Virginia SpaceLink

VIRGINIA SPACE GRANT CONSORTIUM

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VIRGINIA'S CENTER FOR INNOVATIVE TECHNOLOGY

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New Community Technology Center Opens Doors in Hampton Roads

December 12, 2000 was a great day for residents of Newport News, Va. and the Hampton Roads area. A ribbon cutting ceremony was held at the Pearl Bailey Library, located in the southeast community of Newport News, to open a new community technology center (CTC). Remarks were made by Mayor Joe Frank, Libraries Director Izabela Cieszynski, and Virginia Space Grant Consortium Director Mary Sandy to an eager audience of approximately 75 local residents, business community members and city officials. The audience included a group of first-graders from Marshall Elementary School in Newport News, who were honored to be the first users of the new CTC computers.

The opening of the Pearl Bailey Community Technology Center was made possible through a grant from the U.S. Department of Education's Community Technology Program, which was awarded to the Virginia Space Grant Consortium, Newport News Public Library System and Zel Technologies/ KIDTECH. The three-year award was announced in Spring 2000 for a total of $488,328. The grant enables the three partner organizations to implement the *Peninsula Community Technology Centers Program*, which consists of expanding the current KIDTECH program in the Zel Technologies, Inc. (ZelTech) corporate headquarters in Downtown Hampton and the establishment of the new Pearl Bailey Community Technology Center.

(Continued on page 2)

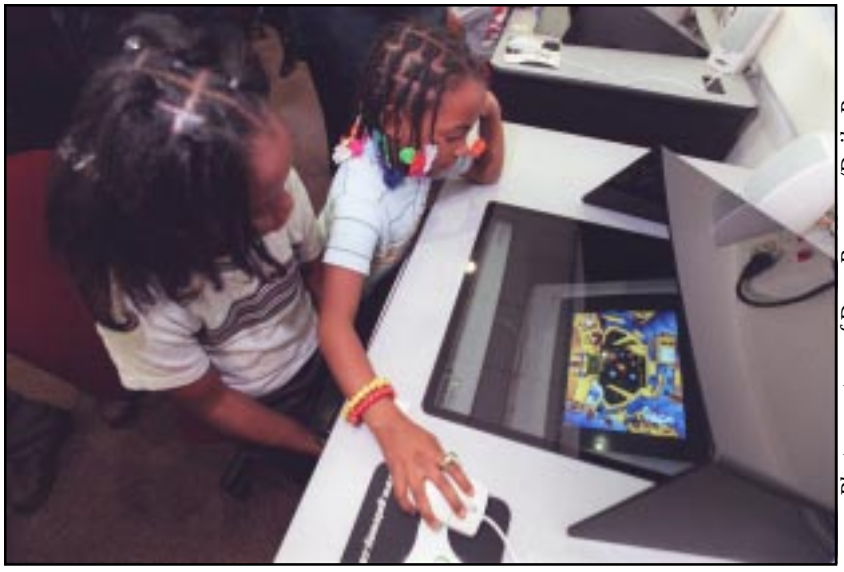

Photo courtesy of Dave Bowman/Daily Press.

Two elementary aged students sit together while operating a learning program on one of the new computers at the Pearl Bailey Library's new Community Technology Center in Newport News, Va.

(Continued from page 1)

The *Peninsula Community Technology Centers Program* expects to significantly enhance the four-year-old KIDTECH program, created by ZelTech, a professional services company specializing in information technology. The KIDTECH program currently consists of ten networked computers serving 180 children and senior citizens, and focuses on after school and summer computer access for kindergarten through fifth grade students. The program also provides basic computer training for senior citizens, instructs them on the components of the machine, accessing and using the Internet, email, word processing, etc.

The funding will enable the KIDTECH program to employ a full-time lab instructor and will allow the Center to target the underemployed adult population in Hampton, Va. to provide adult education classes aimed at acquiring practical skills, including computer basics, as well as resume and cover letter writing, sending email, and using the Internet to conduct job searches. An adult literacy component and a program to help adult learners achieve their General Equivalency Diploma) will also be added to the KIDTECH curriculum and will also be implemented at the Pearl Bailey Community Technology Center.

The Newport News Public Library System implemented the Pearl Bailey CTC, which serves an urban, economically diverse area consisting of over 27,000 people in Newport News. The new community technology center was modeled after the KIDTECH program and similarly equipped with networked computers and peripheral hardware, Internet access, educational software, as well as basic word processing and spreadsheet programs. Summer and afterschool programs will be implemented for neighborhood children, and adult education classes will be offered.

