

## 2004 NTR Program



*Kerley Award winner  
Jeannette B. Benavides  
(Code 562) and Center  
Director Al Diaz.*

“We are gathered here today because the New Technology Reports—or NTRs—you submitted last year play a big part in Goddard achieving its spin-in goals as well as the traditional spin-out goals that still exist.”

These words were part of Center Director **Al Diaz**’s opening remarks to the over 100 attendees of the 2004 New Technology Reporting Program. The annual program, which was held April 16th at the Newton White Mansion in Mitchellville, honors the contributions to technology transfer by Goddard’s innovators.

In addition to Mr. Diaz’s remarks concerning the new goals for technology spin-out and spin-in, the program also featured a success story. The Hierarchical Segmentation (HSEG) Software, developed by **James C. Tilton** (Code 935), is being used by multiple NASA programs as well as in industry and academia, making it a spin-in and spin-out success. Bartron Medical Imaging used HSEG and other NASA technology to manufacture Med-Seg, a device for analyzing medical X-rays. Med-Seg will be used by researchers at the School of Dental Medicine at the University of Connecticut. (More information on this success story will appear in an upcoming issue of *Goddard Tech Transfer News*.)

### **Kerley Award**

Mr. Diaz also presented the Kerley Award to **Jeannette B. Benavides** (Code 562) for her outstanding efforts to help transfer her manufacturing process for single-walled carbon nanotubes (see the Summer 2003 issue). James Kerley committed 32 years of his career to Goddard and was a champion of tech transfer for the good of mankind. When Dr. Kerley died in 1994, the Office of Technology Transfer (OTT) created this award to honor his memory. Dr. Benavides is the 10th recipient of the Kerley Award.

### **Patent Awards**

Patent counsel Bryan Geurts presented \$500 to \$1,000 awards to the following inventors for patents issued in 2003:

- Charles Campbell (Code 595)
- Norden Huang (Code 971)
- John Kolasinski (Code 565)
- James Poland, Jr. (former NASA employee)
- David Quinn (Code 595)
- Theodore Swanson (Code 540)
- John Vranish (Code 544)
- Michael Wade (Code 547) ■

## Northeast RTTC Hosts Spin-In Workshops



*Goddard presenters at the Joint Venture Opportunity Workshop in Rochester (r to l): OTT Chief Nona Cheeks, Michael Ryschkewitsch (Code 500), Jeannette Benavides (Code 562), Peter Shirron (Code 552), and David Content (Code 551).*

The goals for space exploration in the coming years are formidable. Working cooperatively with industry and academia—through joint research and technology spin-in—is a key means for NASA to achieve these goals.

To facilitate such arrangements, NASA’s Northeast Regional Technology Transfer Center (RTTC), the Center for Technology Commercialization, organized two Joint Venture Opportunity Workshops. At these workshops, Goddard’s senior technologists provided an overview of the Center’s many programs and technology needs. After these presentations, attendees could meet individually with Goddard staff to explore possible partnering opportunities.

The first meeting was held in Boston in February. Presenters included  
*(continued on page 4)*

## Step 4: Partnership/License Agreement

- Once an interested partner/licensee has proposed a plan for spinning out a Goddard technology (see the
- Winter 2003/2004 issue of *Goddard Tech Transfer News* for more information about seeking a partner/licensee),
- the Office of Technology Transfer (OTT) begins to negotiate the final agreement.

Note: This series is examining the steps associated with spin-out of Goddard innovations to non-NASA applications. Future issues of *Goddard Tech Transfer News* will explore the technology spin-in process.

### *How does OTT conduct negotiations?*

Because the final agreement must be acceptable to and benefit both NASA and the partner, OTT takes a collaborative rather than adversarial approach to negotiations. When the interested partner/licensee submits a project or transfer plan, the OTT considers the proposed terms carefully. If the terms are not acceptable, OTT will not simply shut down the process. Rather, we will communicate as openly as is prudent with the interested party, explaining NASA's position and seeking a middle ground.

### *As the inventor, am I involved in negotiations?*

Because negotiations can be time-consuming, OTT tries to call upon the inventor as little as possible. However, in some cases, the terms being negotiated relate to technical assistance. Obviously, in these instances, OTT will need to contact you about your availability and willingness to participate.

