

## News Releases

### Northrop Grumman Foundation Accepting Teacher Applications For 2008 Weightless Flights Of Discovery

LOS ANGELES, May 5, 2008 (PRIME NEWSWIRE) -- The Northrop Grumman (NYSE:NOC) Foundation is accepting teacher applications for the 2008 Weightless Flights of Discovery program, an initiative that places teachers on micro- and zero-gravity flights to test Newton's Laws of Motion and energize students in the formative middle-school years.

Middle-school math and science teachers are welcome to apply for the program at [www.northropgrumman.com/teachers](http://www.northropgrumman.com/teachers). The Foundation has selected four locations for this year's flights: San Jose, California (Sept. 18); Florida's Space Coast (Sept. 30); Atlanta (Oct. 7); and the Chicago area (Oct. 21). A maximum of 60 teachers in each of the cities will participate. The Foundation chose these locations because of the relatively close connections Northrop Grumman has with these areas, in terms of employee concentration and community involvement.

"The Weightless Flights of Discovery program has enjoyed enthusiastic participation in cities across the nation, and we are very excited about bringing it to four new locations that are of particular importance to Northrop Grumman," said Sandra Evers-Manly, president of the Northrop Grumman Foundation.

For the third consecutive year, Northrop Grumman is partnering with Zero-G Corporation to offer the Weightless Flights of Discovery program, one of several initiatives the Northrop Grumman Foundation sponsors in support of promoting education and student interest in the science, technology, engineering and mathematics fields. Selected teachers will participate in a full-day orientation program several weeks before their flights. Teachers then will work with their students to develop experiments to be conducted in environments simulating lunar gravity, Martian gravity and weightlessness. Following the two-to-three-hour flight, each teacher will share his or her experiences back in the classroom.

The program targets middle-school math and science teachers primarily because the United States is experiencing a shortage of college graduates in these disciplines, a development that bodes ill for the nation's industries that depend on talented scientists and mathematicians. Because studies have indicated most children make the decision to pursue math and science education and careers during middle-school, Northrop Grumman developed the Weightless Flights of Discovery to engage teachers, key influencers in the lives of students during these crucial years.

"It's a privilege to offer teachers a chance to participate in what may be a once-in-a-lifetime event -- it's certainly a life-changing event -- where they can test Newton's Laws of Motion while having a great time," said Evers-Manly. "This is a very different way to thank these teachers for all they do, and to help them bring some unique lessons into their classrooms."

To learn more about the Northrop Grumman Foundation Weightless Flights of Discovery, please visit [www.northropgrumman.com/teachers](http://www.northropgrumman.com/teachers).

Northrop Grumman Corporation is a global defense and technology company whose 122,000 employees provide innovative systems, products, and solutions in information and services, electronics, aerospace and shipbuilding to government and commercial customers worldwide.

CONTACT: Tom Henson  
Northrop Grumman Corporation  
(310) 201-3458  
[thomas.henson@ngc.com](mailto:thomas.henson@ngc.com)

## Community Relations



[Northrop Grumman](#) > [Community Relations](#) > Northrop Grumman Foundation's Weightless Flights of Discovery

## Northrop Grumman Foundation's Weightless Flights Of Discovery

### Giving Wings To Science Education



Across the country, there is a growing concern regarding the number of students entering science, technology, engineering and mathematic careers. We know that one way to reverse that trend is to make science and math fascinating and applicable for the students. And, in order to engage the students, we have to have educators who are excited about what they do and can bring unique learning opportunities into their classrooms.

In order to address this concern, the Northrop Grumman Foundation has teamed with the Zero Gravity Corporation to develop the Weightless Flights of Discovery program. The Northrop Grumman Foundation Weightless Flights of Discovery program is designed to inspire students to pursue science and technical careers by inspiring their teachers first. Practicing classroom middle school teachers and future middle school teachers have the opportunity to participate in

hands-on science workshops and perform and experiment in a parabolic or "zero-gravity" aircraft flight

### Weightless Flights of Discovery Program:

- ▶ [WFOD Home](#)
- ▶ [2008 Application Form](#)
- ▶ [2008 Flight Schedule](#)
- ▶ [How a Zero Gravity Flight Works](#)
- ▶ [Teacher Testimonials](#)
- ▶ [WFOD Video \(.wmv\)](#)
- ▶ [WFOD In the News](#)
- ▶ [About Northrop Grumman Foundation](#)
- ▶ [WFOD Contact Info](#)

that creates temporary weightlessness comparable to what humans would experience during space travel to the Moon or Mars. It also mimics how astronauts train for space flights.

