SEPA + RCMI + INBRE + Community: A Great Partnership

December 15, 2006
Science Education Partnership Award (SEPA)
SEPA PHILOSOPHY

- Encourages and supports the interactions of scientists and clinicians with educators, community organizations and science centers to:
  - increase the participation of young people in clinical and basic research careers
  - improve K-12 and public understanding of, and support for, NIH funded medical research
SEPA GOALS

- Innovative pedagogy
- Extend and Leverage existing science education programs
- Pipeline of future scientists and clinicians
- Potential for widespread dissemination and public outreach
  - Medical research
  - Emerging Health Issues
  - NIH
  - Clinical Trials Process
Need for Science Education and Health Literacy

- Americans and science
  - 17% adults consider themselves well informed about science
  - 29% of adults can define DNA
- Nearly half of all American adults--93 million people--have difficulty understanding and using health information
- ~5 – 6% have heard of the NIH
Need for Science Education and Health Literacy

“... big hospital somewhere”
Health Literacy

Health literacy, therefore, can be seen as **the ability of an individual to understand information** given to them by healthcare providers, educational materials accompanying over-the-counter medications, or prescription bottle labels, and the **ability to process this information** to care for themselves, those under their care, and to access the healthcare system in an appropriate and responsible manner.

*Healthy People 2010:*
Health Literacy

Number of adults at each prose literacy level

2003 National Assessment of Adult Literacy
Health Literacy

“the strength of a democracy rests on the integrity of its journalists” . . . . . . Abraham Lincoln
Health Literacy

“SEPA encourages excellence and innovation in K-12 and Informal Science learning by serving and linking students, teachers, parents and the community”
SEPA FUNDING

- R25 [Educational] funding mechanism

- **Phase I - 3 years**
  - Development and evaluation of biomedical and/or basic science models

- **Phase II - 2 years**
  - Develop, implement and evaluate effective strategies for dissemination

- **Phase I + II --- 5 years @ ~ $1.3M**
SEPA INSTITUTIONS

- Universities, colleges and community colleges
- Public and private school systems
- Professional organizations
- Scientific societies
- Museums and Science Centers
- Research institutes
- Private foundations
- Non-profit organizations
SEPA GROWTH

- 1991: 12 programs, $5M
- 1999: 16 programs, $4M
- 2000: 52 programs, $12M
- 2001: 62 programs, $15.8M
- 2002: 62 programs, $15.8M
- 2003 - 2005: 70 programs, $16.1M
- 2006: 70 programs, $15.9M
- 2007: ~70 programs, ~$15.7M
SEPA MODELS

Formal
- K-12 students, teachers, parents
- Small numbers, high contact mode
- Community outreach

Informal
- Science Centers and Museums
- Huge numbers, moderate contact mode
- Public outreach
SEPA MODELS - Formal

- Biomedical researchers **teaming** up with K-12 teachers to **increase** the teachers' science knowledge and teaching skills

- Student mentoring and internships in research labs

- Students using epidemiological methods to track the source of a “synthetic” pandemic.

- Mobile molecular biology labs
SEPA MODELS - Informal

- “Hands-on" and public outreach activities at science centers and museums that inform the general public on health-related subjects such as:

  - Stem cells and Regenerative Medicine
  - Molecular biology and Genetics
  - Hearing loss
  - Aging
  - Current, health-related news
  - Real time, visitor-operated microscopy
  - Emerging Infectious Diseases
States with SEPA Awards

= states with SEPA projects

National Center for Research Resources
NATIONAL INSTITUTES OF HEALTH
IDeA States with SEPA Awards

= IDeA states with SEPA projects

= states with SEPA projects

National Center for Research Resources
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National Center for Research Resources
SEPA MODELS – HSTA

Results After 10 Years

West Virginia Community and Campus
Working Together To Improve The Success
of Under-Represented 8th-12th Grade
Students Pursuing Science/Health Careers

HSTA Parent Educational Attainment

- 26% Attended College
- 74% Did Not Attend 4 Yr. College

HSTA Student Educational Attainment

- 99% Attended College
- 1% Did Not Attend 4 Yr. College

National Center for Research Resources
NATIONAL INSTITUTES OF HEALTH
NCRR model – 1 of 16 potential partnerships

WV SEPA

K-12 Pipeline

WV INBRE

Undergrad Pipeline
SEPA MODELS – HSTA

~ 600 HSTA grads into college
~ 160 in WV INBRE colleges
PhD, MD, PharmD, Vets, Med Techs
27X return on NIH investment
NCRR model – 1 of 16 potential partnerships

WVU SEPA

Wheeling Jesuit Univ. SEPA

WV INBRE
NCRR model – 1 of 16 potential partnerships

New WVU SEPA \hspace{2cm} U. Pitt CTSA

Clinical trials process for students, teachers and community
NCRR model – 1 of 16 potential partnerships

WVU SEPA  U. Pitt CTSA

Wheeling Jesuit Univ. SEPA  WV INBRE
NCRR model – 1 of 16 potential partnerships

- WVU SEPA
- U. Pitt CTSA
- Pittsburgh Community
- Wheeling Jesuit Univ. SEPA
- Pitt Medical School
- WV INBRE
- 3 Pittsburgh SEPAs
RCMI Institutions with SEPA Awards

= IDeA states with SEPA projects

= states with SEPA projects

= RCMI states with SEPA projects

National Center for Research Resources
Science Education – standardized curriculum
• Scientists are cool
• The Scientific Method rocks
• Teamwork is fun
• Peer Mentors are awesome
• Pasteur was right
• More standard curves please
• Bring on the statistics
• This mobile lab is more fun than shopping at the mall

Science Education – standardized curriculum with inquiry based classroom or mobile lab experience
A teacher affects eternity, one can never tell where one’s influence stops

- Henry B. Adams
L. Tony Beck, Ph.D.
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