### *What kinds of agreements does Goddard use to spin-out technology?*

The legal agreement used depends upon the individual situation. A Space Act Agreement (SAA) is used when a technology is not easily transferred to the non-NASA application and joint development work is needed, while a license can be used when a transfer is more straightforward. Within these two categories, the following agreements might be used:

- **Nonreimbursable SAA**—NASA and the partner both contribute resources and/or technology; research must be relevant to a NASA mission or program. Data/Results usually are shared between the two parties.
- **Reimbursable SAA**—Partner uses NASA resources and agrees to reimburse NASA for the use of its facilities, personnel, and equipment; research should be relevant to NASA.
- **Exclusive patent license**—The right to be the only organization (other than the U.S. government) allowed to manufacture or use NASA technology.
- **Partially exclusive patent license**—Exclusive rights are limited to a particular application area, geographic region, or other stipulation.
- **Nonexclusive patent license**—The right to be one of multiple partners allowed to manufacture or use NASA technology.

*(continued on page 4)*

### *researcher profile: .....*

## Peter J. Shirron

Code 552 • 15 years at NASA

• **Education:** B.S. and M.S., physics, The Catholic Univ. of America; Ph.D., low-tempera-

ture physics, Univ. of Illinois at Urbana-Champaign

• **Born:** Washington, DC

### *What invention are you currently working to transfer?*

OTT is helping me transfer several technologies related to an adiabatic demagnetization refrigerator (ADR). Michael DiPirro and I have developed a continuous-duty, multistage ADR for cooling detectors and telescopes to 50 milliKelvin or lower.

### *What has OTT done to introduce your invention to new users?*

OTT provided supplemental funding for our ADR development through the Commercial Technology Development Program (see Summer 2003 issue), which allowed us to build a prototype ADR. OTT also provided opportunities for locating commercial partners through SAMPE conferences (2003 and 2004) and a workshop in Rochester (see page 1).

### *What do you see as the future for your technology?*

There is a growing need for this technology within NASA, given that most new astronomy sensors operate at a very low temperature. But an even greater need for low-temperature coolers

is in laboratory settings. Two companies are interested in marketing this technology, which might eventually expand the use of low-temperature detectors into such areas as nondestructive evaluation, medical diagnostics, and even quantum computing.

### *Any advice for your colleagues?*

Always check with OTT about the intellectual property (IP) protection status of your technology before presenting it in papers or at conferences. If IP protection is lost, companies tend to be less interested in the technology and it's harder for Goddard and NASA—and the public—to benefit. Furthermore, spin-out arrangements often lead to spin-in partnerships that can benefit your research later. ■



## OTT Takes Four Goddard Innovators to NDES



As part of February’s National Manufacturing Week, the National Design and Engineering Show hosted its Technology Transfer Conference and Expo. Instituted last year to bring together research labs and companies looking for technical solutions, the expo is an ideal place for OTT to seek partners/licensees for Goddard technologies and spin-in partnerships. The Goddard technologies featured at this year’s expo were the following:

- **David Whiteman’s** (Code 912) laser power stabilization feedback system
- **Michael Hinchey’s** (Code 581) specifications and code derivation technology
- **John Vranish’s** (Code 544) gear bearings, rapid prototypes, and steel bearings
- **Michael Beamesderfer’s** (Code 541) parylene thickness sensor

In addition, **J. Victor Lebacqz**, NASA’s Associate Administrator for Aerospace Technology, spoke on the R&D issues confronting the nation in aeronautics and space in the 21st century. He also gave an overview of NASA’s Innovative Technology Transfer Partnerships Program.

As a result of all of these efforts, OTT staff made contact with 11 companies interested in partnering with Goddard. Follow-up efforts are underway. ■

## Making Spin-In Connections in Utica, New York

On April 6, Goddard OTT staff joined about 100 other attendees at “Making Connections: Federal Funding, Partnership and Technology Opportunities.” Sponsored by the State University of New York’s Institute of Technology (SUNY-IT), the forum was designed to connect NASA with business and academia in Central New York.

Events such as this—and the RTTC workshops described on page 1—achieve two goals. First, they teach companies and universities about working with NASA in an effort to build regional economic development. Second, they help identify new sources for technology and expertise that complement the skills available at Goddard (i.e., spin-in partnerships).

At the SUNY-IT event, OTT’s Chief **Nona Cheeks** and researcher **John Kolasinski** (Code 565) participated in a panel discussion of NASA’s future technology needs. The discussion proved valuable for the participants and the presenters, as many attendees stayed on to participate in one-on-one discussions with the NASA representatives. Between this event and the two spin-in workshops (page 1), the OTT has identified 20 companies with technologies of interest to Goddard. ■



*Researcher **John Kolasinski** (Code 565) describes NASA’s technology needs to executives from small, medium, and large technology firms as well as university researchers.*

## Wallops Joins in Lower Shore Technology Showcase

On March 23, researchers from Wallops Flight Facility and Goddard OTT staff joined nearly 175 attendees at “Technology Applications for the Business Community: Biological, Environmental and Space Science,” a technology partnering showcase held at Salisbury University. Organized by the Maryland Technology Development Corp., the event sought to bring commercially viable technologies in front of the regional business community for possible marketplace applications. Other labs participating in the event included USDA’s Beltsville Agricultural Research Center and three universities.

