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# National Association of Rocketry Educator's Newsletter

April 2012

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Von Braun at 100

The aerospace and rocketry community celebrated the centennial anniversary of Werner von Braun's birth on March 23. He was a father of modern rocketry and one of the earliest champions of human space exploration.

Born in Germany, von Braun became a space buff in childhood, devouring the science fiction of Jules Verne and H.G. Wells. He left fiction behind after reading physicist Hermann Oberth's 1923 report, *By Rocket to Space*, and took up the study of calculus and trigonometry so he could master the physics of rocketry.

During World War II, von Braun led rocket research at the German propulsion laboratory in Peenemünde. Afterward, he and key members of his team came to the United States to advise the U.S. military on developing its own rocket program.

As the first director of the Marshall Space Flight Center, he spearheaded development of rockets for NASA's Mercury and Apollo space programs. He also tirelessly sought to fire the public's imagination and interest in spaceflight, delivering passionate, enthralling presentations in a variety of high-profile, public mediums -- from an

historic series of visionary articles about future space travel in Collier's Weekly to thrilling documentary features for Walt Disney. His crowning achievement came when the massive Saturn V rocket successfully launched the first human voyage to the moon and explorers would walk there on July 21, 1969.

Von Braun realized the importance of education and helped found the von Braun Astronomical Society and develop Space Camp and the Space and Rocket Center in Huntsville.

Von Braun died in 1977, the same year the first space shuttle began flight tests. That successful, 30-year program and the ongoing scientific study aboard the orbiting International Space Station carry on his remarkable legacy of ingenuity and invention. Read more about von Braun in the Marshall Center's History Office archives: <http://history.msfc.nasa.gov/vonbraun/index.html>

We honor von Braun's legacy by teaching rocketry and inspiring the next generation of space explorers. We wouldn't have gotten to the moon without him.

Aim high!

Vince Huegele
NAR Education Chairman



Hello New Subscribers

NAR has recently been at the NSTA National Conference in Indianapolis sharing a booth with the AIA to promote TARC and the services and resources of NAR.

Although our booth was decorated with all types of rockets, we don't sell rockets; we are the rocket people who use them. For over 52 years we have advocated sport rocketry itself as an incredible tool for teaching STEM and as the rocketeers in the NAR network we offer our help as mentors and advisors.

It was great to meet many of you at the conference and share the wonderful stories of your class projects. I'm happy to greet you in this newsletter and invite you to join us.

Vince Huegele
NAR Education Chairman



2012 Team America Rocketry Challenge (TARC)

The TARC <http://www.rocketcontest.org/> is the world's largest rocket contest, sponsored by the Aerospace Industries Association (AIA) and the National Association of Rocketry in partnership with AAPT, DoD, NASA, and AIA member companies.

AIA has just notified the [top 100 teams](#) in TARC 2012 and invited them to attend the TARC Finals May 11-13, 2012 at The Plains, VA. Selection was based on the best qualification flight score reports submitted by teams by the deadline of Monday, April 2. For teams that submitted more than one score, the lowest score was used. The cutoff score for selection for the Finals was 13.2. In addition, 20 alternate teams were selected, ranked in order of their qualification scores. If any of the top 100 teams are unable to commit to coming to the Finals by the commitment deadline then the alternates will be invited to replace them, in the order of their ranking. The score cutoff to be one of the 20 alternate teams

was 16.7.

This year we received 716 qualification flight reports from 409 teams, 60 percent of the teams that initially entered TARC 2012. The top 100 teams represent 29 states plus the US Virgin Islands.

Congratulations to the Finalists, and to all the teams that achieved a successful qualification flight. Building a complex rocket with two eggs as its payload and making it fly correctly is not easy, and any team that achieved this result was fully successful in meeting the educational goals of TARC.

NASA invites the top 20 teams to participate in their Student Launch Initiative, an advanced rocketry program (http://education.nasa.gov/edprograms/descriptions/Student_Launch_Initiative.html).

AIA member companies, such as Lockheed Martin and Raytheon have sponsored additional prizes such as scholarship money and a trip to an international air show.

TARC's website this year has a web page with resources and lesson plans for Educators (http://www.rocketcontest.org/resources_educators.cfm).