The Newport News Library System will be able to draw on the experience and success of the KIDTECH model in developingthe Pearl Bailey CTC. Similarly, the experiences of the Newport News Library System in both adult literacy and children's programming will be beneficial to the KIDTECH CTC.

The Virginia Space Grant Consortium is providing program oversight, coordination and specialized Internet and computer training through its cadre of technology trainers. The Consortium will also draw on the educational resources of its member institutions and assist with programs on science, math and technology subjects. Dr. Robert Hannafin, Assistant Professor of Instructional Technology, College of William and Mary, will provide program evaluation services. The *Peninsula Community Technology Centers Program* is guided by a steering committee comprised of partners and community representatives.

For further information, contact VSGC's Development and Program Specialist, Sharon Campbell Waters, at (757) 865-0726 or scwaters@odu.edu.

VIRGINIA SPACE GRANT CONSORTIUM

In 1988, Congress enacted the NASA National Space Grant College and Fellowship Program (also know as Space Grant). The Virginia Space Grant Consortium (VSGC) received its designation from NASA in 1989.

The VSGC is a coalition of five Virginia colleges and universities, NASA, state educational agencies, Virginia's Center for Innovative Technology, and other organizations with a strong interest in math, science, engineering and technology education and the preparation of a qualified high technology workforce. The VSGC acts as an umbrella organization, coordinating and developing educational and research efforts for Virginia and the nation.

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VSGC Awarded New NASA Pilot: NASA Undergraduate Student Research Program

In October 2000, the National Aeronautics and Space Administration issued a program announcement for a new student opportunity, the *NASA Undergraduate Student Research Program* (NASA–USRP). The pilot is offering up to 100 undergraduates across the United States research experiences at NASA Centers during Summer and Fall 2001.

NASA awarded a grant to the Virginia Space Grant Consortium to provide national coordination for the *NASA–USRP* pilot. The program is sponsored by the NASA Headquarters Education Division, Office of Human Resources and Education and is managed for NASA by James J. Gorman, Jr., Senior Advisor to the NASA Director of Education.

The purpose of the *NASA–USRP* is three-fold:

- To attract undergraduate students from the widest array of backgrounds, who are fully representative of America's racial, ethnic and cultural diversity and to provide them with hands-on, challenging research experiences that stimulate continued student interest in the fields/disciplines aligned with NASA's research and development mission.
- To build a national program bridge—from existing NASA K–12 Education Program activities to NASA Higher Education Program options—that encourages and facilitates student interest in future professional opportunities with NASA and its partner organizations. Such opportunities might include NASA career employment; temporary assignments; undergraduate and graduate co-op appointments; Space Grant scholarships and fellowships; or contractor positions.
- To extend and strengthen NASA's commitment to educational excellence and university research; and to highlight the critical need to increase the nation's undergraduate and graduate science, engineering, mathematics, and technology skill base.

The NASA–USRP pilot targets rising junior and senior undergraduates enrolled full-time in an accredited U.S. college or university and studying in the fields of engineering, mathematics, computer science or physical/life sciences. The *NASA–USRP* consists of a 10–15 week paid research experience at one of nine participating NASA Centers under the supervision of a NASA technical mentor.

Nationwide NASA has nine Field Centers plus the contractor-operated Jet Propulsion Laboratory. NASA's overall program, as outlined in the agency's Strategic Plan is comprised of five Strategic Enterprises. Each enterprise covers a major area of the agency's research and development efforts.

NASA's Strategic Enterprises

Aerospace Technology—The mission of this Enterprise is to pioneer the identification, development, verification, transfer, application and commercialization of high-payoff aeronautics and space transportation technologies.

Biological and Physical Research—The mission of this Enterprise is to conduct basic and applied research to support human exploration of space and to take advantage of the space environment as a laboratory for scientific, technological, and commercial research.

Earth Science—The mission of the Earth Science Enterprise is to use the unique vantage point of space to provide information about Earth's environment that is obtainable in no other way. In concert with research and industry partners, the Enterprise is developing the understanding needed to support the complex environmental policy and economic investment decisions that lie ahead.

Human Exploration and Development of Space—The mission of this Enterprise is to open the space frontier by exploring, using and enabling the development of space and to expand the human experience into the far reaches of space.

Space Science—The mission of the Space Science Enterprise is to solve mysteries of the universe, explore the solar system, discover planets around other stars, search for life beyond Earth from origins to destiny, chart the evolution of the universe and understand its galaxies, stars, planets, and life.

