SAVVY RESEARCHERS
SEE THE LIGHT

Case Western prof, local companies collaborate on $7.5M project that aims to improve solar panels’ durability

**By CHUCK SODER**
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Roger French is building a torture chamber designed to test the limits of solar panels — and extend their useful life.

Dr. French is heading up a $7.5 million effort to transform the fifth floor of the White Building at Case Western Reserve University into a place where he and other researchers can test the durability of solar panels and design ways to improve them.

When complete, the Solar-Durability and Lifetime Extension Center will include simulators capable of exposing See SOLAR Page 6

**SHED SOME LIGHT**

The Solar-Durability and Lifetime Extension Center at Case Western Reserve University is a collaboration between Roger French, the center’s director, and several companies.

**Who:** Solar electronics maker eQED LLC of Mayfield Village and weathering equipment and services firm Q-Lab Corp. of Westlake are among the project’s partners.

**Focus:** The project not only will subject the solar panels to stress tests but also will help researchers understand why the panels fail. Researchers then will use their material science expertise to fix them.

**Financial support:** The project is financed by two state grants totaling $3.8 million, as well as contributions from CWRU and other collaborators.

Third Frontier may swap grants for seed loans

**By CHUCK SODER**
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So-called “venture seed loans” could end up replacing many of the grants the state of Ohio awards to technology companies.

The commission that oversees Ohio’s Third Frontier economic development program is thinking about issuing venture seed loans instead of $50 million to $60 million in grants that it typically has awarded each year through the Third Frontier’s cluster development program.

The loans would bear similarities to both grants and private equity investments. A company would receive between $1 million and $2 million to finance the development and commercialization of a new technology.

The firm would not have to pay back the full amount if its product never reaches the market. If the product sells well, however, then the company might need to pay back significantly more than it borrowed.

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Hiring agencies shore up own staffing levels

Demand for recruitment services rises as employers seek to fill job openings

**By MICHELLE PARK**
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Put simply, they are hiring more people so they can hire more people.

Several Northeast Ohio staffing companies are adding to their internal staffs — and, in some cases, to the number of their physical offices — to meet continued increased demand from client companies seeking to hire.

Reacting to a “definite growth period,” Area Temps Inc. in Cleveland in recent weeks opened a new division, Area Professionals, to handle the direct hire and contract recruiting of professional, mid-management and executive positions, said president Kent Castelluccio. That’s in addition to two other divisions, Area Office Services and Area Technical.

The company has seen in the past six months a dramatic increase in emails and phone calls from employers who want to hire and applicants looking for work, he said.

The goal, Mr. Castelluccio said, is to open over the next 12 to 18 months at least one more physical location, and possibly up to three. Area Temps had six locations before it closed three after the recession struck.

Inside Corporate screening services company reports healthy uptick in business
See HIRING Page 9

INSIDE:

The family ties that bind us

Some local business owners share the benefits and challenges of incorporating their children into the family operation.

See this week’s Small Business section on Page 10

Looking to save money on your health insurance?

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Wage: Bill also would simplify bid-build process

continued from PAGE 3 have opposed the changes that would exempt projects from the prevailing wage standard. Other construction reforms have been supported by those same contractors and opposed by trade contractors who specialize in major trades like plumbing and electrical work.

Those trade contractors would lose their ability to bid directly for many state contracts under the construction reforms.

Amendments considered in the House and the Senate could have beaten back significant parts of the Kasich proposals but the conference committee that reconciles the differences between the two chambers mostly will be concerned with setting thresholds for at what point the changes kick in.

For example, the current law requires contractors on state projects to pay prevailing wages for any project costing more than $78,250. The governor proposed raising that threshold to allow nonunion wages to be paid on all projects costing less than $5 million. The House reduced that to $3.5 million, and the Senate’s version sets the threshold at $125,000 during the first year after the law’s enactment, jumping to $250,000 after that first year.

The other construction reform sections will require similar reconciliation, though all the key changes in the law will allow alternative construction management procedures.

Dissenting opinions
Tim Liville, executive vice president of the Construction Employers Association, said his group is one of those that supports construction reform but opposes the change to the prevailing wage statute. “We think (construction reform) is going to save the state a lot of money,” he said. It brings Ohio under the 21st century.

The Construction Employers Association has about 100 members, including many of the region’s largest union contractors. So his organization is opposed to changing the prevailing wage law.

“Repealing prevailing wage doesn’t save money,” Mr. Liville said, arguing that union apprenticeship training programs and the higher productivity of skilled union workers over- come any wage differential. “The prevailing wage law in Ohio is the only quality standard for construction done on public buildings.”

Naturally, nonunion contractors are on the other side of the prevailing wage law.

“I see no reason why a refugee from the 1930s (prevailing wage requirements) should even be around in the law,” said John Hitchcock, vice president of C.T. Taylor Co., a Hudson nonunion contractor.