National Youth Trust Development: Rocketry in South Africa

Ever wonder how teachers in other countries integrate rocketry into their programs? Check out what Mr. Adrian Meyer, the Chief Executive Officer for the National Youth Development Trust, is accomplishing in South Africa.

Adrian writes, "Our Engineering Science programme has become popular rocketry and robotics are two of the very popular hobbies and favourite pastimes.

Our Rockets and Robots Programme has been designed to create and nurture interest in engineering science at school, from grade 1 to grade 13 level. Rocketry and robotics are two different disciplines, and each has an independent programme."

There are, however, many young scientists who would like to follow a career in engineering; consequently, they are working closely with international role-players and stakeholders to establish formal rocketry and robotics programs for South Africa. They have also been working in countries such as Ethiopia, Cameroon, Botswana and Kenya to establish similar model rocketry programs.

Take a look at their program at [National Youth Development Trust](#).



NAR Scholarship Program and Robert L. Cannon Award

Did you know that if you are NAR member between the ages of 17 and 22 attending college or a vocational school that you may be eligible to receive a scholarship?

Are you a teacher or educator who uses model rocketry in the classroom? You are welcome to apply for a \$500 grant to use in your program.

In 2001, the NAR's scholarship and Robert L. Cannon educational awards were inaugurated at NARAM. Three NAR members received scholarships and two educators received Cannon award grants. For 2002, there were five Cannon awards and five scholarships presented to recipients. In 2003, there were four scholarships awarded to NAR members and three Cannon award winners. Since 2004, we have awarded 5 Cannon winners per year.

Deadlines for applying for scholarships and the Cannon award are May 1st of

each year. Awards are announced at the annual meet (NARAM). You do not have to be present to receive an award.

Both of these programs are ongoing. See <http://www.nar.org/cannon.html> for details on how to apply. If you have questions concerning either program, please contact the NAR treasurer: Stew McNabb, via email: SMCNABB@ec.rr.com or Joyce Guzik, via email: jguzik@mindspring.com.



Team America Rocketry Challenge (TARC) Scholarship for 2011 and 2012 Graduates

At the 2011 National Finals for TARC, AmSafe Industries, Inc. unveiled a new scholarship program for a \$5,000 annual, four-year scholarship for students that participate in TARC their junior and senior years. That's \$20,000 for college!

While applications for this year's scholarship were due March 1st, the scholarship will be awarded annually beginning with the 2012-13 academic year.

In his announcement of the scholarship, Mr. Terence W. Lyons, CEO of AmSafe Industries Inc. (a manufacturer of aviation safety products and a member of the Aerospace Industries Association) remarked: "We are establishing this scholarship in the honor of Brendan Kutler, who, along with his teammates from Harvard Westlake School in Los Angeles competed in TARC in 2008, reaching the Finals and placing 13th in the nation overall. Rocketry was just one of Brendan's many diverse interests. Brendan was an extraordinary young man who found ways to connect with people all over the globe. With grace and humility, Brendan strived to use his talents to support others and to make the world a better place. It is in this spirit and in his honor and memory that we have established this scholarship. In an era where more often than not we hear about what is wrong with our upcoming generation, Brendan was a shining example of what is good in so many of today's young people. Through this scholarship, we hope to identify other young men and women with similar traits, values and aspirations and to help them, through education, to make a positive impact as tomorrow's leaders."

To learn more about this scholarship program and obtain, click the following links: [application](#) and/or <http://www.rocketcontest.org/> or <http://www.amsafe.com/>.

Cool Link: Rocket Science 101

A website where you can learn about the basic parts of a real launch vehicle, how they are configured, and how they work together to launch a NASA spacecraft. Great for students who want to build a virtual rocket.

<http://www.nasa.gov/externalflash/RocketScience101/RocketScience101.html>

Rocketry School Supplies Provided by Donors


As teachers, you know your students' needs best. Donorschoose.org is available to provide an avenue for public school teachers to submit project requests for the specific materials their students need to learn. As their name implies, donors choose which projects to support. Once a project is funded, they deliver the materials directly to the school.

In return, teachers submit photos of the project in use and thank-you notes from students, which are then sent to the project's donors. To learn more about their

program and how to be a successful DonorsChoose.org teacher see <http://www.donorschoose.org/teacher/index.html>.