Research and development programs, projects, and activities that support NASA's five enterprises are conducted at each of NASA's Field Centers and at the Jet Propulsion Laboratory. For the *NASA–USRP* pilot, students will have the opportunity to participate in research experiences at the following NASA facilities:

Summer 2001:
- Ames Research Center, Mountain View, California
- Glenn Research Center, Cleveland, Ohio
- Jet Propulsion Laboratory, Pasadena, California
- Kennedy Space Center, Florida
- Marshall Space Flight Center, Huntsville, Alabama
- Stennis Space Center, Mississippi

Fall 2001:
- Goddard Space Flight Center, Greenbelt, Maryland
- Johnson Space Center, Houston, Texas
- Langley Research Center, Hampon, Virginia

For further information, visit the NASA–USRP website at http://education.nasa.gov/usrp or contact VSGC's Assistant Director, Heidi Davis, at hbdavis@odu.edu.

Student Opportunities

High Technology Industry Internships

DEADLINE: February 20, 2001

With the rapid growth of high technology jobs in Virginia, it is essential that industry have a skilled workforce. To meet this need, a partnership offering internships during Summer 2001 is being formed between 30 Virginia advanced materials and electronics companies, Virginia's Center for Innovative Technology (CIT), the Virginia Space Grant Consortium and Virginia universities.

Virginia's Center for Innovative Technology

The *2001 Industry Internships for Virginia's Undergraduates* program offers a minimum of 40 competitive awards providing paid internship experiences with premier Virginia technology companies. The VSGC is managing the internship program for the second year on behalf of CIT with funding through a *CIT Competitive Technology Infrastructure Award* and a *CIT Information Technology Industry Development Award*.

The program is open to rising junior and senior undergraduate students majoring in one of 20 eligible science and engineering fields of study. Students must be enrolled full-time in a Virginia institution of higher education. The program is specifically targeting students attending: *College of William and Mary, George Mason University, Hampton University, James Madison University, Old Dominion University, University of Virginia, Virginia Commonwealth University, Virginia Military Institute* and *Virginia Tech*.

Participating Virginia Companies

America Online
Carlisle Motion Control Industries, Inc.
Catalyst Communications Technologies, Inc.
CPFilms, Inc.
Ericsson Home Communications
ERNI Components, Inc.
GE Fanuc
Howmet Castings
Innovative Wireless Technologies, Inc.
ITT Night Vision
Ixthos, Inc.
Lear Winchester
M/A-COM
Materials Modification, Inc.
McDermott Technology, Inc.
Mimic, Inc.
Oceana Sensor Technologies, Inc.
Plastics One, Inc.
Pressure Systems, Inc.
Sartomer Company
Seaward International
Sonix, Inc.
Southeastern Container, Inc.
TRAX
Viasystems
Virginia Semiconductor, Inc.
Vishay Vitramon

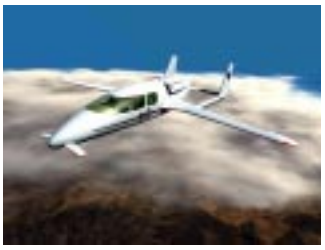
Program information, including a downloadable application, is posted at http://www.vsgc.odu.edu.

National General Aviation Design Competition Reminder

Now in its seventh year, the National General Aviation Design Competition seeks to increase the involvement of the academic community in the revitalization of the U.S. general aviation industry while providing real-world design and development experiences for students. The Virginia Space Grant Consortium manages the competition on behalf of NASA, the Federal Aviation Administration and the Air Force Research Laboratory who sponsor the competition.

The competition calls for individuals or teams of undergraduate and graduate students from accredited U.S. engineering schools to participate in a major national effort to rebuild the U.S. general aviation sector. For the purpose of the contest, general aviation aircraft are defined as fixed wing, single-engine (turbine or piston), single-pilot aircraft for 2–6 passengers. The competition seeks to raise student awareness of the importance of general aviation by having students address design challenges for a small aircraft transportation system.

The ***Innovative Design*** competition invites individual students or teams to submit paper design projects of systems, subsystems, components or complete airframes that address general aviation revitalization goals. All design packages will be reviewed by a panel of industry, university and government experts and written feedback will be provided to the participating individuals/teams.



Guidelines for the 2000–2001 competition are available at http://www.vsgc.odu.edu. Letters of intent will be accepted after the January 31 deadline. The final design must be submitted on or before May 7, 2001.

Educator Opportunities

NASA Educational Workshops

DEADLINE: February 20, 2001

NASA Educational Workshops (NEW) model the integration of the national standards in mathematics, science and technology. Educators will be provided with an opportunity to observe NASA's state-of-the-art research and development through direct interaction with NASA scientists, engineers, technicians and educational specialists at a NASA Field Center.

