National Aeronautics and Space Administration
Goddard Space Flight Center

# Inside Wallops

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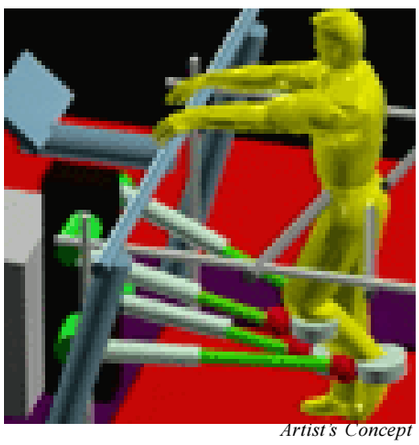
## *NASA Robotics May Soon Help Spinal Cord Patients Take First Steps*

NASA engineers and University of California, Los Angeles (UCLA), neurophysiologists are creating a robot-like device that could help rehabilitate thousands of Americans with spinal cord injuries.



*Artist's Concept*

"We are developing a prototype robotic stepper device that when complete will be used as part of rehabilitation that can potentially help some people now wheelchair-bound take their first steps," said Jim Weiss, program manager for collaborative neural repair at NASA's Jet Propulsion Laboratory (JPL). "This system can do the work of four therapists and help monitor a patient's progress in a controlled manner."

The device, still in the development phase, will look like a treadmill with robotic arms and will be fitted with a harness to support the patient's weight. The arms resemble knee braces that attach to the patient's leg, guiding the legs properly on the moving treadmill.

The robotic stepper device is one of several projects in the Neural Repair Program at the UCLA Brain Research Institute and JPL.

UCLA neurologists now believe that by using the robotic stepper device in rehabilitation, some patients functionally confined to wheelchairs may be able to learn to walk again, and those with limited movement could improve their level of walking.

NASA and UCLA researchers emphasize the robotic stepper is still in development and is not yet ready for use in rehabilitation.

"We see tremendous potential for rehabilitation that uses this form of therapy," said Dr. Reggie Edgerton, professor in the departments of physiological science and neurobiology at UCLA.

"Some rehabilitation centers around the world are starting programs that will allow therapists to train individuals affected with spinal injuries, stroke and perhaps other neuromotor disorders to improve their mobility and stepping capacity," Edgerton said. "This robotic device could help therapists in those rehabilitation efforts."

Current rehabilitation therapies are labor-intensive and require up to four therapists. Unlike therapists, who only sense and observe a patient's progress, the robotic device takes precise measurements of the person's force, speed, acceleration and resistance, counting each step the patient takes.

These precise measurements help therapists monitor the day-to-day progress of their patients and provide valuable information on the effectiveness of the therapy. These measurements will be used by a control system that can assist the robotic stepper device as needed.

JPL robotic engineers have worked alongside therapists to develop the device, which has highly sensitive sensors that collect up to 24 different data readings of the patient's activity. The device, connected to a computer, displays the information on the screen for the therapist to monitor.

According to Weiss, the same device could also someday be useful to astronauts and help them walk safely after prolonged periods in space, such as extended missions on the International Space Station.

JPL and UCLA are actively pursuing efforts to commercialize the robotic system. JPL technically supported UCLA in filing a patent application in August.

"Many technologies developed at NASA for space exploration have tremendous medical applications. We can provide practical solutions based on our engineering experience," said Dr. Antal Bejczy, senior research scientist and lead engineer on the robotic stepper device at JPL.

## *Counting Down to December 17, 2003*

Quick - without looking it up - what's significant about December 17, 2003?

If your immediate answer isn't that it's the 100th anniversary of powered flight as first demonstrated by the Wright Brothers, hopefully that will change. Just check out the following website: http: www.centennialofflight.com

The U.S. Centennial of Flight Commission has launched this Web site to get the word out on the history and future of powered flight and keep track of events planned to celebrate the upcoming anniversary.

***First Flight Dec. 17, 1903***

The site also features a section dedicated to educational activities and programs related to the past, present and future of flight.

One of the special features of the site is the calendar. It will track all events related to the centennial of flight, the history of aviation and aviation in general. Visitors to the site can propose events for inclusion via the "submit an event" button.

The U.S. Centennial of Flight Commission was set up by Congress to provide recommendations and advice to the President, Congress and Federal agencies on the most effective ways to encourage and promote national and international commemoration of the centennial of powered flight.

Its six members represent the First Flight Centennial Foundation of North Carolina; Inventing Flight: Dayton 2003 of Ohio; aeronautical societies, foundations and organizations outside of Ohio and North Carolina, represented by the President of the Experimental Aircraft Association; the Smithsonian Institution's National Air and Space Museum; the Federal Aviation Administration; and the National Aeronautics and Space Administration.

