

UWM to compete in Solar Decathlon 2009

By Laura L. Hunt

A team of UWM faculty and students is one of 20 chosen from an international field to compete in the Solar Decathlon 2009, held every other year and sponsored by the U.S. Department of Energy (DOE).

Each team receives \$100,000 from DOE to design and build from scratch an 800-square-foot house powered entirely by solar energy. The competition will be held on the National Mall in Washington, D.C., in the fall of 2009, but UWM students in architecture and engineering already have been working on their proposal for a year.

Assistant professors Gregory D. Thomson, Architecture; Chris Cornelius, Architecture; Yaoyu Li, Mechanical Engineering; and Adel Nasiri, Electrical Engineering, submitted the winning proposal and will head an interdisciplinary team of students.

Each home will use solar photovoltaic technology to create enough power to meet all energy demands for the house. Using energy-efficient technologies, the project will demonstrate that the typical American home, with dishwashers, washing machines, computers, televisions and other appliances, can be powered entirely by the sun without having to sacrifice all the modern comforts and aesthetics Americans are accustomed to.

After designing and building the houses at their respective universities, the 20 teams will assemble their projects on the National Mall. After three weeks of construction and competition, the winning team will be the one with the most points awarded in 10 specific areas, such as architecture, engineering, comfort, energy balance and market viability.

"There are minimum standards of energy production that we have to achieve for the competition," says Thomson, "so it is more about minimizing energy demand and coordination of energy-saving strategies with design considerations."

The building UWM is designing will be on a residential scale, he adds, but the technology going

on within it will be more on the scale of a small commercial building.

Working with We Energies, Nasiri and his students are developing a complete solar energy system that will be used in the design. Consisting of both photovoltaic cells and battery storage, the system can be marketed together. Nasiri's lab is planning to install a prototype of the equipment on the roof of the Engineering and Mathematical Sciences (EMS) building at UWM.

UWM's proposal also may have been chosen because of the work UWM students have already done in designing affordable and sustainable modular homes for a studio Cornelius is teaching. In a project involving the local chapter of the American Institute of Architects (AIA) and city officials, Cornelius' students designed two homes for Merrill Park in Milwaukee and one home in Racine.

"We took a lower-tech approach because of cost considerations," says Cornelius. "We didn't use solar cells, but focused instead on techniques like orientation of the building, passive solar heating and reuse of rain water."

Those techniques will be incorporated into the Solar Decathlon project, along with more aggressive strategies, says Thomson. As the design takes shape, students will use leading-edge design and analysis software that will track factors such as heat gains and losses and available daylight that results from decisions like windows placement.

This year's teams have been selected from universities in the United States, Canada and Germany.

DOE's Solar Decathlon complements the President's Solar America Initiative, which seeks to make solar power cost-competitive with conventional forms of electricity by 2015. It also showcases some of the work of UWM's research cluster in the field of alternative energies.

To see a listing of teams and photos of homes from the last Solar Decathlon, go to www.solardecathlon.org/.



WE'D LIKE TO HEAR YOUR GOOD IDEAS - AND YOUR COMPLIMENTS, TOO

The Quick Wins Plus Committee is looking for your good ideas to become Quick Wins - ideas for positive change that are low- or no-cost and can be implemented in a relatively short period of time.

As a part of Quick Wins Plus, we also solicit kudos via our "Panther Points of Pride" submission area on our Web site.

This allows the campus community to send their compliments to people and units they feel have done a very good job - something or someone we at UWM should be proud of.

We recently received the message below to pass along to Facility Services and their Buildings and Grounds unit regarding all the snow removal efforts that have made this a memorable winter.

"A big thanks to all who take care of the ice and snow on campus! It's been a bad winter, but you have done the very best you can to clear snow and ice. And I really appreciate that."

