The STEDTRAIN Program
Supporting STEM in the Tennessee Valley since 1988

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Introduction

• Who we are
• What we do
• How we do it
• Examples of success
• Where we get resources to do it
• Why does it matter?
WHO: STEDTRain:

Science and Technology Education and Training - An all-volunteer organization – the oldest STEM program in the United States – since 1988

– Area professionals
– Retired educators & professionals

WHAT: Provide cash seed grants up to $1,000 to Huntsville - Madison area K-12 teachers for hands-on science and technology classroom projects

– Over 800 grants exceeding $330,000 awarded
– Directly “touched” over 25,000 students

• Students teaching students – What a multiplier!

Help address the Science, Technology, Engineering, Math – STEM – deficit in the US education system
HOW – Annual Proposal Cycle

- **Early January** – Emails to teachers and principals to electronically submit grant proposals on the STEDTRAIN website for next school year
- **Mid January** – Current school year mid-term electronic reports due April 15 – All grant applications due with Principal’s signatures
- **Mid-April – June 1**: STEDTRAIN Committee review and score proposals – password-protected on website
- **Last Weekend in April** – STEDTRAIN Symposium for all current year grant recipients – End of Year presentations & Networking
- **June 1 – June 15**: Proposals normalized and ranked
- **June 16 – 29**: Proposals selected for awards
  - Funds allocated only to proposals meeting criteria – or, sadly
  - Funds allocated until they run out
- **July 1**: Awards announced to selected teachers & principals
- **Late August**: Grant awards ceremony for teachers & principals
- **September** onward – Classroom visits by volunteers
TYPICAL RESULTS
Results made possible by STEDTRAIN Grants

Designing, building, and flying a rocket in the American Rocketry Challenge (TARC).

First team from Alabama to compete in the TARC– Westlawn Middle School! 5 YEARS in a row!

Rocket City Space Pioneers Moon Rover. Because of the Rover experience, Huntsville Center for Technology Students will be the only team in the US to be invited to compete in England at the GreenPower final race.

Check out the HCT website for photos and updates!
Understanding the concepts of Mass, Density, Weight, and Volume

ROBOTICS:
• Navigation along a path
• Sensing light vs. dark areas
• “Limit sensors” to control arms for searching
• Potentiometers to measure direction and magnitude of rotations
• Programming

Grade School Level

High School Level
Student & Teacher Development

Teachers training teachers!

Sixth graders training fifth graders

Fourth graders at work.

Caution: Learning in Progress!
• A 2011 STEDTRAIN Grant on weather and weather systems helped children understand what was happening on April 27, 2011.

• School children helped their parents understand as well.
Seed Grant Results – Benefits to the Students

• Strong educational motivation.
  – Who doesn’t want to build a racecar?

• Promotes critical thinking and problem solving.
  – What the best way to do something? How can I reduce car mass?

• Teaches patience – problems are not solved in one hour!
  – The best cars show the most care and time.

• Apply science concepts to real-life situations.
  – How can I make my car faster? How can I reduce friction?

• The best car isn’t always by the student with the best grades.
  – This project allows for students to shine who may not excel in the classroom.

• If there is no one to build it and make work, why design it?
Where do we get the resources to do these things?

- **Fund raising** goes on all year using all available free media
  - The Association member professional societies
  - Local contractors & businesses
  - Grant organizations
  - Individuals

- **Fiduciary Responsibilities**
  - > 90% of funds raised go to classrooms – No paid staff
    - Mailing expenses
    - Modest refreshments at Symposium & Awards Ceremony
  - Grant requirements for accountability for expenditures
  - Grant screening and selection process
  - Every grant recipient visited by STEDTRAIN Volunteer
  - Mid-term and end of year reports
We put men on the moon 6 times! Now let’s help our children

• Address our nation’s STEM shortfalls
• Address our energy challenges
• Put technology to work for all of us
• Reach for the stars

Invest in the future with STEDTRAIN

http://www.stedtrain.org/
Thank you.