Wallops researchers focused on the facilities and flight platforms available to organizations outside of NASA. As explained by Keith Koehler of the Wallops Public Affairs Office in an article published in *Delmarva Business Weekly*, “Our balloons, rockets, launch range, airport, calibration facilities may not be commercially available locally, or in most cases nationally, for testing instruments with aerospace applications.” Therefore, having access to these nearby facilities gives eastern shore businesses a head start.

Researchers from Wallops with presentations or posters included **Wayne Powell** (Code 502), **Philip Ward** (Code 598), and **Bruce Underwood** (Code 802) as well as contractors **Tom Connolly**, **Glenn Maxfield**, **Charles Lankford**, and **Harold Cherrix**. Goddard’s OTT staff also were on hand to establish contact with potential partners and licensees. In fact, three tech transfer leads are being pursued. ■

# Tech Transfer Metrics – January 1 to March 31, 2004

## New technologies reported: 33

New technologies were reported by the following civil servants, contractors, and universities:

### Civil Servants

#### Code 400

Jonathan Bryson

#### Code 500

Ellen Herring  
Bradford Parker  
Eddie Akpan  
Steven Cagiano  
Brian Ottens  
Diane Pugel  
Eliezer Ahronovich  
Charles Clagett  
Milton Davis  
Noble Jones  
Russell Roder

#### Code 600

Donald Jennings  
Steven Curtis

#### Code 900

Christopher Lynnes  
Bruce Vollmer  
Stephen Berrick  
David Lary  
Robert Abell  
Gregory Lyzenga  
Jay Parker

### Contractors

ADVR  
Booz Allen and Hamilton  
CSA Engineering

Center for Technology Commercialization  
CSC  
Hughes Information Tech Corp.  
MEMX  
Nanosciences Corp.  
Radiation Monitoring Devices  
SGT  
Science Systems Applications  
Space Photonics  
Star Cryoelectronics

### Universities

Carnegie Mellon University  
Johns Hopkins University  
University of Maryland–Baltimore  
County  
University of Michigan–Ann Arbor  
University of Montana

### Licenses/Partnerships: 2

- Method of Coating a Substrate with a Rapidly Solidified Metal, **Huai-Pu Chu** and **Charles Staugaitis** (former NASA employees), licensed to Titus Group of Spokane, Washington

- High Rate Digital Demodulator, **Parminder Ghuman** (Code 564), **Gerald Grebowsky** (former NASA employee), **Andrew Gray** (SGT), and **Meera Srinivasan** (California Institute of Technology), licensed to Kongsberg Spacetec of Tromso, Norway

### Patent Applications Filed: 4

- Deriving Formal Specifications and Code from Scenarios, **Mike Hinchey** (Code 581), **James Rash** (Code 588), and **Christopher Rouff** (Code 500)
- Spectral-Ratio Biospheric Lidar, **Robert Knox** (Code 923)
- Adaptation of Ethernet Network Technology for Low-Power, Radiation Tolerant Spaceborne Use, **Evan Webb** (Code 561), **Scott Edfors** (Orbital Sciences Corp.), and **Michael Lin** (Code 561)
- Half-Tooth Gear Bearings, **John Vranish** (Code 544)

### Provisional Patents Filed: 6 ■

### Spin-In Workshops (continued from page 1)

**Ron Polidan** (Goddard's former chief technologist), **Neil Dennehy** (Code 890), **Michael Johnson** (Code 560), **Dan Powell** (Code 542), **Juan Roman** (Code 600), **Peter Shu** (Code 553), **Ted Swanson** (Code 540), and **Stephen Talabac** (Code 586).

In April, another workshop was held in Rochester, New York. Presenters at this workshop included **Jeannette Benavides** (Code 562), **David Content**

(Code 551), **John Kolasinski** (Code 565), **Michael Ryschkewitsch** (Code 500), **Peter Shirron** (Code 552), and **Carl Stahle** (Code 553).

“As a networking opportunity, meetings like this are very important,” explained Ms. Cheeks. “Of the 87 attendees at the Rochester event, we had one-on-one meetings with 28 individuals. That’s a great response rate.” ■

### Step 4: Partnership/License Agreement (continued from page 2)

#### Is Goddard interested in only agreements with a high financial gain?

Absolutely not. Although a favorable financial agreement benefits NASA, the Agency recognizes that improvements in health care, quality of life, and scientific advancement are important benefits that can result from tech transfer. NASA’s goal—and consequently OTT’s mission—is to find agreements that yield new applications with recognizable benefits. ■

*Next issue – Step 5: Technology Application and Success Promotion*

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