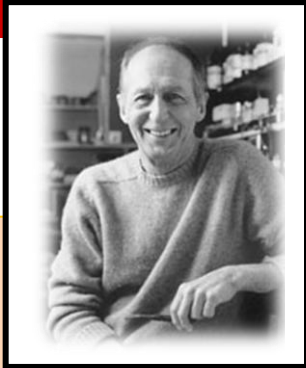


Kansas Sesquicentennial 2011



Courtesy of Ralph N. Adams Institute

RALPH N. ADAMS
NEUROSCIENCE

University of Kansas



Ralph N. Adams 1924-2002

- Developed new analytical methods for detecting chemical signals in the brain. These techniques are used by pharmaceutical companies everywhere to develop drugs for depression, schizophrenia, and other diseases.
- Developed a chemical "map" of the brain that revealed the distribution of dopamine and norepinephrine, molecules that send signals between nerve cells in the brain.
- His research also discovered that the brain's halves have different chemical makeups.
- The Ralph N. Adams Institute for Bioanalytical Chemistry at KU is named in his honor.

EXTRA COOL: He joined the Army Air Corps in 1943 and piloted B-17s and B-29s in the Pacific, which earned him his life-long nickname, Buzz.

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Photo courtesy of Barbara Anthony-Twarog

Barbara ANTHONY-TWAROG

Astronomy
University of Kansas

Barbara ANTHONY-TWAROG current

- Became the first woman faculty member in the physics department at KU in 1982.
- Analyzes starlight by breaking it down into the spectrum (the rainbow pattern of colors that occurs when light is sent through a prism). From this spread-out spectrum she can tell a star's temperature, if it is an old or new one, even what it is made of.
- Conducts research on light filters for telescopes. Helped develop technology that is now on the Hubble Space Telescope.
- Does research at the Kitt Peak Observatory in Arizona, California's Mt. Laguna and Chile's Cerro Tololo Inter-American Observatories.

EXTRA COOL: "Don't be afraid to ask questions. The best scientists ask the best unanswered questions," she tells students.

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



Courtesy of KU University Archives

Steven BARLOW
Neurobiology / Speech Physiology
University of Kansas

Steven BARLOW current

Current research includes:

- The brain activity involved in coordinating facial and vocal tract structures during speech and vocalization.
- The effects of deep brain stimulation on fine motor skills (like hand-eye coordination) in persons with advanced Parkinson's disease.
- Neural reorganization and tissue biomechanics in children having reconstructive facial surgery due to clefting.
- Using technology he invented at KU to study the human sense of touch system, especially in persons with hyperactive autism spectrum disorder.

EXTRA COOL: Developed an FDA-approved medical device to help premature babies learn how to nurse. A silicone pacifier powered by a computer-controlled air pump creates a pulsing touch stimulus on the surface of the infant's lips and tongue.

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Courtesy of KSU Photo Services

Elizabeth DAVIS
Equine Medicine and Surgery
Kansas State University

Elizabeth DAVIS current

- As a doctor of veterinary medicine (DVM) at KSU, she is the current section head of equine medicine.
- Was first to identify novel proteins that work with immunizations to protect against infection.
- Now researches how vaccines affect horses on a cellular level. What changes are brought about in the cells and how does this happen?
- Horses easily catch viruses and sicknesses. For example, they are the most sensitive of all species to tetanus. They need a tetanus shot every single year of their life.
- Vaccinations usually start at 6 months of age. Davis wants to know if we can start vaccinating foals at 3 months of age? When is the earliest age that best gives foals the benefits of vaccines?

EXTRA COOL: Her field offers a lot of biomedical research opportunities. "Scientists with a DVM degree and a Ph.D. can make a huge contribution to the field of science," she says.

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