

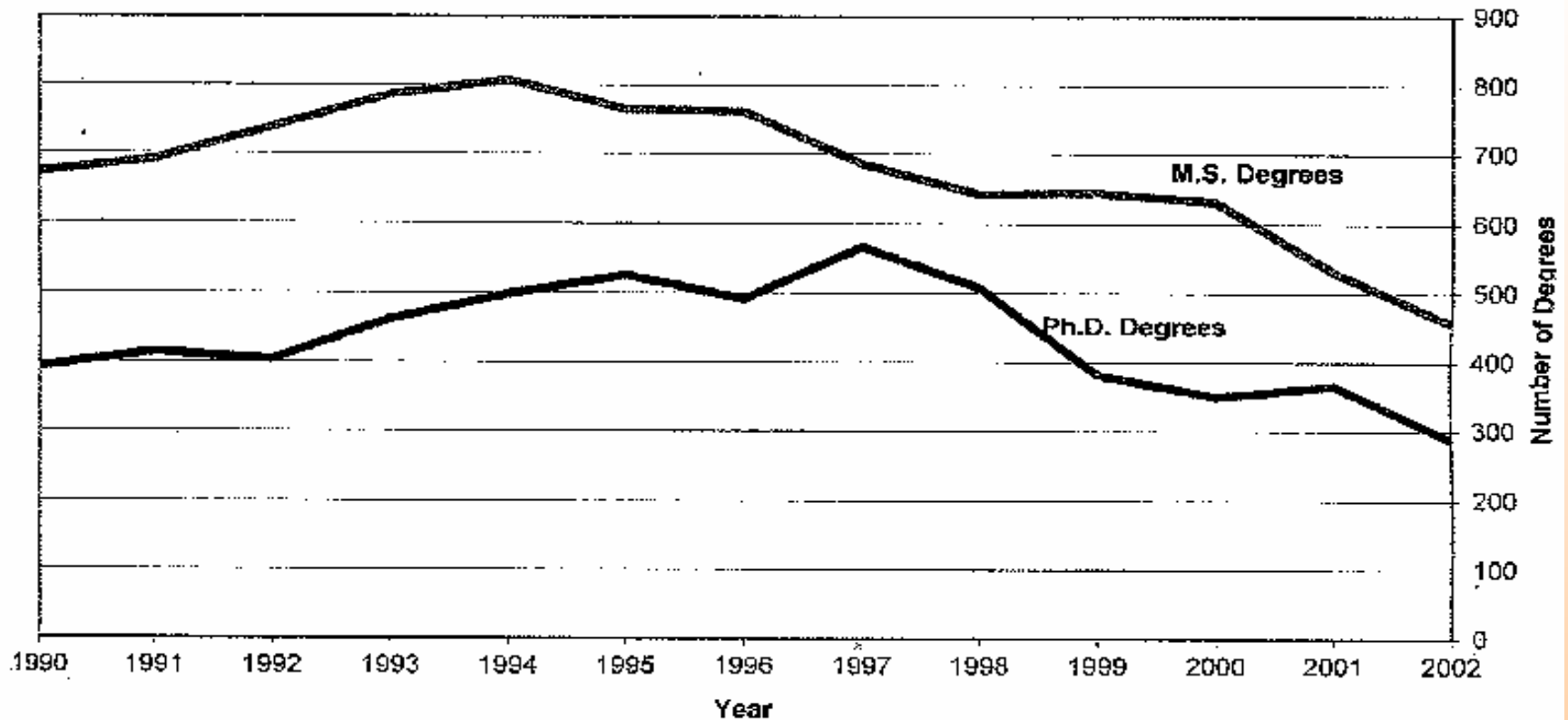
# ASM Materials Education Foundation

# GOAL

**“To excite young people in materials,  
science and engineering”**

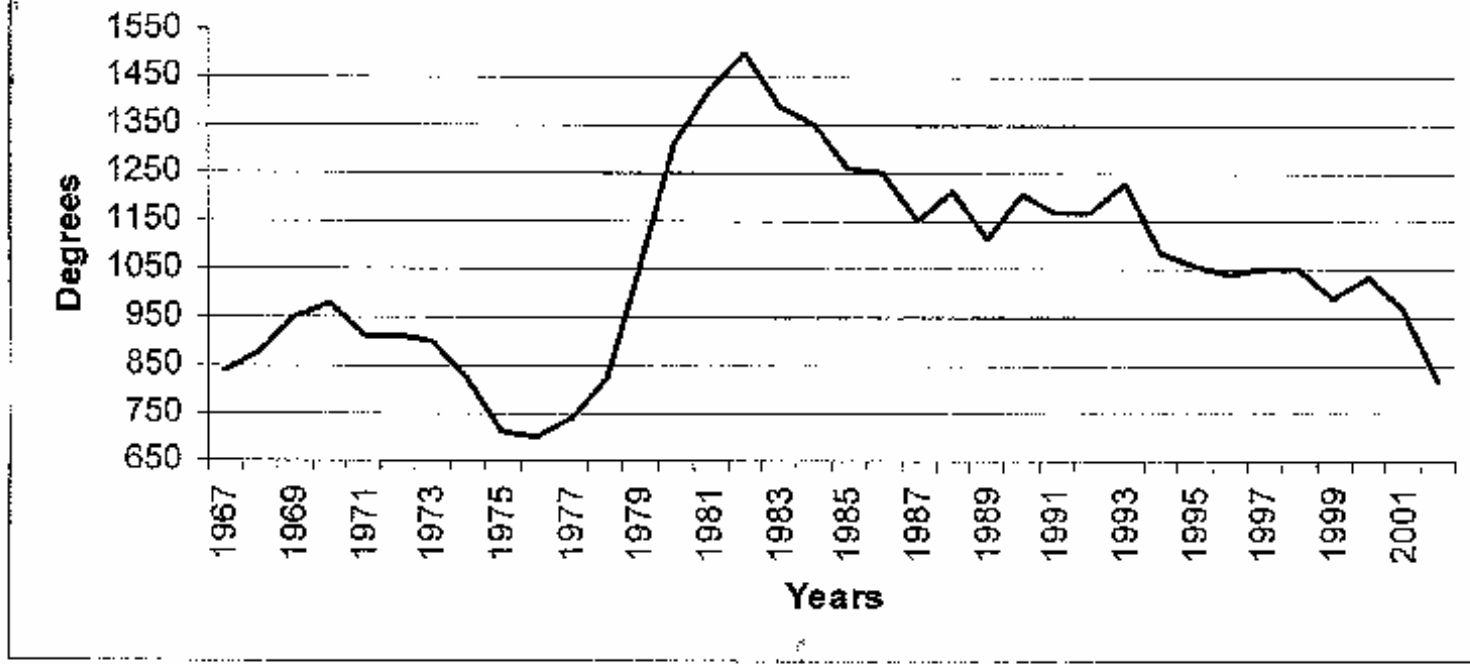
- Scholarships
- Materials Camp<sup>SM</sup> - Students
- Materials Camp<sup>SM</sup> – Teachers
- K-12 Teacher Grants
- Chapter Grants

Figure 3. Graduate Degrees in Metallurgy and Materials Engineering.



**Problem: Not enough interest in science and engineering means not enough students in engineering to assure our future.**

**Figure 1. Number of BS Degrees in Metallurgy and Materials Science**





# K-12 Teacher Grants

- Fibers: Materials made whole
  - First grade
- World of Polymers
  - Fifth grade
- Applications of space age materials
  - Eighth grade
- Metallurgy of Copper and Silver
  - 11th grade Chemistry class



# AWARDS

- 11 scholarships awarded annually
  - Focus on materials majors and prospective majors
- Student Chapter grants
  - Materials Advantage program



# ASM Materials Camp<sup>SM</sup> Students

- 19 locations in 2005
- One week, residential or commuter
- Hands-on instruction + team projects

Since inception:

- 1,191 Students have graduated
- 39 Materials Camp locations in 3 countries

# Student Graduates

“It was the most exciting thing I’ve done in 2 years; the amount of knowledge I learned in 6 days surpasses the amount I learned in 1 year of high school”

