

Fredericksburg High School Suborbital Aeroscience Studies

**Raising The Bar of Technology
Education –
A Proven Program**

America's Burning Need

- Our engineering workforce is retiring
- Engineering graduates are declining
- 40% Of engineering students are non-residents
- Secondary school budget cuts reduce creative programs that work
- ***There Are Not Enough Engineers To Take Us To Mars!***

What We Do

- **Two Year Program For HS Juniors and Seniors**
- **Physics Based Approach**
 - Mechanics
 - Fluids
 - Electrical
 - Thermal
- **Total Immersion in Problem-Based-Learning Approach**
 - *Instructor Does NO Work – **Students Do Everything***
 - Students Teach Themselves, Driven By Desire To Launch ... ***To Achieve!***
 - **Failure is Absolutely An Option**

What We Do

- *In One Year, Students – BY THEMSELVES – Design, Build, Test, and Launch a 25 ft. Aluminum/Titanium Hybrid-Fueled Sounding Rocket to a Height of 100,00+ft.*

How Well We Do It

- **First High School *Ever* To Build a Rocket That Broke The Sound Barrier**
- **First and Only High School To Successfully Launch at a Federal Missile Range**
- **Only High School To Sign a Space Act Agreement with NASA**
- **Developing 500-Lb Research Vehicles To Lift 35-lb. Packages to 100,000 ft**

How Well We Do It

- **And We Are Launching Again in 2004:**
 - Rocket:
 - Testing Fuel Grain Developed at **Stanford University - *At Their Request***
 - Lifting Payload From **Purdue University - *At Their Request***
 - With Funding From **NASA and WSMR**
- ***FHS SAS Is Already Doing What America Needs***

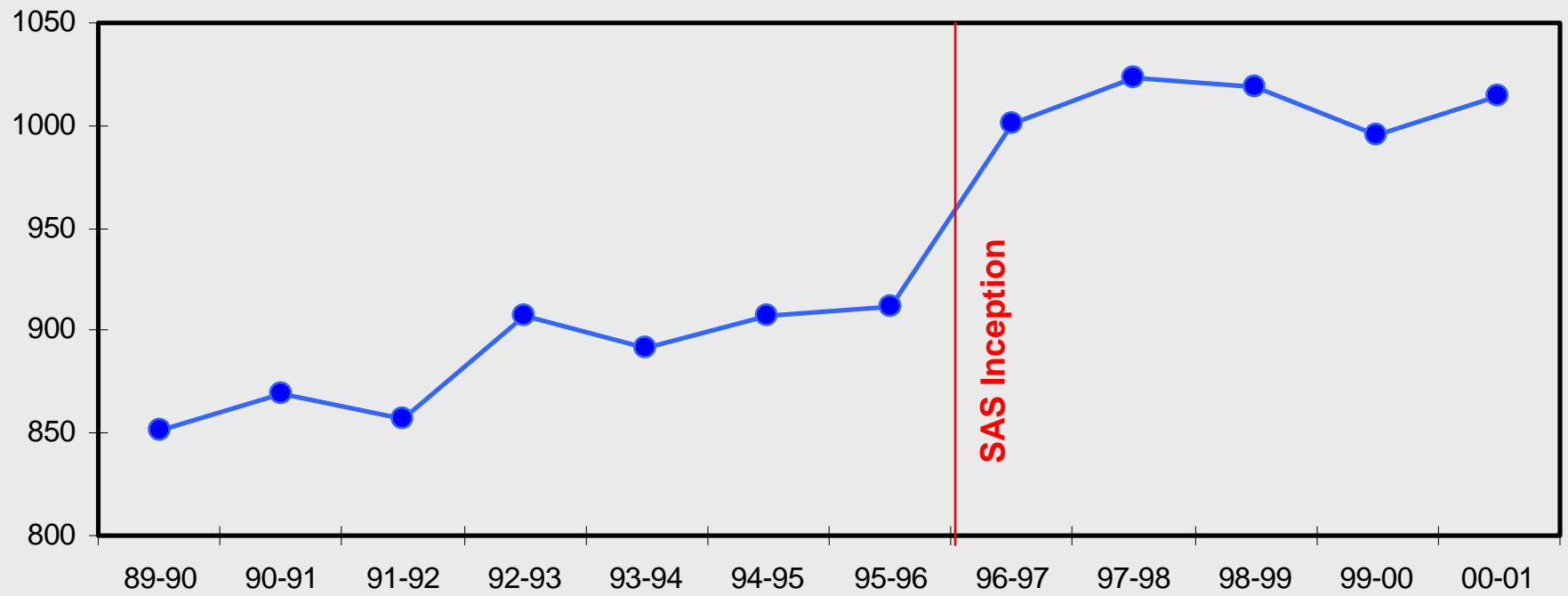
How Well We Do It

- **Government Partnerships**
 - NASA (Marshall, Johnson, Stennis, Wallops)
 - Office of Naval Research
 - White Sands Missile Range
 - Air Force Research Lab
- **Industry Partnerships**
 - ATK Thiokol
 - Lockheed Martin
 - Boeing/Rocketdyne
 - United Space Alliance
 - Over Thirty More

Significant Opportunities for Scholarships and Internships

How Well We Do It

Fredericksburg High School Average SAT Scores



SAS's National Destiny

- **Aligned In Vertical Partnership**
 - Midland Community College
 - Texas Tech University
 - 2+2+2 Program
 - Courses Being Remotely Delivered **NOW**
 - Too Many Universities Interested To Detail/Can't Keep Up With Requests
- **Raising \$3+ Million To Build, Equip and Staff Technical Training Center**
 - Joint Education and Business Consortium; 501(c)3 Status

SAS's National Destiny

- **Goal is To Deliver Curriculum to Other HS Teachers Through Train The Trainer Model**
 - Maximizes Program's Reach
 - Guarantees Quality Replication and Dissemination
 - Already Besieged With Summer Requests

***We Are Already Incapable of Meeting Demand
From Teachers in Texas Alone***