Selected participants spend two weeks during Summer 2001 at participating NASA Centers. Travel, housing and meal expenses are provided by NASA. Graduate credit is available. The two-week workshops occur during mid-June through mid-August. Participants will be notified by April 15th of their NASA Center assignment and workshop dates.

The workshops are sponsored and implemented by NASA in partnership with the National Science Teachers Association (NSTA). Activities include: visiting research and applied science facilities; examining topics related to Earth Science, Aerospace Technology, Human Exploration and Development of Space and Space Science; practicing a "hands-on/minds-on" instructional approach integrating science, mathematics, and technology; and much more.

Complete information is available at http://education.nasa.gov/NEW.

AEL Equity Conference 2001

Access for All:
Math, Science, and Technology

The Virginia Space Grant Consortium invites you to attend *Equity Conference 2001*, which it is co-sponsoring with the Eisenhower Regional Consortium for Math and Science Education and the Region IV Comprehensive Center at AEL. The conference will be held March 21–23, 2001 at the Wyndam Roanoke Airport in Roanoke, Va. *Equity Conference 2001* will address access for all students to math, science and technology. Teachers, administrators, guidance counselors, higher education personnel, preservice teachers and graduate students, as well as anyone interested in math, science, and technology education are encouraged to attend.

Conference participants will receive information and resources that address access for all students; have the opportunity to create networks and partnerships to promote access for all students; and learn strategies in math, science and technology ensuring that all students have access. Register today—the pre-registration rate is only $100 per person through February 16. To arrange for lodging, contact the Wyndham Roanoke Airport directly at (540) 563-9300.

For more information on Equity Conference 2001, please call AEL's Terry Foster or Angie Anderson at (800) 624-9120 or visit the conference's homepage at http://www.ael.org/eisen/equity01.htm.

Out of this World URLs

★ http://www.vasc.org/erc/

This site, for the NASA Langley Educator Resource Center (ERC), offers information, materials and training for teachers who want to use NASA programs, technologies and discoveries in their curriculum. It spells out by subject the print, video and Internet resources available, and includes schedules and contact information. There are also useful links to related sites. The NASA Langley Educator Resource Center, which serves a five-state region, is located inside the Virginia Air & Space Center in Hampton, Va.

★ http://whyfiles.larc.nasa.gov/

The NASA "Why?" Files program consists of videos and accompanying website, which has a treehouse for students to access and a separate teacher/parent area for program information and support materials. Students climb in the window of the treehouse to find challenging on-line investigations, hands-on activities that can be done at home. The teacher/parent area has information about Problem-Based Learning, on-line activities, downloadable Educator Guides and many other helpful resources.

2000–2001 Teacher Education and Community College Scholars

The Virginia Space Grant Consortium awarded a total of $27,000 in Teacher Education and Community College Scholarship awards for the 2000–2001 academic year. The awards include nine Teacher Education Scholarships at three universities and 12 Community College Scholarships to students at nine Virginia Community Colleges.

The one-year Teacher Education Scholarships are $1,000 awards made to students enrolled in a program of study that would qualify them to teach in a pre-college setting. This award encourages students to become teachers of mathematics, technology education, and the sciences, especially math, space and environmental science. The one-year Community College Scholarships are $1,500 awards made to students enrolled in associate degree programs leading to careers in high technology fields, particularly those with aerospace relevance. Both awards, which are determined by a committee of Consortium representatives, are based on an evaluation of the applicant's degree program, plan of study, past scholastic achievement and academic potential.

Since receiving Space Grant designation from NASA in 1989, the Virginia Space Grant Consortium has awarded over $2.0 million in funding to Virginia students, including $53,000 in Teacher Education Scholarships and $68,000 in Community College Scholarships. To date, 85% of the Teacher Education Scholarship's and 35% of the Community College Scholarships have been awarded to females and/or minority members traditionally underrepresented in the science and engineering fields. Funding for these awards is provided by NASA and the Commonwealth of Virginia.

Applications for the 2001–2002 competition are posted at http://www.vsgc.odu.edu and are due February 12, 2001.

Teacher Education Scholarship Awardees

Jessica Carlton, Virginia Beach, Va., is a senior at Hampton University majoring in Biology.

Elizabeth Jaeckle, Chester, Va., is a freshman at University of Virginia and plans to major in Mathematics.

Laurie Phillips, Blacksburg, Va., is a senior at Virginia Tech majoring in Mathematics.

