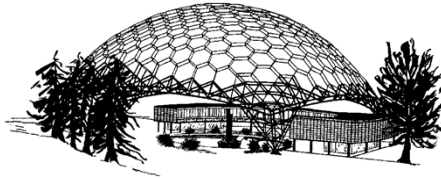


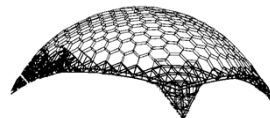
ASM Materials Education Foundation Mission



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

Materials Park, Ohio, USA

- Global headquarters
- Unique facility
- World’s largest open air geodesic dome
- Inspired by R. Buckminster Fuller (“Bucky Balls”)
- East of Cleveland, Ohio
- Mineral Garden



WHO IS ASM FOUNDATION?

- Almost 60 years old (founded 1953)
- IRS 501-c- 3 not for profit educational foundation charity
- HQ located near Cleveland / Chardon, OH
- Pioneers in STEM teacher training
- Invested \$10 + million to date

WHY NEED “STEM”?

- Economic Survival
- Stiff Global Competition
- US Quality of Life
- Unprepared Future Workforce
- Student skills do not match jobs available

PROJECT PARTNERS

Funds and Operations

- ASM Materials Education Foundation
- US Navy: Office of Naval Research
- Navy League

MISSISSIPPI LOCATIONS

OPERATIONAL

- 1.) University Southern Mississippi:
Hattiesburg
- 2.) Hancock Vo – Tech HS: Gulfport / Kiln
MS
- 3.) Meridian MS

POSSIBLE / PENDING

- 1.) Mississippi State University
- 2.) University of Mississippi - Oxford

OBJECTIVES

- **Recruit + Train 30** regional STEM Teachers
- **Expose** teachers to practical, simple, affordable, applied STEM
- **Enhance** teaching methods:
 - Project –based
 - Hands-on
 - Guided inquiry
 - Standards - based

KEY FACTS

- **US Navy** – ONR Funded
- **No \$ costs** locally
- **Host Academic partner** is vital
- **40+ hours / 5 days** lab –based STEM instruction
- **Hands-on** and physical methods: Actively Engaged in Learning
- **Teacher Focused: designed, created, tested & evaluated, refined, taught**

TURN KEY READY

PROVIDED BY ASM FOUNDATION

1. Team of 2 ASM Master Teacher Instructors
2. 40 boxes of consumable supplies + equipment
3. All curriculum tools
4. Food & beverages
5. CEU's
6. Graduate credits at cost
7. Free ASM membership / mentors

Unique Features

- **Scalable:** 35 + locations in 2012
- **Effective:** Participant surveys
- **Multiplier Effect:** High impact on students
- **Diverse partners** involved : \$ + talents
- **Proven curriculum** and teaching methods₁₀

STEM-TM

STEM Thru Materials

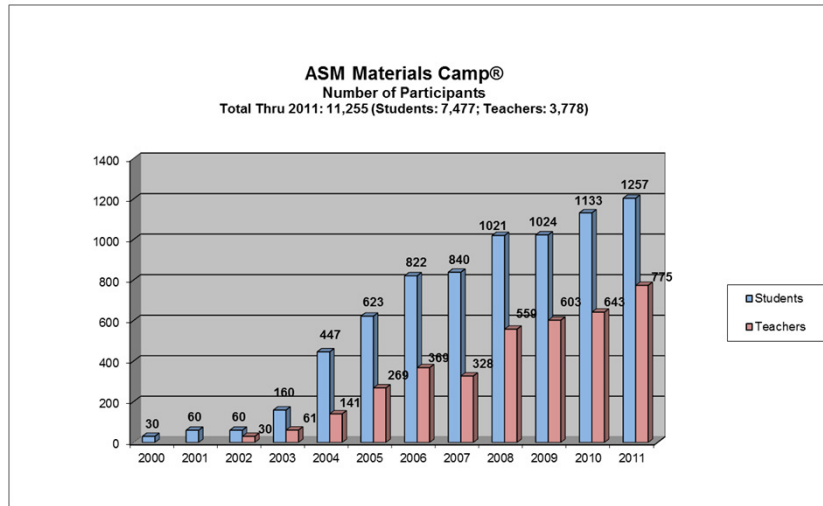
Materials are:

