



*Green Chemistry &
Environmental Sustainability:*
A Middle School Module



Michael Rottas

Associate Director, Environmental Health & Safety
Pfizer Global Research & Development (Groton, CT)

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Agenda

- Overview of Green Chemistry Program at Pfizer
- Background on The Pfizer Foundation and science education outreach
- Middle School Module Overview
- Q&A



Green Chemistry at Pfizer

- Formal program began in 2001
- Multi-disciplinary approach
- Site-based and Corporate-wide efforts
- EPA Presidential GC Award – 2002 (Sertraline)
- UK IChemE Crystal Faraday Award – 2003 (Sildenafil)
- Closely linked to Corporate Citizenship philosophy



Green Chemistry at Pfizer

Internal Elements

Site-based teams

Corporate Steering Committee

Seminars

Symposia

Site-based awards

Pipeline articles

Annual program goals

Metrics

Branding/logo





Green Chemistry at Pfizer

External Elements

Journal publications

Conference presentations

Validation/Recognition

Student sponsorship

Academic partnerships

Graduate workshops





Pfizer Philanthropy

- *Access to Medicines*

- Pfizer Helpful Answers
- Patient Assistance Programs
- Trachoma Initiative
- Sharing the Care/ Connection to Care
- Diflucan Partnership

\$500-600 million/year

- *Colleague Programs*

- United Way
- Global Health Fellows
- Matching Gifts Program
- Volunteer Program

- *Caring for Community*

- Global Health
- Community Programs
- Science Education



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- Global Health
- Community Programs
- **Science Education**



Pfizer Foundation Science Education Program

Goals are to:

- Help raise the standards of scientific literacy for all students;
- Broaden the pool of future scientists;
- Improve the quality of the workforce in a high-tech environment; and,
- Offer opportunities for students from diverse backgrounds.



SMART Program

- **S**cience & **M**ath **A**re **R**eally **T**errific
 - SAMJAM – Science & Math Jamboree
- School partnerships
- Teacher training programs
 - Job shadowing
 - Site visits/tours
 - Conference attendance sponsorships



Convergence

- Natural fit to align efforts of Green Chemistry and Science Education Programs
- Middle and high schoolers have a concern for the environment
- Create a learning experience that embraces both chemistry and the environment – they can co-exist through green chemistry!



The Middle School Module

- A set of exercises, readings and experiments to teach children about environmental sustainability and green chemistry through a ten day, interdisciplinary module
 - Science
 - Math
 - Language Arts
 - Social Studies
- Based on a team-based product development project
- Mapped to national education standards



The Middle School Module

- Goals
 - Inspire middle schoolers to pursue science and math education
 - Provide an elemental awareness of triple bottom line concept and environmental stewardship/ sustainability
 - Learn **basics** of green chemistry
 - Children to self-discover complexity of industrial and societal challenges



Timeline

- 1Q04 - Grant secured from The Pfizer Foundation
- 2Q04 - Project launched
- 3Q04 - Teachers oriented and solicited to participate
- 3Q04 - Selected “volunteer” teachers to work with The Keystone Center
- 4Q04 – First draft written
- April 2005 - Teacher training
- Classroom testing April-June, Sept-Nov., 2005





Next Steps

- Incorporate learnings into revised version
- Roll out module to Pfizer SMART schools
- Make available to any who are interested, free of charge (haven't determined mechanism yet)
- Develop a High School version, with more detail and complexity around the 12 Principles and triple bottom lines



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