

HQ Names a New Director for Technology Transfer



Benjamin Neumann,
Director, Innovative
Technology Transfer
Partnerships Division,
Office of Aerospace
Technology.

In July, technology transfer at NASA took on a new director. And with a new director comes a new direction. **Benjamin Neumann** previously served as Manager for Communications and Outreach for the Aerospace Technology Enterprise at HQ. In this position, he led the development of NASA's Aeronautics Blueprint, a vision for the second century of aviation. Now he is developing a new blueprint for technology transfer.

Newly renamed the Innovative Technology Transfer Partnerships Division (ITTP), technology transfer is focusing on spin-in as well as spin-out. "The goal of ITTP is to form partner-

ships with industry and academia to develop new technology that supports Enterprise programs," explained Mr. Neumann. "We also will commercialize and transfer NASA technology to U.S. industry and enhance NASA technology and commercial objectives."

Industry and academia serve as valuable resources for NASA. Often their technologies can be adapted to address space mission needs, allowing NASA to achieve its goals faster and more efficiently. At the same time, space program technologies can play an important role in the U.S. economy.

"Although the structure of our economy has changed dramatically since NASA's founding in 1958, the value and applicability of our R&D activities to the economy have remained constant," said Mr. Neumann. "Technology developed for aerospace applications often can be beneficially applied in other industries. Whether it is NASA working in tandem with private industry or the commercial sector turning to NASA for technological assistance, aerospace technologies have found their way into new products and services."

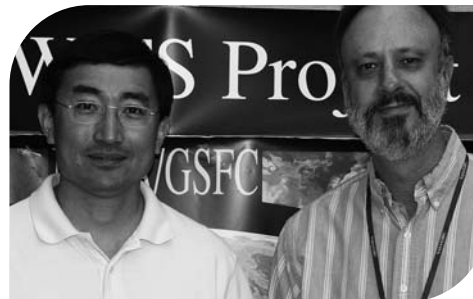
You, NASA's researchers, have an important role to play in ITTP's mission. Whether turning to industry for new solutions or introducing space innovations to the marketplace, we look forward to working with you as NASA moves ahead with this new vision for technology transfer. ■

Goddard Researchers Receive Software of Year Award

Civil servants **Charles McClain** (Code 970) and **Gene Feldman** (Code 902) and contractors **Mark Ruebens** (HCI) and **Xiao-Long Wang**, **Gary Fu**, **Karen Baith**, and **Bryan Franz** (SAIC) were co-winners of the 2003 NASA Software of the Year Award for their SeaWiFS Data Analysis System (SeaDAS).

SeaWiFS is the Sea-viewing Wide Field-of-view Sensor (<http://seawifs.gsfc.nasa.gov/SEAWIFS.html>), an Earth-orbiting ocean color sensor gathering quantitative data on global ocean bio-optical properties to monitor various types and quantities of marine phytoplankton (microscopic marine plants).

"Since the beginning of the SeaWiFS project in 1991,



Xiao-Long Wang (SAIC) and **Mark Ruebens** (HCI), developers of the award-winning SeaDAS software package.

a primary objective has been to provide the Earth science community with rapid and easy access to the sensor's data as well as the tools to work with the data," said **Charles McClain**, who heads the joint SeaWiFS-SIMBIOS Project Office. "The SeaDAS software package provides essential processing, display, analysis, and quality control functions for the data users."

Feedback from the research community on SeaDAS's performance has been extremely favorable. It has been accepted as the standard ocean color satellite analysis system by the international

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Step 2: Technology Assessment

- After you submit your innovation through the New Technology Report (NTR)—see the Summer 2003 issue of *Goddard Tech Transfer News* for more about NTR submission—it is entered into Goddard’s technology inventory and considered for assessment.

What is a technology assessment?

A technology assessment is a detailed, in-depth examination of the potential success for transfer of a NASA innovation into a non-NASA application, known as spin-out. Perhaps an optics technology can be applied to medical imaging. Or a data processing system to urban planning. Or a mechanical innovation to home appliances or cars. The assessor conducts research to evaluate these options carefully and objectively. Also evaluated are the opportunities to spin-back the technology, applying the commercial product to NASA’s mission.

Assessments also are used to evaluate the transfer of a non-NASA technology for the space program, known as a spin-in. Future issues of *Goddard Tech Transfer News* will explore the technology spin-in process.

Do all Goddard innovations receive an assessment?

