

## WMU's Dr. Green

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KALAMAZOO — Dr. John Patten became a "green man" prior to his arrival at Western Michigan University (WMU) in 2003 — and that description has nothing to do with gamma radiation, olive-colored skin or a hulking appearance.

WMU's Manufacturing Research Center engineering manufacturing director has an extensive green resume and heads WMU's Green Manufacturing Initiative (GMI), which tackles projects many might view — all puns aside — as "incredible."

"Green manufacturing involves an environmental and energy component," Patten told *MiBiz*, saying WMU's GMI helps companies green their facilities by way of products, processes and the buildings.

Prior to taking the helm of MRC, Patten created the Manufacturing Engineering Technology program at UNC Charlotte in 1986. He was the conduit for establishment and co-director of the Carolinas' Consortium for Alternatively Fueled Electric Vehicles — an organization dedicated to integration of activities and transfer of technology by way of its electric vehicle programs. Additionally, Patten's experience with the energy industry extends back into the 1970s.

His WMU debut coincided with the August 2003 power outage that impacted much of the Northeast United States.

"It was a hot topic for everybody when I showed up in town," said Patten.

The incident made people more aware of the energy situation. And fortunately, Patten had the necessary skills and experience to address the topic. Sitting down with 30 companies across the region — with most based in Battle Creek and Kalamazoo — the man hired to start MRC needed to know "what to do with it and what to shape it into." Patten said the green initiative commanded everyone's attention.

"We had critical mass to build a research program around," he said.

Patten keeps a busy schedule. Besides Kalamazoo, he has offices at WMU's Muskegon, Lansing, Benton Harbor and Battle Creek campuses. Each has a manufacturing engineering program that offers a Bachelor of Science in Engineering degree with a manufacturing focus. According to Patten, there are approximately 60-75 students in the manufacturing program offered via the Extended University Programs. The program is offered through a cooperative effort with community colleges.

WMU's Battle Creek Kendall Center campus has taken part in the launch of GMI. The initiative supports businesses from many industry sectors looking to green their facilities. Patten said after evaluation of company requests, pairing with the most appropriate person or entity takes place. Many of the requests are geared toward energy savings.

Most of the time, Patten said firms have done the easy stuff and are looking to do the next level of activity. This might include wind turbines, greener materials or facilities related use.

"It's all across the board," he said.

Patten indicated students are involved with GMI, saying they "help survey what other folks are doing" and are "involved in project analysis implementation."

GMI is not limited to WMU. The university has united with Michigan State University, Wayne State University, University of Michigan and Michigan Technological University to create the Consortium for Advanced Manufacturing of Alternative and Renewable Energy Technologies (CAMARET).

In its mission and scope statement, the consortium – in support of Michigan companies and organizations engaged in alternative and renewable energy technologies – provide "the centralized expertise and resources necessary to insure that the job (design and manufacturing) is 'done right' with respect to the products and systems from cost, quality, throughput and EBDM perspectives."

According to Patten, environmentally benign design and manufacturing (EBDM) represents another name for green manufacturing.

"That doesn't include the energy component," he said, explaining CAMARET addresses EDBM and energy.

Practices of green manufacturing include preventing pollution and saving energy at all points in the design, manufacturing, marketing and recycling processes. When assisting companies with finding the right person for the job, Patten explained that a company might get referred to one of the CAMARET partners or a particular business in the industry.

CAMARET works and partners with companies and organizations specializing in the design of alternative and renewable energy technologies. Although Patten can't disclose specific names, he did say a number of wind industry companies make up the list. CAMARET also works closely with the Michigan Economic Development Corporation and NextEnergy. The consortium wants to make Michigan a leader in the manufacture of alternative and renewable energy technology products and services.

Helping existing companies grow into new markets, he said, represents one area making this possible.

Patten explained how the consortium helps companies apply their technology to the alternative energy business. Using a business that makes composite materials as an example, he said technology could be used for the making of blades for wind turbines. The same goes for a company making gearboxes.

"Because applications are different, they need assistance," he said, noting CAMARET provides this assistance.

The consortium also helps out-of-state companies locate in Michigan and assists new companies that have been put in place to develop wind energy technologies.

Additionally, Patten co-chairs the Michigan Wind Energy Manufacturing Working Group, which works to advance the capacity and capabilities in the state for designing, engineering and manufacturing of wind systems. According to Patten, when the group began three years ago, it knew of half a dozen companies in the state involved with wind turbine components. In the

last year, the number rose to over 30 companies actively involved in wind turbine manufacturing. Because new companies are emerging all the time, Patten believes that number might be closer to 45-50.

"The growth is fairly dramatic," he said. "Michigan is on the radar screen for wind turbine manufacture."

In Patten's opinion, manufacturer interest in green manufacturing stems from a desire to save money, increase productivity and improve efficiency. Many firms have already instituted lean manufacturing and now look to "combine lean and green together," he said.

Patten feels the future of green manufacturing looks bright. Just 10 years ago, many people didn't know what he was talking about. But times have changed.

"You don't have to educate and convince," said Patten.

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