**Justin Horvath, Milwaukee**

## **Of graduates in college:**

**86%** enrolled in science / engineering

**34%** of students enrolled in engineering are majoring in Materials Science



# ASM Materials Camp<sup>SM</sup> Teachers

- 12 locations in 2005
- 5 days of hands-on instruction in materials science
- Curriculum: “Materials Science and Technology”
- Taught by master (high school) teachers

Since Inception:

- 503 High school teacher graduates to date
- 21 Materials Camp-Teachers locations

**Enhancing teaching skills and providing practical tools to use in classrooms.**

Tom Stoebe Pittsburgh, PA Sept, 2005



# ASM Materials Camp<sup>SM</sup> Teachers



“Well-organized, and informative workshop. Invaluable experience I can take back to the classroom and share with fellow teachers!” James Rathjen, PhD, Pojoaque High School, NM.



# ASM Materials Camp<sup>SM</sup> Teachers

“The camp was a science educators dream and delightful.”

“I am not a chemistry major, but I am chemistry certified. The content of Materials Camp forced me to rethink my chemistry background and put the world of metals /materials into context. I think I was meant to have been a materials chemist”

“Where else could a teacher get exposed to so much technology & concepts in such a brief period of time?”



# Evaluation

## **ASM Materials Camp<sup>SM</sup> - Teachers**

- 100% Gained New Ideas
- 100% Will Use in Classroom Now
- 100% More Confident Explaining Complicated Concepts
- More detailed evaluation due Fall 2005

# Real Results!

## Materials Science in High Schools

### Albuquerque Success Story

#### Keys To Implementation

#### 1. Prepare a **GREAT** proposal

- Relate to School District's goals
- Match to Standards

# Real Results!

## Materials Science in High Schools

### Albuquerque Success Story

#### Keys To Implementation

## 2. Involve Partners

- Past Teacher Camp Graduates

# Real Results!

## Materials Science in High Schools

### Albuquerque Success Story

#### Keys To Implementation

### 3. Persistence & Patience

- “NO” is NOT an acceptable response

# Real Results!

## Albuquerque Outcome

- 600 Students Enrolled
- 5 local High Schools
- 7 Trained Teachers **ALL ASM MATERIALS CAMP ALUMNI**

Tip: Use the word “Chemistry” in official course title (Chemistry requirement on college transcripts).

# Real Results!

- Washington State: 40 high schools teach materials science and technology courses

# How do we do it?

- 29 Academic host partners: USA, Canada, India
- 324 Volunteer “Materials Mentors”
- 12 “Master Teachers”
- 31 ASM Chapters involved: host site, provide volunteers, funding support
- Financial support from industry, universities, individuals

# Not just ASM

- NACE Foundation – Corrosion Module in curriculum and funding
- Volunteers from MRS, TMS, AWS, MS&T'05 Mini-camp
- Full participation by other societies welcomed and encouraged
  - Develop new venues
  - Provide mentors, curriculum

# This is about making a difference !

We know that engineering, Science,  
and materials are important to our  
nation's future.

BUT

- Does the average adult know this?
- Does the average student know this?

The answer: NO

# WHY?

- Science too hard
- Science too boring
- Science too irrelevant
- What is engineering anyhow?
  
- BUT WE CAN MAKE A DIFFERENCE!

# How?

- Get your society involved
- Volunteer your time

**Working together we can make  
a real difference!**

# Supporting Programs at ASM Materials Education Foundation

## **ASM Pillars Society**

Gifts included in your will

No minimum amount

## **Materials Camp<sup>SM</sup>**

Student and Teacher scholarships  
endowed in perpetuity

## **Roberts Challenge**

New 3:1 matching fundraising  
challenge



# Contacts and References

<http://www.asminternational.org/foundation>

Chuck Hayes, Executive Director

[charles.hayes@asminternational.org](mailto:charles.hayes@asminternational.org)

800-336-5152 x 5506



ASM Materials  
Education Foundation

Tom Stoebe, Foundation Chair

[tgstoebe@earthlink.net](mailto:tgstoebe@earthlink.net)

425-890-4652