Unfortunately, the cost of detailed information gathering prohibits the assessment of every technology. Therefore, every innovation is screened according to preliminary criteria, including (1) Can the intellectual property be protected (i.e., patent or copyright) or have the details been publicly disclosed? (2) Is the innovation revolutionary? (3) Are there obvious applications for it? (4) What is the stage of development? According to the results of these and other criteria, the innovation may be selected for assessment.

Do I participate in the assessment?

Yes! We depend on inventors to provide us with valuable information that starts us in the assessment process. We will interview you about the key information on your NTR:

- What are your technology’s unique advantages and shortcomings?
- Do you foresee any non-NASA applications for it?
- Do you know of any other near- or long-term NASA applications?
- What issues might need to be addressed before it could be used in these applications?

Including complete information on your NTR will help.

What other information is gathered?

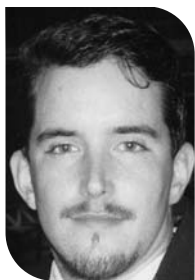
Your information is supplemented by the expertise of Office staff as well as research into the literature and interviews with technical experts, university professors and researchers, industry analysts and consultants, potential licensees and end users, and others. These resources provide data and feedback on the characteristics of the potential market(s) where the technology might be used, the technologies already available, patentability issues, and more. Office staff analyze this information to determine the assessment outcome.

What are the possible outcomes from the assessment?

The innovation might be recommended for patenting and the next step of the technology transfer process (Seeking a Partner/Licensee). The assessment also might show that it

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researcher profile:



W. Dan Powell

Code 542 • 2 years at NASA
• **Education:** B.S., mechanical engineering, Oregon State University, 2000 • **Born:** Carmel, California

What invention are you currently working to transfer?

I’m working on several inventions, but they are not quite ready for transfer yet. Instead, the Office has been supporting promotion of GSFC nano-technology research in general.

What has the Office of Technology Transfer done to introduce nano-technology to new users?

The Office offered me an opportunity to present on several of my current efforts at the *NASA Tech Briefs* Nanotech 2003 conference on October 23. And they interviewed me for an article submitted to *Nanotech Briefs*. They also are working on a short video that I am part of about NASA’s nano-technology research.

What do you see as the future for nanotechnology?

We’re working on an improved thermal interface for the next Hubble servicing mission. If it works, it will be the first useful application of nanotechnology in space and should open a lot of doors for new application development. Because most nanotechnology devices and system architectures are inherently low mass, low power, high precision, and potentially multifunctional, it promises to be ubiquitous and remake entire industries and our world. ■

Building Business Relationships at NASA Conference

On August 25–26, Chief of the Office of Technology Transfer **Nona Cheeks** participated in a presentation at the 12th Annual NASA Technology & Business Conference in Albany, New York. Attendees of this small business networking, training, and education conference met with NASA, contractors, and other government agencies to discuss possible business opportunities. In her presentation, Ms. Cheeks outlined a step-by-step process for the public and private sectors to participate in NASA’s technology transfer activities through licensing or joint R&D opportunities. Events such as this help to build the partnerships needed for successful technology transfer—whether a spin-out of NASA-developed technology or a spin-in of outside technology to help the NASA mission. ■



Goddard Outreach to the Public

The local television station NBC4 hosted the Digital Edge Expo in Washington, D.C. September 13–14, and representatives from throughout Goddard attended to stimulate awareness in the commercial consumer regarding the necessity and benefits of using technology. As members of Goddard’s Public Affairs Office, Office of Technology Transfer, and Space Science and Earth Science Directorates showed off the latest and greatest in NASA’s digital technology, they facilitated dialogue and networking with professionals, students, and general consumers. “By educating the public on digital technology and helping

them to recognize NASA as a leading player in digital R&D, we hope to make the public aware of the value of NASA not only in its space-related goals but also on Earth,” said **Nona Cheeks**, Chief of the Office of Technology Transfer. ■

SAM Tech Transfer Success Video

The Office of Technology Transfer is proud to announce the release of a short video—*Revolutionizing Physical Therapy with NASA Technology*—documenting the successful transfer of a technology developed by the late **James Kerley**, **Wayne Eklund** (Code 540), and **Allen Crane** (Swales). Not only is this video distributed on CD-ROM, you can also see it on Goddard’s technology transfer Web site. Look under the “Highlighted Technologies” section of the main page: <http://techtransfer.gsfc.nasa.gov>. ■

Show Off Your Innovations at Next Year’s NDES

The 2004 National Design and Engineering Show (NDES) will be held February 23–26 in Chicago, Illinois. And you might attend to gain exposure for your innovations. Goddard researchers or technologies that were featured at past NDES conferences include:

- **Jeannette Benavides** (Code 562) for her carbon nanotube manufacturing method
- **Doug Leviton** (Code 551) for his encoder technologies
- **John Vranish** (Code 544) for his gear bearings, flexible wedge, capaciflector, and other technologies

NDES is a great opportunity to let industry learn more about NASA innovations and begin to explore new applications. If you think your technology would be of interest to NDES attendees, please contact the Office of Technology Transfer by **November 15**. More information about NDES is at the National Manufacturing Week Web site (<http://www.manufacturingweek.com>). ■

New technologies reported: 37

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

Civil Servants

Michael Beamesderfer (Code 541)
Thomas Bialas (Code 560)
Gregory Boegner (Code 596)
Clifford Brambora (Code 564)
Jason Budinoff (Code 544)
Karen Calvert (Code 584)
Victor Chambers (Code 551)
Yury Flom (Code 541)
Samuel Floyd (Code 691)
Edward Gaddy (Code 563)
Parminder Ghuman (Code 564)
Gregory S. Greer (Code 584)
Thomas Grubb (Code 588)
Jeffrey Hosler (Code 588)
Connie Houchens (Code 584)
Cameron Jerry (Code 588)
Daniel Kaufman (Code 542)
David Mangus (Code 595)
Andrew Maynard (Code 596)
Timothy McClanahan (Code 694)
Ronald Mink (Code 551)
James Morrissey (Code 591)
Raymond Ohl (Code 551)
Sharon Orsborne (Code 584)
Samuel Placanica (Code 591)
Nelson Rubin (Code 596)
Arthur Ruitberg (Code 500)
Wesley Sweetser (Code 307)
Jacob Trombka (Code 691)
John Vranish (Code 544)
Luke Winternitz (Code 596)

Contractors

Aguila Technologies Inc.
Allied Signal Technical Services
Center Remote Sensing Inc.

Computer Sciences Corp.
Diffraction International Ltd.
The Hammers Company
Honeywell Technical Services Inc.
Nanosystems Inc.
Pacific Gyre
Pioneer Astronautics
Princeton Satellite Systems
QSS Group Inc.
Science Applciation International Corp.
SGT, Inc.
Sigma Technologies International Inc.
Siwave Inc.
Soreq NRC
Swales & Associates Inc.

Universities

California Institute of Technology
Carnegie Mellon University
Johns Hopkins University
Ohio State University
State University of New Jersey–Rutgers
University of Arkansas–Fayetteville
University of California–San Diego
University of Connecticut
University of Wisconsin–Madison

Issued Patents: 4

- U.S. Patent #6,584,874: 3-D Sprag Ratcheting Tool, **Michael Wade** and **James Poland, Jr.** (Code 751)
- U.S. Patent #6,593,879: Using the GPS System to Determine Attitude Rates Using Doppler Effects, **Charles Campbell** (Code 572)
- U.S. Patent #6,594,582: GPS Compound Eye Attitude and Navigation Sensor and Method, **David Quinn** (Code 572)
- U.S. Patent #6,626,792: Gear Bearings, **John Vranish** (Code 544)

Patent Applications Filed: 2

- Minimum Cycle Slip Airborne Differential Carrier Phase GPS Antenna, **Charles Wright** (Code 900)
- Normalized Amplitude Hilbert Transform (NAHT): A New Algorithm For Computing Instantaneous Frequency, **Norden Huang** (Code 971)

Provisional Patents Filed: 5 ■

Software of the Year Award *(continued from page 1)*

research community (over 500 user sites in nearly 50 countries) and other space agencies. The software also has been used by many commercial entities, including ORBIMAGE, which is developing commercial products from SeaWiFS data, and SeaSpace and Integral System, Inc., which use SeaDAS as part of their direct-broadcast ground stations.

To apply for this and other NASA

Space Act Awards, innovators must complete a New Technology Report (NTR) via form 1679 or the online eNTRe system (<http://entre.nasa.gov>) and a Space Act Award Application via NF 1329, which can downloaded from the NASA Inventions and Contributions Board Web site (<http://icb.nasa.gov>). Submit both forms to the Office of Technology Transfer (Code 504). ■

Step 2: Tech Assessment *(continued from page 2)*

should be promoted by publishing articles in *NASA Tech Briefs* and other relevant journals. Also, during this process, your innovation will be considered for several prestigious awards. If a technology is still in the “idea phase,” the Office might wait for further development or look into ways to provide additional project funding. Spin-back and/or spin-in options as well as potential partners for joint R&D might be identified. In some cases, the assessment might recommend not pursuing further transfer efforts. ■

Next issue – Step 3: Seeking a Partner/Licensee

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