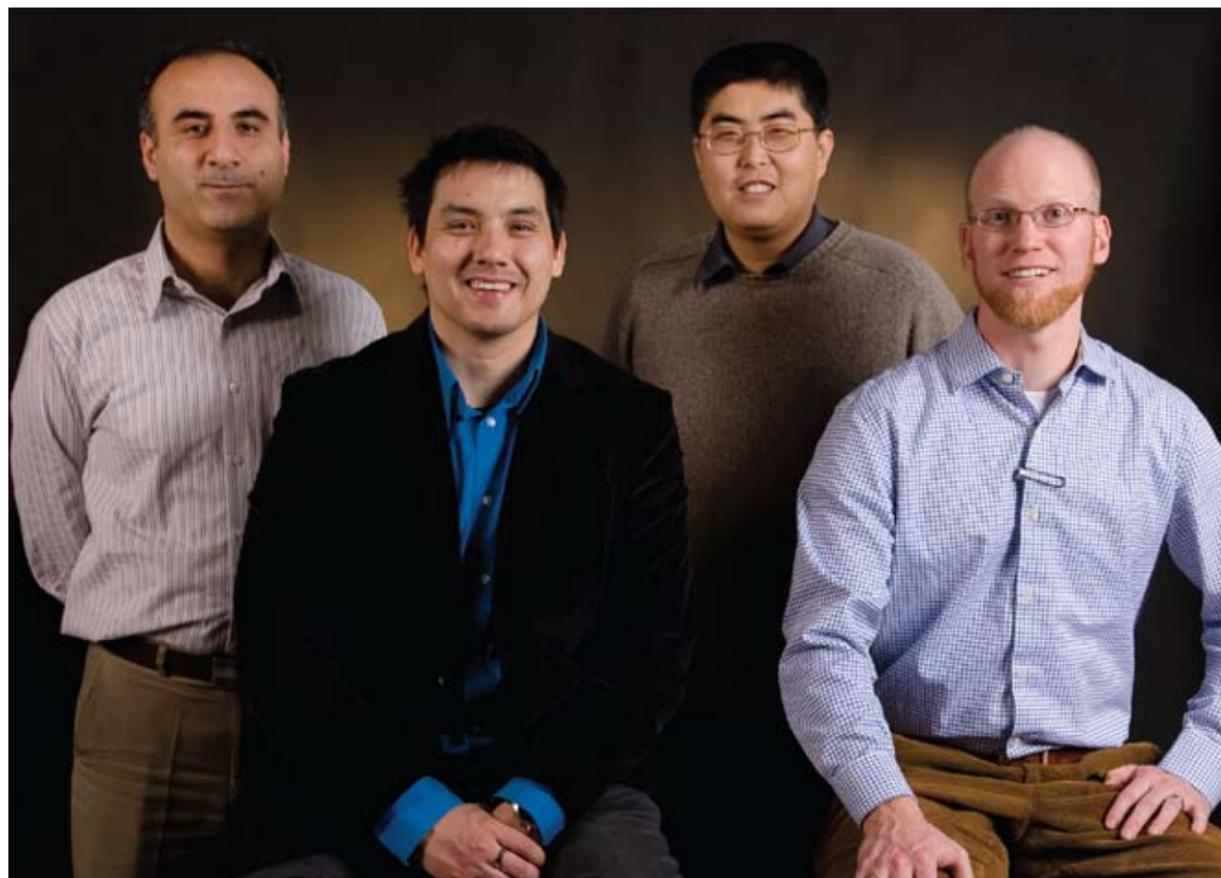
"This includes the folks who clear parking lots and walks, as well as the building custodians who not only spread the salt but then have to clean it up in the building after it gets tracked in. Good Job!"

The deadline for submissions to QW+ for the 2007-08 academic year is Tuesday, April 15 - so hurry and send us your good ideas for positive change - and your compliments, too!

Your submissions can be sent to us using our online form at:

www.uwm.edu/MilwaukeeIdea/quickwins.htm

QW+ is supported by the Office of the Provost and The Milwaukee Idea.



From left: Assistant professors Adel Nasiri, Electrical Engineering; Chris Cornelius, Architecture; Yaoyu Li, Mechanical Engineering; and Gregory D. Thomson, Architecture, will lead UWM's Solar Decathlon team of students from both engineering and architecture.

Peter Jakubowski