Amanda Prettyman, Roanoke, Va., is a freshman at Virginia Tech and plans to major in Early Childhood Education.

Sarah Puckette, Lynchburg, Va., is a freshman at Viginia Tech and plans to major in Elementary Education.

Leslie Shankman, Herndon, Va., is a freshman at Virginia Tech and plans to major in Mathematics.

McKenzie Slaughter, Carrollton, Tx., is a sophomore at Hampton University majoring in Mathematics.

Paul Steiner, Montclair, Va., is a sophomore at Virginia Tech majoring in Technology Education.

Selma Woldemichael, Arlington, Va., is a freshman at Virginia Tech and plans to major in Elementary Education.

Community College Scholarship Awardees

Susan Abbott, Madison Heights, Va., is studying Science at Central Virginia Community College. She plans to complete a four-year degree in Education and teach middle school science.

Emily Joyner, Suffolk, Va., is studying Science at Paul D. Camp Community College. She plans to attend Old Dominion University to obtain a degree in Exercise Physiology.

Matthew Bass, Courtland, Va., is studying Information Systems Technology at Paul D. Camp Community College. He plans to pursue a bachelor's in Computer Science at Old Dominion University.

Kevin Koo, Spotsylvania, Va., is studying Science at Northern Virginia Community College. He plans to earn a graduate degree in Chemical Engineering.

Michael D. Colley, Council, Va., is majoring in Electrical/Electronics Engineering at Southwest Virginia Community College. He intends to complete a Bachelor of Science.

Jimmy Morrison, Martinsville, Va., is majoring in Information Systems Technology at Patrick Henry Community College. He intends to pursue a bachelor's in Aerospace Engineering.

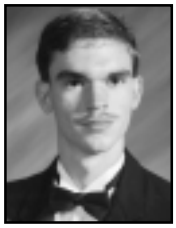
Elizabeth Filer, Virginia Beach, Va., is a Computer Science major at Thomas Nelson Community College. She plans to complete a bachelor's in Computer Science at Christopher Newport University.

Paula Polcyn, West Point, Va., is studing General Engineering Technology at Rappahannock Community College. She plans to complete a four-year degree.

Isaac Hagy, Cedar Bluff, Va., is majoring in Electrical/Electronics Engineering at Southwest Virginia Community College. He plans to pursue a Bachelor of Science.

Robin Walker, Virginia Beach, Va., is majoring in Engineering at Tidewater Community College. She plans to pursue a bachelor's in Mechanical Engineering at Old Dominion University.

John Horne, Raven, Va., is an Engineering Technology major at Southwest Virginia Community College. He plans to pursue a Bachelor's in Engineering.



Jaime Zuchel, Painter, Va., is an Engineering Technology major at Eastern Shore Community College. She plans to continue studies in Electronics.

Happenings

Student Research Conference March 30, 2001

The third annual Student Research Conference will be held on March 30, 2001 at NASA Langley Research Center in Hampton, Va. VSGC Scholars and Fellows who received research awards in 2000–2001, as well as university faculty, NASA Langley scientists and researchers, will participate in this day-long conference.

The Student Research Conference showcases the research efforts of Virginia Space Grant Scholars and Fellows. Oral and poster presentations will be made by the undergraduate and graduate students featured in the Fall 2000 issue of *Spacelink*.

Visit http://www.vsgc.odu.edu for more information.

Science Museum of Virginia *Richmond—http://www.smv.org, (804) 367-6552, (800) 659-1727.*

⇒ **Invasion of the Dinosaurs**, *February 24–June 3, 2001*—See nine stomping, roaring dinosaurs come to life in this new exhibit. Unearth fossils in the Dino Dig Box; create colorful dinosaur rubbings; grasp the controls of the T-Rex Robot.

⇒ **Sky Watch**, *February 16 & March 16, 2001 at 8:00 pm*—Join members of the Richmond Astonomical Society on the front lawn as they share their telescopes for a look at the night sky *(weather permitting)*. This event is free and open to the public.

Virginia Air & Space Center *Hampton—http://www.vasc.org, (757) 727-0900, (800) 296-0800.*

⇒ **Star Trek: Federation Science,** *January 27–April 30, 2001*—Beam up to the Enterprise when it docks at the VASC! This return engagement utlizes the popular and fascinating phenomena of *Star Trek*, including familiar characters from the *Star Trek: The Next Generation* crew, to promote science and technology literacy among people of all ages.

⇒ **International Public Science Day,** *March 21, 2001*—Join the VASC for a full day of educational and fun activities that celebrate science and technology in the new millennium.

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