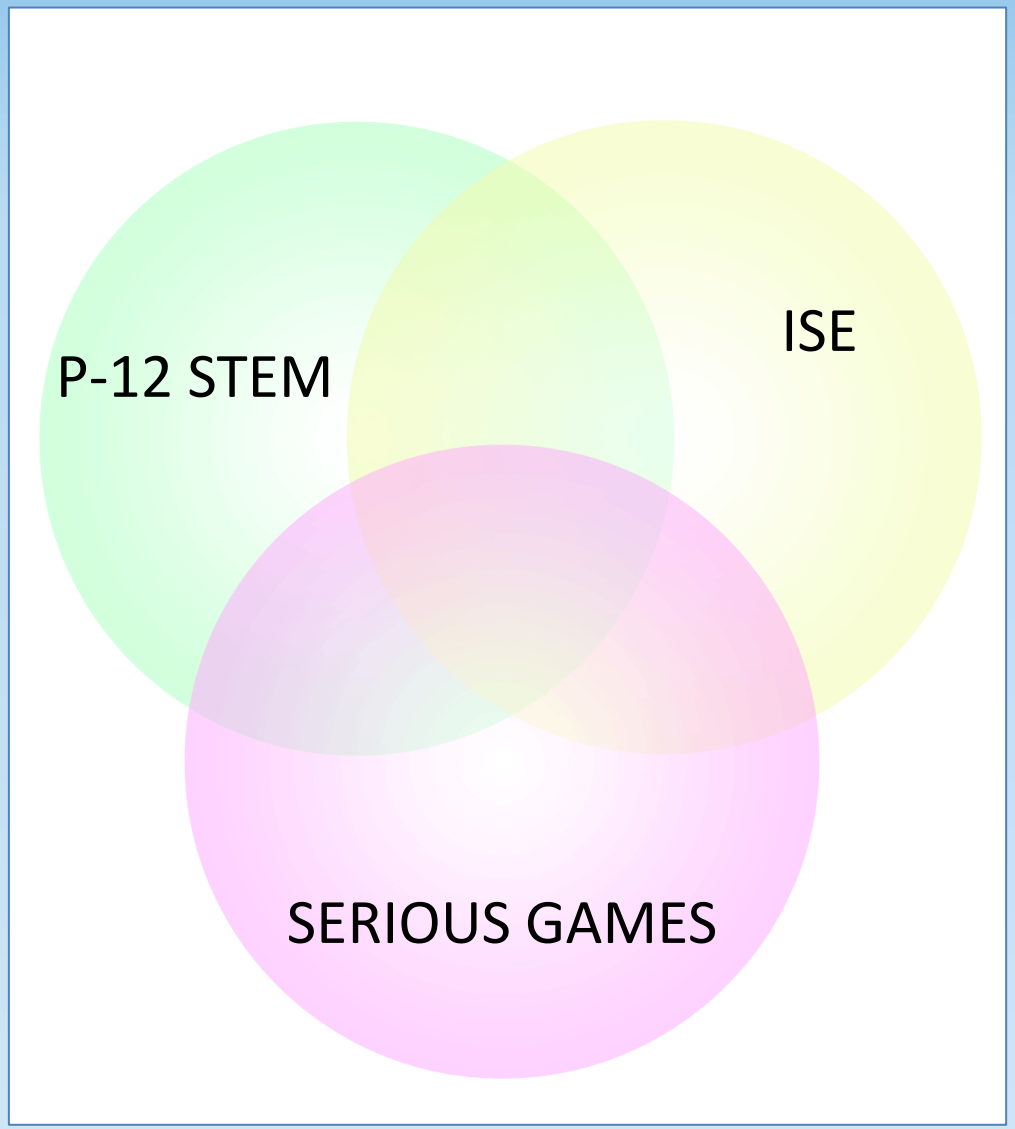
Tony Beck, PhD
Director, Office of Science Education – Science Education Partnership Award (OSE/SEPA)
Office of Director, NIH

