

# Taking Suborbital STEM Education to The Next Level: Lessons from the Field and Design Competitions

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## Summary

Anything and Everything! That is what you once thought you could do. You had no limits and no boundaries confining your ambitions. You were free to dream, free to do, and anything was possible. We believe that a little “encouragement” goes a long way with the next generation of explorers and will help to ensure continued student investment in STEM studies.

In 2011, Quest for Stars traveled the United States on a mission to inspire students at a very critical age in their scholastic development. In doing so, we captured NASA history from the edge of space, performed student experiments, and launched a Stratospheric Unmanned Aerial Vehicle Design Contest that is poised to break a few world-records in 2012 with student designs.

Join us in a session of discovery and exploration as we share the ups and downs of STEM education from the edge, outback, fields, and swamps. We will also discuss tips and tricks for partnering with other STEM non-profit organizations, the use of social media, media engagement, and video content.

## Quest for Stars Program

The Quest for Stars was founded as an educational non-profit in 2010 to inspire the next generation to pursue STEM studies by using weather balloons to send small payloads economically to the edge of space.

With the recent downturn in the aerospace industry and the struggling economy, we felt the need to take action. At Quest for Stars, we believe that we are at the beginning of the commercial spaceflight revolution. The time to inspire students is now!

## How does the Program Operate?

Quest for Stars is STEM program that operates in two modes. The first mode of the program is an outreach program. The second mode of the program combines the outreach presentation with student design competitions.

## Outreach

In the outreach model, we visit schools based on achievement and underprivileged status. In this mode, we perform an in school presentation. In the presentation, we focus on:

1. Bringing excitement and “coolness” back to science through the use of social, internet, and multimedia.
2. Reinforcing the importance of pursuing your dreams while highlighting role models like Ron McNair and Sarah Josepha Hale.
3. Involving students in suborbital launch planning using weather balloons--bringing spaceflight planning activities down to earth for students at a young and critical age.
4. Fly edge of space mission for students on site or remotely via live webcast and return data.

## Design Competitions

In this mode, we use both the outreach model and add design competitions. Simply put, we enroll the student in a build out competition where they will take a previously flown design and improve it by becoming payload specialists. We then fly their improvements to make the experience real and exciting.

## Looking Ahead: StratoShuttle

Learning from past competitions, Quest for Stars and partners are out to shatter world-records with students in 2012. We will discuss the Stratospheric UAV competition and review test flight prototype data, which launches just before the conference.

