

From Research to RECOVERY

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THE FLORIDA HIGH TECH CORRIDOR COUNCIL'S GRANT PROGRAM PAIRS LEADING UNIVERSITIES WITH PRIVATE COMPANIES TO ACCELERATE R&D, AND HELPS SPUR ECONOMIC RECOVERY IN THE PROCESS.

Orlando's bdDisplays is working with UCF researcher Dr. Sabine Freisem to develop head-mounted displays for first responders. This image shows what someone wearing one would see.



According to a study by Innovation Insight Inc., applied-research partnerships with universities are playing a substantial role in economic recovery as companies large and small report increased jobs, new product lines, research funding and profitable contracts as the result of their working relationships with the Florida High Tech Corridor Council's (FHTCC) three partner institutions.

The Council's Matching Grants Research Program (MGRP) has been recognized nationally and internationally for its impact on competitiveness by providing matching dollars to fund applied research on the campuses of the University of Central Florida (UCF), the University of South Florida (USF) and the University of Florida (UF). Faculty members and graduate student researchers work side-by-side with industry researchers to solve problems that can facilitate progress and lead to commercialization.

"This program has created a ripple effect of job creation and company start-ups and attracted revenue that comprises a significant portion of our state's economy," says Randy Berridge, president of FHTCC. "It's staggering to think what our economy would look like were it not for this investment in applied-research partnerships."

Innovation Insight's comprehensive study concluded that the FHTCC's state-funded research program has leveraged \$54 million over 14 years to

➤➤ Like the proverbial stone tossed into a pond, Florida's focus on job creation and rebuilding its innovation economy is being aided by the ripple effect of a unique applied-research program that for nearly 15 years has brought high-tech industry into partnerships with three of the nation's largest research universities, their faculty and their graduate students.

create a direct and indirect economic impact of \$1.3 billion in the 23 counties that make up the Corridor, in addition to generating an equivalent impact of 3,276 jobs downstream.

Through new research partnerships with UCF, Metro Orlando-based businesses are continuing to contribute to the program's ripple effect. One company that has relied on the MGRP for the past five years to complete much-needed R&D of its products is bdDisplays, a start-up company that develops head-mounted displays for use by first responders, such as firemen and police officers.

Used to create immersive virtual-reality environments, head-mounted displays are being used in more and more applications. With advances in their sophistication, the power required to run them typically increases, as well. So for the past two years, bdDisplays CEO, Dr. Michael Bass, has worked with a UCF researcher, Dr. Sabine Freisem of CREOL, the Center for Research and Education in Optics and Lasers. Together, they are

developing a semiconductor chip that enables head-mounted displays to run off of a small, but efficient, battery.

High-efficiency, low-voltage micro-displays have the potential to improve both quality of life and workplace productivity as the displays get smaller and lighter, and Freisem believes that she is on the right track with her chip research. In toning down the power needed, she may just rev up the simulation industry in Florida, which is already an important part of the High Tech Corridor's industry base.

In her pursuit of a more efficient semiconductor, Freisem is experimenting with gallium arsenide (GaAs) and other elements from groups III and V on the Periodic Table, instead of the traditional silicon.

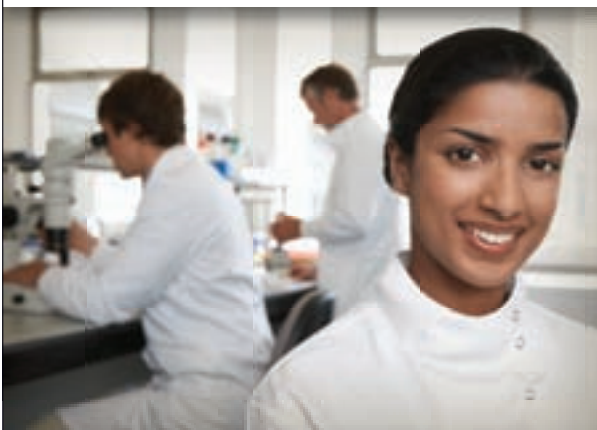
"We are developing a new kind of semiconductor chip for these displays," explains Freisem. "In making the chips we grow the crystals, first designing how the crystals have to be grown. There seem to be a lot of advantages of the III-V. We've had interesting results so far."

Freisem has been working on the project since fall 2008, and as of now there is funding in place to keep it moving forward until September 2011.

Freisem's work is now targeted toward commercialization with the hope of having a marketable product in hand. "It's a more involved process than getting a single device working," she says. "It's a challenge to work with a company whose actual goal is not the research itself — it is really in the end to have something that works — that you potentially could sell."

Unlike some research projects that evolve over time into different areas, this one pretty much has stayed true to its original intent. But the unintended consequences could turn out to be just as important. Only time will tell, but fewer batteries could end up being discarded, and there is potential for these microchips to be used in other applications because of their low power drain.

For more information on FHTCC's MGRP, visit www.floridahightech.com/research.php.



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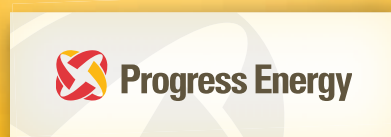


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