“Every engineer, every scientist, every technically trained person in our nation can look back and identify a teacher who played a significant role in his or her decision to pursue a technical career,” explains Sandra Evers-Manly, president of the Northrop Grumman Foundation. “The Weightless Flights of Discovery program is all about giving teachers the tools and experiences they need to show their students that math and science are not only entertaining, but can also be the basis for a fascinating career.”

## History Of The Weightless Flights Of Discovery

In his 2006 State of the Union address, President George Bush announced the creation of the American Competitiveness Initiative (ACI) to stimulate American innovation and to help ensure that today's students would develop the technological skills required to maintain U.S. global leadership in science, technology and engineering.

In support of that educational call to action, Northrop Grumman launched the Weightless Flights of Discovery program, a unique, nationwide teacher professional development program designed to inspire today's students to pursue degrees in scientific and technical fields.

The Weightless Flights of Discovery program was created and developed by Northrop Grumman, in cooperation with the Zero Gravity Corporation (ZERO-G), Ft. Lauderdale, Fla., a company that specializes in bringing the exhilaration of weightlessness to the general public.

By focusing the Weightless Flights program on teachers rather than students, Northrop Grumman was able to achieve maximum “reach” for the lessons of its microgravity “high school,” delivering inspiration to an estimated 10,000 elementary, middle school and high school students in the first year alone.

## Floating — A New Approach To Education



math, science, technology or engineering curricula at their home schools.

The Weightless Flights of Discovery program includes teacher workshops and parabolic flights in locations throughout the country. To see our 2008 workshop and flight schedule, [click here](#).

In each workshop, teachers learn about the physics of weightlessness and what to expect on the zero gravity flight. They also design microgravity experiments that applied science, technology, engineering or mathematics principles to human activities in a weightless environment. During the weightless flight one or two weeks later, they conduct their experiments under the watchful eye of a video camera. Teachers then use their videotaped flight experience and the results of the experiments to help shape

**The Weightless Flights of Discovery program is all about giving teachers the tools and experiences they need to show their students that math and science are not only entertaining but can also be**

### Quick Links:

[Home](#)  
[Corporate Governance](#)  
[Latest SEC Filings](#)  
[Community Relations](#) ▶  
[Analysis Center](#)  
[Business-to-Business](#) ▶  
[Sandra Evers-Manly](#)  
[Our Business Areas](#) ▶  
Northrop Grumman Foundation

## Transforming America's Classrooms



Teachers who participated in previous Weightless Flights of Discovery have reported through letters and e-mails that the fun and exhilaration they experienced during the program have begun showing up in their classrooms. The flights have helped them demonstrate to students that math and science are not only “cool,” but also “fun,” a language understood by students worldwide. And the teachers now see themselves in a new light, as a critical cog in a process that will help restore U.S. leadership in scientific and technical excellence.

[BACK TO TOP](#)

## 2008 Flight Schedule



### **San Jose, California**

Workshop – August 2

Flight – September 18

### **Space Coast, Florida**

Workshop – August 14

Flight – September 30

### **Atlanta, Georgia**

Workshop – August 23

Flight – October 7

### **Chicago, Illinois**

Workshop – September 27

Flight – October 21

## How A Zero Gravity Flight Works



Zero gravity flights are performed using a specially modified aircraft, an FAA approved aircraft called G-Force One. The maneuvers are conducted in dedicated airspace 100 miles long by 10 miles wide. Specially trained pilots fly the aircraft in a series of maneuvers called

parabolas, or arcs, between the altitudes of 24,000 and 32,000 feet.

At the beginning of each parabola, the aircraft climbs at a 45-degree angle. At the “top” of the parabola, the aircraft is “pushed over” into a controlled descent that creates a temporary zero-gravity environment. The teacher flights include approximately 15 parabolas ranging from low-gravity environments typical of the moon (1/6th G) or Mars (1/3 G) to complete weightlessness. At the end of each “weightless” period, which lasts approximately 30 seconds, the aircraft is gradually pulled out of the descent, reestablishing a more normal gravity environment inside the plane.

