

BY KERRY GIBSON

Payback Time

Technology transfer efforts paying off big time

IF THE GOAL OF SCIENTIFIC RESEARCH IS to find answers to basic questions, then one of its primary objectives is to take what's learned in the laboratory and pass that knowledge along to business and industry so mankind can benefit from those scientific advances. This transfer of technology is what helps keep the United States competitive in the global marketplace.

One yardstick for measuring success in transferring technology from the lab to the private sector is the amount of revenue generated by the licensing of patented technologies. And against that standard, Ames Laboratory has achieved whopping success over the past few years.

Ames Laboratory has led the Department of Energy's national lab complex – 17 laboratories – in the amount of earned licensing income for the past two years. That's quite an achievement when you compare Ames Lab's annual budget of \$30 million with second-place Brookhaven National Laboratory's annual budget of \$445 million. In fact, because those revenues exceeded 5 percent of Ames Lab's total annual budget, the Lab has had to turn a portion of that excess back to the U.S. Treasury Department.

"So far as we know, that's the first time that's ever happened," says Deb Covey, Ames Laboratory associate director over Sponsored Research Administration. "We wrote checks for \$921,000 in 2006 and \$1.03 million this past year."

Covey points out that the earned licensing income is revenue based upon use of the invention, usually a percentage of sales or units sold from products that are actually in the marketplace. This differs from total licensing income that includes earned licensing income, but may also include license issue fees, maintenance fees, milestone payments, paid-up license fees, minimum annual royalties and similar fees.

Since record keeping began in 1980, Ames Lab researchers have been issued a total of 212 patents for 151 different technologies. The most successful to date has been the lead-free solder formula developed by se-

nior metallurgist Iver Anderson's research group. The silver-tin-copper solder is licensed to more than 60 companies worldwide and has generated almost \$19 million in royalties. Various iterations of Ed Yeung's R&D 100 award-winning capillary electrophoresis technology have also brought in substantial royalties over the years.

"It doesn't happen overnight," Covey says. "Lead-free solder was originally patented in 1996, and it's only been in the past few years that we've seen the major benefits of that work. We appreciate that we've been lucky and that the timing was right to meet a real need."

At least part of the success of the Lab's licensing efforts lies with the Iowa State University Research Foundation, which protects intellectual property developed on campus, including discoveries at Ames Lab. While other larger DOE national laboratories typically have patent attorneys on staff, ISURF files patent applications, licenses intellectual property and monitors for patent infringement for Ames Lab.

If and when license royalties flow back to ISU, ISURF recoups the cost of patenting the invention and takes an administrative fee off the top to cover other expenses. One third of the remaining money goes to the inventors, while Ames Lab and ISU receive 51 and 49 percent of the balance respectively; up to the 5 percent of the Lab's budget.

"We're restricted on how we can spend that money," Covey says. "It has to be used for science, education or tech transfer, and it's primarily for new science." She adds that seed funding for collaborative research is one way the Lab has made a concerted effort to encourage development of new ideas that may need a proof of concept in order to pursue DOE or other funding.

"It's great that we're able to capitalize on our successes by funding new research efforts," Covey says. "It also demonstrates the importance of protecting the discoveries our researchers make because you never know what might be the next big success."

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