- Gateway
- Connector
- Integrator
- Logical
- Engaging

11

ASM Materials Camp - Teachers		
Academic Host Locations		
Ashbury College	Ottawa	CAN
Southern Alberta Institute of Technology	Calgary	CAN
California State University	Long Beach	CA
Carnegie Mellon University	Pittsburgh	PA
Case Western Reserve University	Cleveland	OH
Drexel University	Philadelphia	PA
Georgia Tech	Atlanta	GA
Ivy Tech Community College	Fort Wayne	IN
Lehigh University	Bethlehem	PA
New Jersey Institute of Technology	Newark	NJ
North Carolina State University	Raleigh	NC
Northern Illinois University	DeKalb	IL
Oak Ridge High School	Oak Ridge	TN
Ohio State University	Columbus	OH
Penn State University	State College	PA
Purdue University	Calumet	IN
Sandia High School	Albuquerque	NM
Stebbins High School	Dayton	OH
Summit Country Day School	Cincinnati	OH
Tidewater Community College / Norfolk State U / ATC	Virginia Beach	VA
Tolles Career and Technical Center	Plain City/ Columbus	OH
University of Akron	Akron	OH
University of Cincinnati	Cincinnati	OH
University of Houston	Houston	TX
University of Illinois	Champaign-Urbana	IL
University of Michigan	Ann Arbor	MI
University of Missouri	Kansas City	MO
University of New Orleans	New Orleans	LA
University of Southern Mississippi	Hattiesburg	MS
University of Washington	Seattle	WA
University of Wisconsin	Madison	WI
Youngstown State University	Youngstown	OH

11,255 Attendees 450,200 Hours of Impact

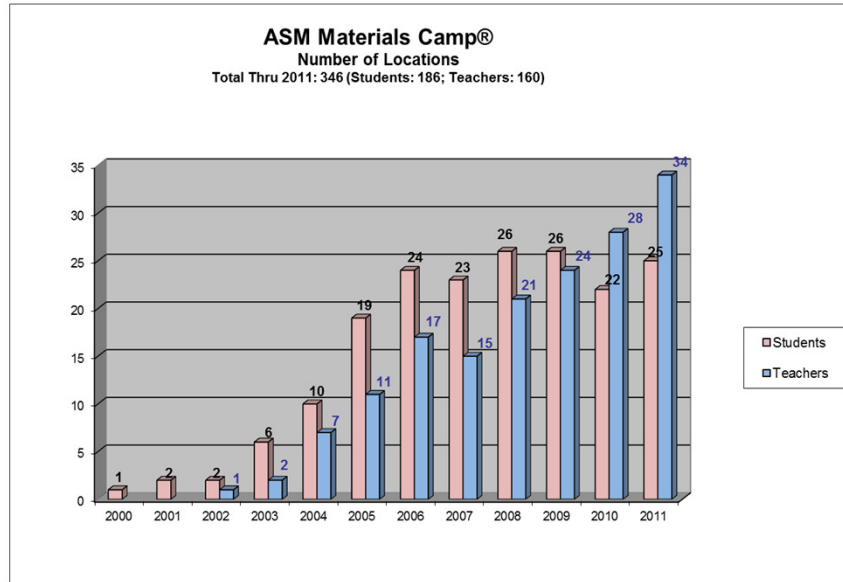


MATERIALS CAMP® - Teachers

TO DATE

- 11 years of operations completed
- 160 various Camps held
- 3,778 teachers trained

TO DATE: 160 CAMPS



Materials Camp®

TARGET AUDIENCES

High school **students**

High school **teachers**

MATERIALS CAMP[®] - Teachers

Goals

- Take advantage of “Multiplier Effect”
- Fun = informative classroom experiences
- Low/no cost
- Labs are 100% proven

MATERIALS CAMP[®] - Teachers

IMPACT

Sample: High School Materials Course Title

- “Materials Science’
- “Materials Science Technology’
- “Chemistry Materials Science”

IMPACT IN HIGH SCHOOLS

- 42% of 270 survey respondents report they are using 4 or more MST labs / demos in their classrooms
- Quite often in Chemistry class
- Integration
OR
- Stand-Alone Materials Science Courses

MATERIALS CAMP[®] - Teachers

IMPACT

100% Will use in classroom

- “I saw things that I would never have thought of using as a classroom activity.”

PARTNERS

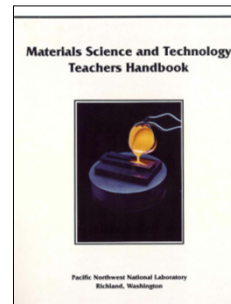
Corrosion Module



NACE FOUNDATION
ADVANCING CORROSION EDUCATION
PARTNER

MATERIALS CAMP® - Teachers Curriculum

- Materials Science and Technology
Teachers Handbook,
(Pacific Northwest National Lab
Battelle Memorial Institute)
- Numerous ASM Resources



MATERIALS CAMP® - Teachers

Core Faculty “Master Teachers”

- 20 + Years in Classroom Experience
- Teach High School Materials Class
- **“Teachers Teaching Teachers”**



MATERIALS CAMP® - Teachers

Participants Formal Education

- Chemistry
- Physics
- Math
- Industrial Arts (Shop)
- Computer
- Art

RECRUITMENT : A LOCAL RESPONSIBILITY

GOAL: 30 TEACHER ATTENDEES

- **OVER RECRUIT** 33 to 36 TEACHERS TO COVER TYPICAL ATTRITION
- MAKE MANY **PERSONAL CALLS** AND PERSONAL **VISITS** TO SCHOOL LEADERS
- USE NETWORKS TO **COMMUNICATE**