This past school year over 23 teachers have completed rocketry projects with the help of donors.

Are you a homeschool parent associated with a homeschool co-op or association? Are you an after-school program teachers employed and following an educational curriculum? Check out <http://www.iloveschools.com/>.

 **NASA Makes Finding Teaching Materials Easy**
NASA's Education Materials Finder will help teachers locate resources that can be used in the classroom. Users may search by keywords, grade level, product type and subject. With hundreds of publications and Web sites indexed, the finder is the best way to locate NASA educational resources.

(<http://search.nasa.gov/search/edFilterSearch.jsp?empty=true>)



National Association of Rocketry (NAR) offers Teachers and Youth Group Leaders Resources

The NAR offers Free Resource downloads (<http://www.nar.org/teacher.html>) produced by members who have helped teachers and youth group leaders like yourself all over the United States.

Interested in a Fellowship this Summer?

Industry Initiatives for Science and Math Education (IISME), founded in 1985, seeks to transform teaching and learning through industry-education partnerships. IISME exists to address the critical need for a strong, highly skilled workforce in math, science and technological fields. **IISME recruits sponsors in California** from Alameda, Contra Costa, Marin, Sacramento, San Francisco, San Mateo, Santa Clara, and Santa Cruz Counties. The majority of Fellowships are offered in the Palo Alto, Sunnyvale, Santa Clara and San Jose Area.

This industry-education partnership focuses on teachers as the primary agents for effecting meaningful change in mathematics and science education. IISME provides teachers with experiences and tools they need to adapt their practices and change their schools so that all students are prepared to be lifelong learners, responsible citizens and productive employees.

<http://iisme.org/AboutSFPApp.cfm>

4-H Uses Model Rocketry for Science, Technology, Engineering and Math

Rocketry is one of the most enjoyable projects 4-H has to offer. 4-H and the National Association of Rocketry has formed a [partnership](#) to help students learn about model rocketry and other aerospace topics.

http://4-h.org/programs_mission_mandates/set.html

Delaware County 4-H, for example, provides Rocketry School Enrichment and After School Enrichment Programs that help students meet Pennsylvania Academic Standards in science. 4-H project books are available for Delaware County, Pennsylvania

classroom teachers, home school families, and after school clubs to use with students.

<http://delaware.extension.psu.edu/4-H/school.html>

World's First Permanent Model Rocket and High Power Launch Site

How did this site come about? What was done to achieve this?
Maurice Laffin in Australia provides the answers!

In Australia's part 101, provisions had been provided for model rocketry and high power rocketry to be self regulated by an Approved Aviation Administration Organization (AAAO) which under the legislation allowed for permanent launch sites.

The key word in this regulation is "indefinitely". This is how the Spalding Rocket Club was able to establish the world's first permanent model rocket and high power launch site. An application was applied for on May 7, 2009. As a result of this approval the Australian Rocketry Association (ARA) began dealing directly with the Australian NOTAM office for this launch site. This procedure proved very successful and was used as a model for other launch sites established later. For all the details, take a look at [vernarockets](#).

Sacknoff Prize for Space History

To encourage research and writing in space history, *Quest: The History of Spaceflight* is offering \$300 and a publishing opportunity to our upper-class undergraduate or graduate level students. If you are writing a paper on any aspect of spaceflight history, considering submitting it to Dr. David Arnold at quest@spacebusiness.com. Check out the details here--[Space History](#).

Manufacturers

Looking for a book to the stimulate your imagination or stir your creative thoughts? Check out [ARA Press](#)!

Trying to make your rocketry dollars stretch to the maximum? While [Estes](#), and? [Quest](#), and [Fliskits](#) offer discounts to educators, you can find free rocketry downloads at [Art Applewhite](#) and [Fliskits](#) as well as 40% (and sometimes higher) discounts on a wide range of products at [AC Supply](#) and [Hobbylinc](#).

Need a special balsa part made? Or body tubes of all sorts and sizes? Take a look at [Balsa Machining Services](#)!



Quick Links...

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- [Our Website](#)
- [NAR Teacher Resources](#)
- [Find a Local Club](#)
- [Model Rocket Safety Code](#)

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