“Prevailing wage is an unfunded mandate on municipalities, libraries and universities.”

Mr. Hitchcock said qualifications for state bidding and on-site moni- toring are unnecessary and only one in the middle is the Mechanical Contractors Association of Ohio. It supports the changes in the prevailing wage law but initially was opposed to the other reform proposals, which, it believed, would have left the trade members out of public contracting work. Mechanical contractors install heating and air conditioning systems.

“These provisions as currently written create a highway for the private sector to lure corporations to come into Ohio and push out local contractors,” said Ms. Dahlberg, who was a member of the OSA. “It’s a roadblock to a fair and open process.

The association now supports the Senate version of the plan, which gives contractors a greater opportunity to bid on state business.

“As the budget progresses to conference committee and eventually implementation we will continue our work to ensure open access to the public construction market for Ohio small businesses,” Ms. Dahlberg said in a statement June 3 bid-out the prevailing wage version.

Changing the rules
Under the current state law public agencies must use what is called the design-bid-build process. That means one contractor who creates a full set of drawings before the agency advertises for bids on the project, though there must bid out four separate packages — one for electrical work, one for mechanical work, one for structural work and one for painting, flooring and steel erection.

Under the construction manager it makes the lowest bid on all four pieces of the project, the state must hire separate contractors for each major piece of work. That separates the reform panel, said can cause confusion about who is in charge and can lead to cost overruns that are borne by the public entity.

The Kasich administration pro-posal offers two alternatives to the traditional process.

One is the design-build method. This model would allow public officials under the same roof as construction, allowing the two processes to move more quickly in tandem, which, advocates argue, saves time and money.

The second alternative is called construction manager at risk. Using this model, the public agency hires a construction manager who takes on the financial risk of delivering projects on time and on budget.

A construction manager is chosen before the design stage is complete so the construction manager and architect can work together, which allows the contractor to cost savings. The construction manager then gives the public entity a guar- anteed maximum price and is responsible for any cost overruns. In exchange the construction manager has some flexibility on which subcontractors would be bidding on the project, though the bid openings will be public. It’s that aspect that has the trade contractors worried, they would be shut out of some business. How- ever, the Senate version requires construction managers at risk to use open bidding for key trade sub contracts.

Solar: Added longevity the goal

continued from PAGE 1 solar panels to 1,000 times more solar radiation than they’d get from sunlight. Several existing offices will be converted to rooms where panels will face high heat, freezing cold, corrosive materials and other chal- lenges. The S-DLE (pronounced “sun-dial”) Center also plans to erect several outdoor poles that would be used to expose solar panels to natural sunlight, intensified with mirrors. The poles are financed by two state grants totaling $3.8 mil- lion, as well as matching contribu- tions from CWBU and several com- panies with Ohio ties — isn’t just to figure out how much punishment various types of solar panels can take, Dr. French said. The effort also is meant to help Dr. French and other researchers at CWBU determine why various panels fail and use their material science expertise to fix them.

“Now we can make a material that lasts longer,” he said.

Another goal of the center is to help companies develop long-term reliability standards for solar panels, said Dr. French, who is dean of the college of engineering and director of the Microelectronics Center.

Two local companies — solar electronics maker eQED LLC of Mayfield Village and Replex Plastics of Northbrook, Ill. — have received University of Akron patent number 26 million through the S-DLE Center to develop materials for solar panels at a plant in Cleveland. The company will take this year’s first lot of the S-DLE Center for testing to determine the reflectivity of materials, which can signify chemical bonds they contain. If certain types of materials that tend to break down all the panels, for instance, researchers at CWBU could figure out how to strengthen the material by making it without that bond.

The first piece of the S-DLE Center fell into place in January, when the university and Replex Plastics of Mount Vernon, Ohio, received a $900,000 grant from Ohio’s Third Frontier economic development program. They secured the money to prove that Replex’s ultraviolet light-absorbing mirror, which will be attached to each solar panel and con- tinue direct current to alternating cur- rent, should be more reliable and less expensive than conventional mirrors that serve multiple panels.

Projects such as the S-DLE Center are needed if the region is to play a role in renewable energy electronics.

Dr. Fujita said that solar radiation has “the potential to change the way people live and think about their lives.” He said.

Northbrook, Ill. Quest for long life

Though some panels that use traditional materials have proven their longevity over the years, panels using new technologies are under development. Dr. French said. For companies selling those technologies, that means you give customers warranties guaran- Teering them for 20 or 25 years, he said.

Hirokazu Fujita, CEO of eQED, wanted to work with the center to make sure his company’s new microin- verters are durable. The startup — a subsidiary of Quality Electrody- namics LLC, a fast-growing company that sells coils for MRI machines — developed the small microinverters as replacements for inverters used on solar farms. Dr. Fujita said he expects the microinverters, which attach to each solar panel and convert direct current to alternating cur- rent, should be more reliable and less expensive than conventional inverters that serve multiple panels.

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