HOST FACILITY: DONATIONS

- Lab Technology : Support staff time
- Free campus parking
- Campus or local vendors: food service + delivery
- Shipping & Receiving
- Sink in wet lab / work benches
- Safety equipment
- Hot Plates
- Instructional A/V Technology

INDUSTRIAL VISITS

- **GOAL: HIGHLY INTERACTIVE SITES**
- **“UP CLOSE AND PERSONAL”**
- WITHIN **30 MINUTE DRIVE** OF CAMPUS
- ADVISE OF ALL **SAFETY REQUIREMENTS**
- ADVISE WHERE TO LOCATE FREE **PARKING**
- **TOUR GUIDES AWARE** OF **UNIQUE VISITORS KNOWLEDGE** AND INFO DESIRES

TECHNICAL LAB STAFF

- “IDEAL SITUATION”: SECURE **FULL TIME** AND 100% AVAILABLE **GRAD STUDENT(S)** AS TA
- OPTION TO **SLIGHTLY** COMPENSATE FOR TIME?
- NEED **ACCESS TO ALL** LAB FACILITY EQUIPMENT **CAPABILITIES**
- A LEARNING EXPERIENCE FOR TA

GUESTS AS EXPERTS

- RECRUIT FOR **ON-GOING** DAILY CAMP PRESENCE
- ROLE IS '**DEEPER SCIENCE EXPERTS**'
- INVOLVED **ONLY WHEN REQUESTED** BY MASTER TEACHER, SUPPORTING MANNER

PUBLIC & MEDIA RELATIONS

- **AUTHOR** 'NEWSWORTHY' PRESS RELEASES TO SECURE LOCAL PRINT AND VISUAL MEDIA COVERAGE
- **AUTHOR** AND SUBMIT OP-ED ARTICLES AND MEMBER LETTER TO EDITOR COPY
- SHARE QUALITY "**ACTION**" **PHOTOGRAPHS AND VIDEO CLIPS**

FOOD & BEVERAGES

- SECURE **CAMPUS OR EXTERNAL VENDOR** CATERING
- **PROVIDE** DAILY LIGHT BREAKFAST + AFTERNOON SNACK, HEARTY HEALTHY LUNCH
- ATTENTION TO UNIQUE ALLERGIES, DIETARY **REQUIREMENTS AND PREFERENCES**
- VENDOR TO DELIVER, SECURE (HIDE) AND DISPOSE OF ALL FOOD AND PAPER LEFTOVERS

EVENTS AND CEREMONY

- ORGANIZE **GALA GRADUATION EVENT**
- CONSIDER A **GUEST SPEAKER** KEY DONOR OR CAMPUS HOSTS TO SPEAK BRIEFLY
- **ARRANGE CEREMONIAL PRESENTATION** OF CERTIFICATES TO GRADUATES
- **INVITE** LOCAL DONORS, SCHOOL LEADERS AND MEDIA

SHIPPING/ RECEIVING

- **40+/- BOXES WILL ARRIVE FROM NUMEROUS SOURCES** AND ALL WILL NEED:
- **SECURED AND STORED**
- **KEPT NEAR** TO CAMPUS LAB / CLASSROOMS
- **SURPLUS** SHIPPED BACK, DONATED TO PARTICIPANTS OR HOST, STORED FOR NEXT YEAR

MASTER TEACHER SUPPORT

- ARRANGE FOR NEARBY **HOTEL**
- NEED A VOLUNTEER TEAM TO **HELP SET UP** SUNDAY PM AND WRAP UP ON FRIDAY PM
- ARRANGE AT LEAST ONE EVENING **SIMPLE DINNER** WITH LOCAL LEADERS / ORGANIZERS
- **IDENTIFY MAP LOCATIONS** OF PURCHASES NEEDED FROM NEARBY HOME DEPOT, LOWES, HARDWARE STORES

VISUALS

- CREATE PARTICIPANT **NAME TAGS** PRIOR TO ON-SITE REGISTRATION
- CREATE **DONOR THANKS** PROMINENT LOGOS AND BANNERS
- CREATE AND POST NUMEROUS **DIRECTIONAL SIGNS** FROM PARKING LOT THRU HALLS / STAIRS TO LAB / CLASSROOMS

GENERAL DUTIES

- OWN AND **PERSONALIZE** THE CAMP
- **INVOLVE A TEAM** OF 5 OR 6 VOLUNTEERS
- PLAN AND **THINK AHEAD**
- **ASK** FOR ADVICE EARLY
- MAKE CHECKLISTS AND **FOLLOW UP**

PROGRAM SUMMARY

- 50 + YEARS OF OPERATIONS
- DIVERSE PROGRAMS
- GOAL TO 'FILL HUMAN PIPELINE'
- VOLUNTARY CONTRIBUTIONS ENABLE ALL OPERATIONS
- 3.5 FULL TIME STAFF
- \$10.8 MILLION RESOURCES
- \$1 MILLION ANNUAL BUDGET

CONTACTS

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