***The next edition of "Inside Wallops" will be Jan. 8, 2001.***

## *Partnering Awards*

The First Annual Wallops Flight Facility Management Operations Partnering Awards were distributed to the following employees during the Code 200 Holiday Party on December 7.

The Most Valuable Partner award for the individuals who best exemplify the spirit of partnership, are a model of collaboration with their coworkers and foster positive cultural change was given to Bonnie Carroll, Environmental Office and Todd Winfield, Surface Combat Systems Center.

The New Vision Partnership Award for individuals who produce imaginative and innovative new concepts, products or services was awarded to Bob Reynolds, Facilities Management Branch; Karon Eichelberger, QSS; and Wayne Johnson, Computer Sciences Corporation.

Jim Milliner, Cortez III, and Ron Simko, FKW, received the Code 200 Teaming Award for demonstrating support for intra-Directorate services leading to improved overall quality of operations services to customers.

The Excellence Through Diversity Award for individuals who are proactive in promoting the values of a diverse Wallops customer base was presented to Pat Pruitt, Management Operations Directorate.

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## *From FED week*
### *Dec. 13 Issue*

### *C Fund Moves into Negative Territory*

Another losing month in November for the Thrift Savings Plan common stock (C) fund has pushed the fund into negative territory in the latest 12-month accounting of returns, with a loss during that period of 4.25 percent. In one of its biggest monthly losses ever, the C fund dropped 7.87 percent in November, its eighth losing month out of the last 12.

The bond (F) fund gained 1.65 percent and the government securities (G) fund gained 0.48 percent in November for 12-month returns of 9.13 and 6.48 percent, respectively. Meanwhile, money in the G fund is being invested at a 5.625 percent annual rate this year.

Sympathy is extended
to the family and friends of
**Louis T. Birch, Sr.**
who died Dec. 1
at Hartley Hall Nursing Home,
Pocomoke, Md.

Birch retired in 1978 as head of the Procurement Branch.

## *Mike Conger Qualifies for World Invitational*

Local sportsman, Hall of Famer and GHG employee, Mike Conger finished second in the Grandmaster's Division at the 2000 Southern California Disc Golf Championships held recently in Los Angeles, CA.

Some 120 competitors from seven states vied for titles in Open, Masters, Grandmasters, Senior Grandmasters, Legends and Women competitions. Conger's second place finish gave him enough points to qualify for the 2001 PDGA World Invitational to be held in August in the Twin Cities, MN.

## *Wallops Weather Delay Notifications*

In event of inclement weather, the Public Affairs Office staff is notified no later than 5:15 a.m. of any changes in work schedules.We then try to place change notices in the following order by 6 a.m.

1. Wallops recorded numbers
2. Media

**Wallops Recorded Numbers**

Operations scheduleLine
1-800-521-3415and 757 824-1176
Wallops Info Line: 757 824-2050
Individual phone mail boxes

**Media**

| | |
|---|---|
| WESR | 1330 AM and 103.3 FM |
| WKHW | 106.5 FM |
| WKHI | 107.5 FM |
| WVES | 99.3 FM |
| WOLC | 102.5 FM |
| WLVW | 960 AM |
| WQHQ | 104.7 FM |
| WBOC-TV | Channel 16 |
| WMDT-TV | Channel 47 |

*Season's Greetings*
*From*
*the Wallops*
*Public Affairs*
*Office*

*Betty, Keith,*
*Keva and Michael*

## *Aerobics Club News*

It's the time of year to avoid building up those holiday pounds. The Wallops Aerobics Club has announced a new six-week session starting on Dec.18, 2000.

The Aerobics Club offers one-hour evening classes on Monday, Wednesday and Friday as well as half-hour daily lunchtime classes in the gymnasium.

All Wallops employees are invited to come and join in! For more information call Annette Conger at x2596 or check out the Wallops Aerobics Club web page at: http://wwr.wff.nasa.gov/~ccsoft/wallops_aerobics/wac.html

NEW!!! The Aerobics Club is offering a beginner yoga class at lunchtime on Fridays.

For more information, contact Lisa Brittingham at x2292.

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### *WEMA and MAC News*

A Wallops Exchange and Morale Associaton (WEMA) directory listing WEMA board members, WEMA Morale Activities Ccmmittee (MAC) representatives, WEMA Business Office employees, contacts for MAC clubs and other MAC sponsored programs can now be found on the WEMA web site at: http://wwr.wff.nasa.gov/mac/mac.html

WEMA and MAC are Wallops employees working to provide services for Wallops employees. See what your committee is doing for you! Keep up with what's happening!

Know your representatives!

***A Christmas Sale is now in progress at the WEMA Exchange Store.***

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