[BACK TO TOP](#)

## Teachers Testimonials

---

“My experience with Northrop Grumman’s Weightless Flights of Discovery has reinvigorated my passion for learning. In only the brief two weeks that I have been back in the classroom, I can already feel this enthusiasm spilling over into my classrooms. ...The Weightless Flights might appear to some to be just a “wild ride” and a bunch of teachers having fun, but I see it as the rebirth of dedicated educators who recognize the importance of keeping themselves in the loop of global cognitive growth.”

### **Deb Houts**

Chemistry & Physics Teacher,  
Northeast High School, Oakland Park, FL

“The impact of the Weightless Flights of Discovery program on science classrooms is impossible to measure. But the impact on these teachers can be seen and felt in their expression and actions. They are clearly inspired.”

### **Linda Froschauer**

2006-2007 President  
National Science Teachers Association

“It’s our duty to give every child – male, female, white, African American, Native American –the opportunity to develop their knowledge and their imagination. That’s what the ACI is about, that’s what the Weightless Flights program is about, and that’s what we teachers are about.”

### **Allan Miller**

6th Grade Teacher  
Einstein Distinguished Educator Fellow

“I congratulate Northrop Grumman for inspiring youth to pursue careers in science and mathematics. The (Weightless Flights of Discovery) program enhances President Bush’s American Competitiveness Initiative and helps agencies like NASA ensure that we draw more youth into technical careers. I wish you every success for the future.”

### **Dave Weldon**

Member of Congress



## In The News

---

May 5, 2008 ► [Northrop Grumman Foundation Accepting Teacher Applications for 2008 Weightless Flights of Discovery](#)

Nov 19, 2007 ► [Photo Release -- Virginia Teachers Get a Lesson in Weightlessness as Part of Northrop Grumman Foundation Weightless Flights of Discovery](#)

Oct 8, 2007 ► [Photo Release -- High School Musical Star Corbin Bleu and Los Angeles-Area Teachers Take Part in Northrop Grumman Foundation Weightless Flights of Discovery](#)

Sep 13, 2007 ► [Photo Release -- Maryland Teachers Get a Lesson in Weightlessness Through Northrop Grumman Foundation Weightless Flights of Discovery](#)

Sep 10, 2007 ► [Photo Release -- New York, New Jersey and Pennsylvania Teachers Get a Lesson in Weightlessness as Part of Northrop Grumman Foundation Weightless Flights of Discovery](#)

Aug 31, 2007 ► [Photo Release -- New Orleans and Mississippi Teachers Get a Lesson in Weightlessness as Part of Northrop Grumman Foundation Weightless Flights of Discovery](#)

Aug 28, 2007 ► [Photo Release -- Texas Teachers Get a Lesson in Weightlessness as Part of Northrop Grumman Foundation Weightless Flights of Discovery](#)

Aug 28, 2007 ► [Science Teachers Take Flight in Zero-Gravity as Part of Northrop Grumman Foundation Weightless Flights of Discovery](#)

June 28, 2007 ► [Northrop Grumman Foundation Continues to Accept Applications for Weightless Flights of Discovery Program](#)

June 20, 2007 ► [Middle School Math and Science Teachers, College Education Majors Invited to Apply for Northrop Grumman Foundation Weightless Flights of Discovery Program](#)

June 15, 2007 ► [Northrop Grumman Foundation Sponsors National Weightless Flights of Discovery, Helping Spark Student Interest in the Scientific and Technical Fields](#)

## Contact Information

---

### Teachers and Educational Institutions

For teachers and education institutions looking for additional information, please contact [Cheryl Horn](#) at (310) 556-4992

### Media Contact

For media questions and requests, please contact [Tom Henson](#) at (310) 201-3458

## All Other Questions

For all other questions regarding this program, please contact the [Northrop Grumman Foundation](#) at (888) 478-5478

[BACK TO TOP](#)

Copyright © 2008 Northrop Grumman Corporation. All Rights Reserved

[Home](#) | [EU Policy](#) | [Contact Us](#) | [Site Map](#)