



## Warming Your House, Not the Globe

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Dr. Weete came to West Virginia University in September, 1998. He administers the WVU Research Office and works collaboratively with other vice presidents, deans and directors in providing institution-wide leadership for the University's comprehensive research programs, including university-wide centers and institutes that report to the Research Office.

He was Professor, Associate Dean for Research and Director of the Leach Science Center in the College of Sciences & Mathematics before coming to WVU. He has also been an Invited or Visiting Professor at the University of Paul Sabatier in France, University of Zurich and University of Ottawa. He is past chair of the Biotechnology Division of the American Oil Chemists' Society and has served on the editorial boards of several international journals. He is a member of the Board of Directors of the Institute for Scientific Research and Research Partnership to Secure Energy for America (RPSEA), and the Advisory Council of the Counter Drug Technology Consortium of the National Guard Bureau in Washington D.C.

Dr. Weete's primary research interest is in the biochemistry and biotechnology of lipids in eukaryotic microbes. In 1980, he authored *Lipid Biochemistry of Fungi and Other Organisms*, and has 170 other publications. He holds four U.S. and several international patents.

The future prosperity of our nation depends not only on reliable and affordable energy, but also on the secure and efficient delivery of fuel sources and power distribution. The 21st Century has brought new challenges with respect to energy utilization and consumption. Some of these include terrorist threats; natural disasters; shrinking reserves of oil and natural gas; global climate change; environmental pressures; geopolitical unrest; the deployment of more expensive and advanced energy technologies; and the need to make costly upgrades to our energy generation and distribution infrastructures.

West Virginia is an 'energy state'. Our fossil energy sources, particularly coal, have been one of the traditional key components of the West Virginia economy for many years. The high price of natural gas helped the state's economy to grow by increasing the demand for less expensive coal for power generation to displace the load carried by natural gas turbines. At the current production level, West Virginia has sufficient recoverable coal to provide electricity generation for 100 years. Although our national strategy is to reduce the dependence on fossil fuels, the current demand for coal is expected to continue in the foreseeable future. There are no economical alternatives to replace a fuel source (coal) that generates over 52% of our electricity.

In keeping with the University's long history of energy and environmental research at the state, regional, and national levels, West Virginia University is taking proactive steps to expand its programs.

WVU has recently unveiled a new energy program: "Revitalizing the Energy and Environmental Research and Education Agenda at West Virginia University."

This strategic initiative addresses energy and related environmental issues of state, national, and global importance. The overall aim of this initiative is to address the national propriety of having a diverse supply and delivery of reliable, affordable and environmentally-sound energy. Some of the broad program areas include:

- Exploration and extraction of fossil fuels—coal, gas and oil
- Fuel utilization and conversion—combustion and gasification, sequestration, power generation and distribution, system efficiency and reliability
- Non-conventional transportation fuels and other products from fossil and renewable sources—chemicals and materials from coal, biofuels, bioproducts
- Energy efficiency and sustainability, economics, and policy

We will include sub-programs in environment, security, safety, education and training, and technology transfer in each of the above areas.

Another aim of our energy initiative is to serve as a magnet for energy and environmental businesses to locate near the University because of the students and highly trained graduates as well as facilities.

Through our partnership with the University of Pittsburgh and Carnegie Mellon University, we are working with the DOE national laboratory, National Energy Technology Laboratory (NETL), to leverage our intellectual capital and capabilities to create a regional center of excellence for energy research.

Our three institutions, based around NETL's campuses in Morgantown and Pittsburgh, will work to establish the I-79 corridor as a focal point for advanced technologies for extracting and using fossil fuels.

Through its leadership position as a Board Member, WVU will play a key role in guiding the programs of the Research Partnership for a Secure Energy America

(RPSEA) to assist small operators in West Virginia to develop our state's unconventional gas and oil reserves and provide technology transfer assistance.

WVU is also collaborating with counterparts in China on a federally supported project on coal-to-liquids (CTL) technologies. The China program will provide information that can help our own efforts to deploy CTL plants in West Virginia and provide opportunities for exporting mining equipment to China.

Our programs prepare students to enter the workforce, thereby providing the human capital needed to support business in West Virginia and generate the new, advanced technologies necessary for the responsible extraction and use of our fossil energy resources.

West Virginia University, working with federal, academic, and industry partners, will be providing the pipeline for the future highly trained workforce for the energy and related environmental industries, developing technologies for the environmentally friendly extraction and use of fossil fuels, and serving as a catalyst around which energy technology businesses migrate to take advantage of the expertise and resources at WVU. ♪

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