



The Role of Science & Technology at West Virginia University

By Curt M. Peterson

Political ideology, money, and a short attention span kept America from finding innovations that could have solved the energy crisis of the 1970s and prevented the difficulties we now face. This time around, we simply can't afford to lose our focus.

We were disengaging from an unwinnable war in Southeast Asia in the 1970s when America was first awakened to our dependency on foreign oil. Energy was cheap, our cars were gas guzzlers, and our lights were on all night.

The oil embargo changed all of that. The federal government ramped up investment to encourage energy research. People walked more, used public transportation and shopped around for smaller, more fuel efficient cars, which were in scarce supply.

In Morgantown, plans were under way to turn coal into liquid fuel in something called the SRC-II plant. In a Rose Garden ceremony, President Carter signed a cooperative agreement with the ambassadors of then-West Germany and Japan, as then-Governor Jay Rockefeller and Senator Robert C. Byrd looked over their shoulders. The three countries agreed to co-develop the \$1.4 billion SRC-II plant to convert 6,000 tons of high sulphur coal into 20,000 barrels of oil a day for boiler, heating and motor fuel.

The US Department of Energy funded construction of a new fluidized bed boiler experiment at WVU. An enormous tower-like structure went up and the boiler parts designed to help experiment with a new more efficient way of burning coal were delivered and neatly stacked for installation.

Then, the winds of change came. Gas for vehicles became plentiful, the political tastes of the nation turned toward less government spending and research, and America's business leaders got back to the business of making money.

The SRC-II plant was never built and the fluidized bed boiler tower was converted into an office building that now houses the WVU Research Corporation. The boiler parts rusted away in a field across the street.

The incentive to innovate was snuffed out, and we lost our focus on finding solutions to a problem that would return to haunt us three decades later.

In the 1980s, gas guzzling SUVs, minivans that weren't so mini, and extended cab pickups that consumed gas similar to pre-embargo models became the rage.

It was "Morning in America." And so here we are again with people calling for coal liquefaction and gasification. But this time the combustion of coal has to be clean to reverse climate change, so we can add carbon sequestration and storage to the mix of problems that require solutions. And don't forget the issues surrounding the proposed "cap and trade" system that will require companies to pay \$646 billion over eight years to buy the tradable rights to emit pollutants that contribute to global warming.

Now, more than ever, we need to be wary of changing conditions that can cause us to lose focus. Already, oil prices have come down from the crippling levels of a year ago. That can make it easy to rationalize that \$2+ gas is a bargain, particularly if the economy begins to show signs of recovery.

Our very best coping strategy is to take full advantage of the current circumstances; aggressively harvest the research funding now on the table through the American Recovery and Reinvestment Act; and push key projects over the goal line of success so we can make a difference for all Americans.

If we can bring new innovations forward to solve the perplexing problems of this energy dilemma, then we have indeed done more than cope, we will have fulfilled WVU's obligation to make people's lives better by applying new knowledge to a practical purpose with very real results.

At WVU, we are in pursuit of answers to the problems. Specifically, WVU has been concentrating on seven key steps that it must continue to take the fight forward. **Here they are:**

1. Continue to attract and retain the best and brightest researchers in order to achieve an immediate and lasting impact on the challenges facing society
2. Pick our projects with caution and optimism
3. Be serious and effective about discovering funding sources to back our research programs and invest the resources necessary to go after them

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EVENTS

West Virginia Manufacturers Association Annual Meeting will be held June 14-16, 2009 at Glade Springs Resort in Daniels, WV. For more information, or to register as a vendor or participant, please contact Patty Barnhart at the Manufacturers Association by calling (304) 342-2123.

2009 ACEEE Summer Study on Energy Efficiency in Industry sponsored by The American Council for an Energy-Efficient Economy will be held July 28-31, 2009 at the Conference Center Niagra Falls in Niagra Falls, NY. For more information or to register, click here <http://www.aceee.org/conf/09ss/09ssindex.htm>

Introduction to Fan System Assessment Tool (FSAT) presented by the U.S. DOE Industrial Technologies Program will be held June 15, 2009. This Webcast provides an overview of the FSAT and how it can be used to target opportunities for energy savings. For more information and to register visit the ITP events site: <http://www1.eere.energy.gov/industry/newsandevents/events.html>

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4. Use those attracted resources wisely and with effect
5. Teach the next generation as we work side by side with them to both discover and impart new knowledge
6. Pursue innovative approaches to commercialize those research results with effectiveness, prudence and agility in order to create new companies, products, jobs, and economic development for the benefit of society, and
7. Promote and recognize our research accomplishments and our stories of success so that more support and success will follow

Our charge is to keep America's lights on, its economy moving, and its population prosperous by keeping its energy research focused, productive and effective.

Dr. Curt Peterson is Vice President for Research and Economic Development at West Virginia University and serves as President of the WVU Research Corporation. This article is taken from his presentation on April 22, 2009 at the workshop on, "Energy Strategies in Challenging Economic Times with Uncertain Environmental Regulations: Building a Research and Commercialization Agenda."

Co-Funding Opportunities for IOF-WV Research Teams

Announcement	Due Dates	Funding
National Science Foundation Small Business Innovative Research Program Phase I Solicitation http://www.nsf.gov/funding	Request for Proposals: Now Open Proposals Due: June 9, 2009	Estimated Funding: Up to \$150,000 per award
Rural Energy for America Program Grants/Energy Audit and Renewable Development Assistance (REAP/EA/REDA) http://www.rurdev.usda.gov/rbs/busp/REAPEA.htm	Request for Proposals: Now Open Proposals Due: June 9, 2009	Estimated funding: Up to \$100,000 for grants, awardee pays 25% of audit costs
National Institute of Standards Technology Innovation Program https://www.nist.gov/tip/helpful.html	Request for Proposals: Now Open Proposals Due: June 23, 2009	Estimated funding: Projects in the areas of "Civil Infrastructure" and "Manufacturing". Fiscal year 2009 appropriations include funds in the amount of approximately \$25 million for new TIP awards.
Economic Development Administration EDA Recovery Act Funding http://www.eda.gov/PDF/FY09ARRAF-FOFINAL031309.pdf	Request for Proposals: Now Open Proposals Due: June 30, 2009	Estimated Funding: The Recovery Act appropriated \$150,000,000 for the EDA American Recovery Program under the auspices of PWEDA
IARPA Advanced Materials and Fabrication for Coherent Superconducting Qubits Program http://www.arl.army.mil/www/default.cfm?Action=6&Page=8	Request for Proposals: Now Open Proposals Due: July 31, 2009	Estimated Funding: TBD

Bhaskaran Gopalakrishnan, IOF-WV Energy Efficiency Research Fellow, WVU Industrial Assessment Center Director, and IMSE Professor has had a technical paper selected for inclusion in the new SAE International Journals. "Energy Conservation through Productivity Enhancement in Manufacturing Facilities" will be published in the April 2008 edition of the SAE International Journal of Materials and Manufacturing.

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