



Photo credit PSU Dept. of Biology

Virginia RIDER

Biology
Pittsburg State University

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

Virginia RIDER current

- Her love of the natural world, especially animals, drew her to biology.
- She studies two female hormones, estrogen and progesterone, which have wide reaching effects in the body. She researches how these hormones stimulate multiplication (increase in cell number) and specialization (why a cell becomes a particular type of cell).
- She is also interested in the abnormal effects exerted by these hormones in disease. For example, how might these hormones be connected to systemic lupus, an autoimmune disease that occurs ten times more often in women than men?
- May help in the discovery of drugs to treat this disease as well as some kinds of cancers.

EXTRA COOL: Received the first ever Sydney A. McNairy Award for student mentoring from the National Institutes of Health (NIH). This award is the first time a governing body of science (NIH) has recognized that mentoring students is critical for the future of science.

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Kansas Sesquicentennial 2011



Courtesy of P. Rillema

PAUL RILLEMA

CHEMISTRY

Wichita State University



Paul Rillema current

- Currently works with alternative energy. Designs and synthesizes transition metal complexes (chemical compounds) of elements ruthenium (#44), rhenium (#75) and platinum (#78) that are mimics for photosynthesis in green plants.
- Upon exposure to light, these complexes are useful for generating electricity by transferring electrons to semi-conductors such as titanium dioxide. The result is an electrical-chemical cell that could light a light bulb.
- The complexes are also being explored as a catalysts (substances that help stimulate a chemical reaction) to remove the "greenhouse" gas carbon dioxide from the atmosphere. This CO2 can then be converted into commercially useful products.

EXTRA COOL: Directed one of five National Science Foundation Projects in the country on Research Sites for Educators of Chemistry.

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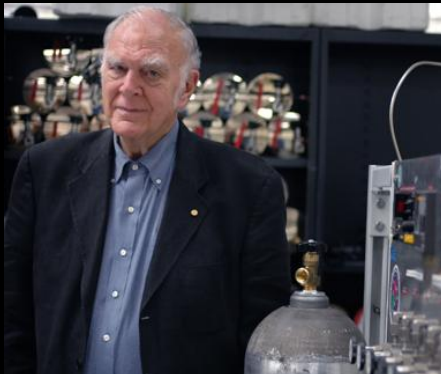


Photo credit Paul Kennedy 2006

F. Sherwood ROWLAND

Chemistry / Earth Systems Science

University of California, Irvine

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

F. Sherwood ROWLAND 1927-

- Held a post as a professor of chemistry at the University of Kansas from 1956-64. Did research for the U. S. Atomic Energy Commission during that time.
- At the University of California in the 1970s, he researched the effects of manmade gasses like chlorofluorocarbons (CFCs) on the atmosphere.
- Ozone is a kind of oxygen found 6 to 30 miles above the Earth in the stratosphere. This ozone layer absorbs most of the sun's harmful ultraviolet rays. He found that CFCs destroy ozone, thinning out this protective layer and creating what are called ozone holes, especially in the polar regions.
- Rowland's work led to international bans on many manmade chemicals.

EXTRA COOL: Co-winner of the 1989 Nobel Prize in Chemistry for his work on ozone depletion.

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Kansas Sesquicentennial 2011



Photo courtesy KU Endowment Association

TOM RUDKIN

COMPUTER SOFTWARE
ENGINEERING

Los Gatos, Calif.



Tom Rudkin current

- Grew up in Wichita. Graduated from Wichita West High School in 1969. Earned bachelor's degree in mathematics from the University of Kansas.
- Worked for Intel and Microsoft as a software development engineer and development manager.
- Famous as a co-writer of the first version of PowerPoint. This program allows pages or slides with text and graphics to be displayed live on a computer, printed on overhead transparencies or projected onto a screen. Before that there was no simple way to combine texts and pictures together in a presentation.
- Rudkin says it is essential for students to learn to combine science, computers, arts and humanities, so they can solve real world problems like climate change and loss of biodiversity.

EXTRA COOL: PowerPoint is now the most widely used presentation program in the world. Your teacher probably uses it in your classroom.

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