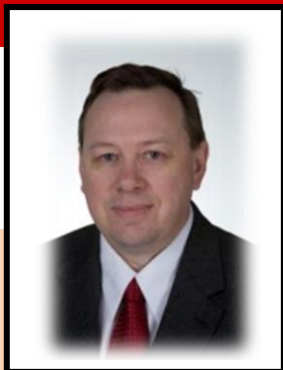
Ed C. Jerman 1865-1936

- Pioneer in the field of x-ray technology.
- X-rays were discovered in Germany in 1895. In 1896 Jerman was one of the first men in North America to produce an x-ray.
- Doctors started using x-rays right away. But the technicians had to guess how to use it, how to position and how long to expose a patient. And there were no lead shields like there are today to protect client and technician from radiation.
- Jerman helped develop orderly x-ray procedures and standardized techniques, turning the profession into a precise science. Using these standards, he then turned to training health care personnel on the x-ray equipment.
- Moved to Topeka in 1909. Retired to Winfield in 1934.

EXTRA COOL: In 1925, he did a project for the Field Museum of Natural History in Chicago in which he x-rayed Egyptian and Peruvian mummies.

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Kansas Sesquicentennial 2011



Credit: PSU Dept. of Physics website

ALEXANDER KONOPELKO ASTROPHYSICS

Pittsburg State University



Alexander Konopelko current

- As an associate professor in the Physics Department at PSU, he is studying black holes for NASA. Scientists believe a black hole occurs when a giant star (many times larger than our sun) collapses upon itself at the end of its lifetime.
- He is using data from NASA space-borne observatories, the NASA's Fermi Gamma Ray Space Telescope and the Chandra X-ray Observatory for this study.
- Also works with the ground-based VERITAS (Very Energetic Radiation Imaging Telescope Array System) a collection of four telescopes located in Arizona to study cosmic and gamma rays.

EXTRA COOL: Grew up in Russia. Was a scientist at the internationally-known Max Planck Institute for Nuclear Physics in Heidelberg, Germany, before coming to the United States.

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Photo courtesy of KSU Photo Services

Abbey NUTSCH Food Microbiology Kansas State University

2011 **SCIENCE in KANSAS**
150 years and counting

Abbey NUTSCH current

- Grew up in Wakeeney. Earned BS and PhD degrees in food science from KSU. Is an assistant professor of food microbiology there.
- Food science covers a broad area and can also involve food chemistry, product development, food engineering or sensory analysis.
- Nutsch has studied intervention technologies to kill *E. Coli*, *Salmonella* or other bacteria on beef carcasses. For example, in "steam pasteurization," carcasses pass through a steam chamber. This steam (remember water boils at 212 degrees F) kills bacteria on the outside of the meat but does not hurt the meat itself.
- Teaches courses on food safety (dealing with naturally-occurring contaminants) and on food defense (deals with intentional contaminants).

EXTRA COOL: Nutsch always liked science but didn't know exactly what she wanted to do when she was young. "Take heart. If you keep looking, you will find it," she says.

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