Established 1991

STEM - Formal & ISE



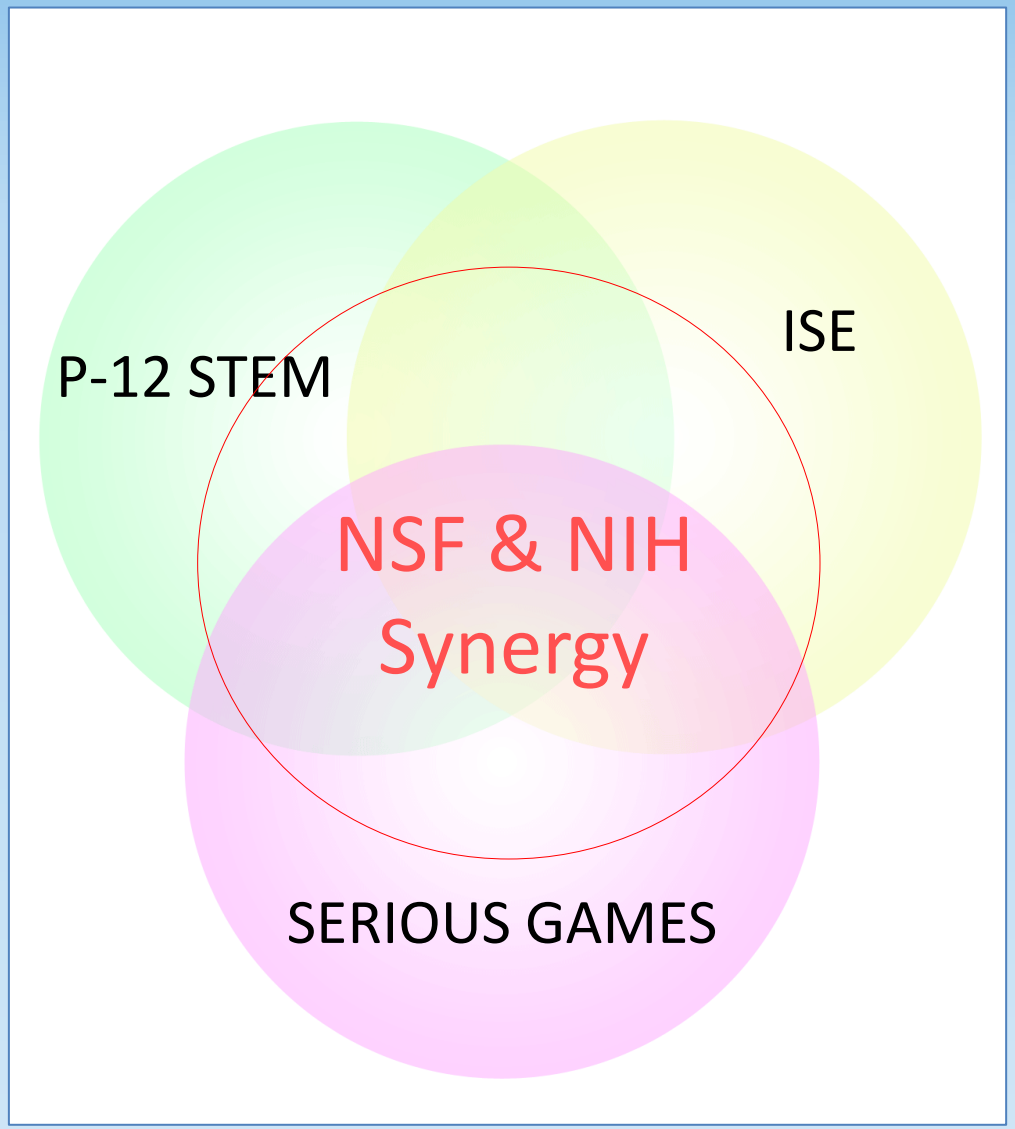
DISCOVERY RESEARCH K-12

DR K–12 PI Meeting
June 1–3, 2016
Washington Marriott Wardman Park
Washington, D.C.

Community for Advancing Discovery Research in Education

- ✓ CADRE supports and connects researchers and developers in K-12 STEM education.
- ✓ Early Career in STEM Education R&D
- ✓ Closing the STEM Achievement Gap
- ✓ A Framework for Assessing Environmental Literacy
- ✓ A Longitudinal Randomized Trial Study of Middle School Science for English Language Learners
- ✓ Across the Sciences: Multidisciplinary Learning for Teachers through Multimedia
- ✓ Agency in Sustained Problem-Based Inquiry: Learning Science Through and as Innovation

SEPA SCIENCE EDUCATION PARTNERSHIP AWARD
Supported by the National Institutes of Health


P-12 STEM
ISE
NSF & NIH
Synergy
SERIOUS GAMES

SEPA

SCIENCE EDUCATION PARTNERSHIP AWARD

Supported by the National Institutes of Health

Celebrating 25 years

SEPA SCIENCE EDUCATION PARTNERSHIP AWARD

Supported by the National Institutes of Health

Genesis:

- Increase the numbers of urban, rural and minority students considering research and medical careers

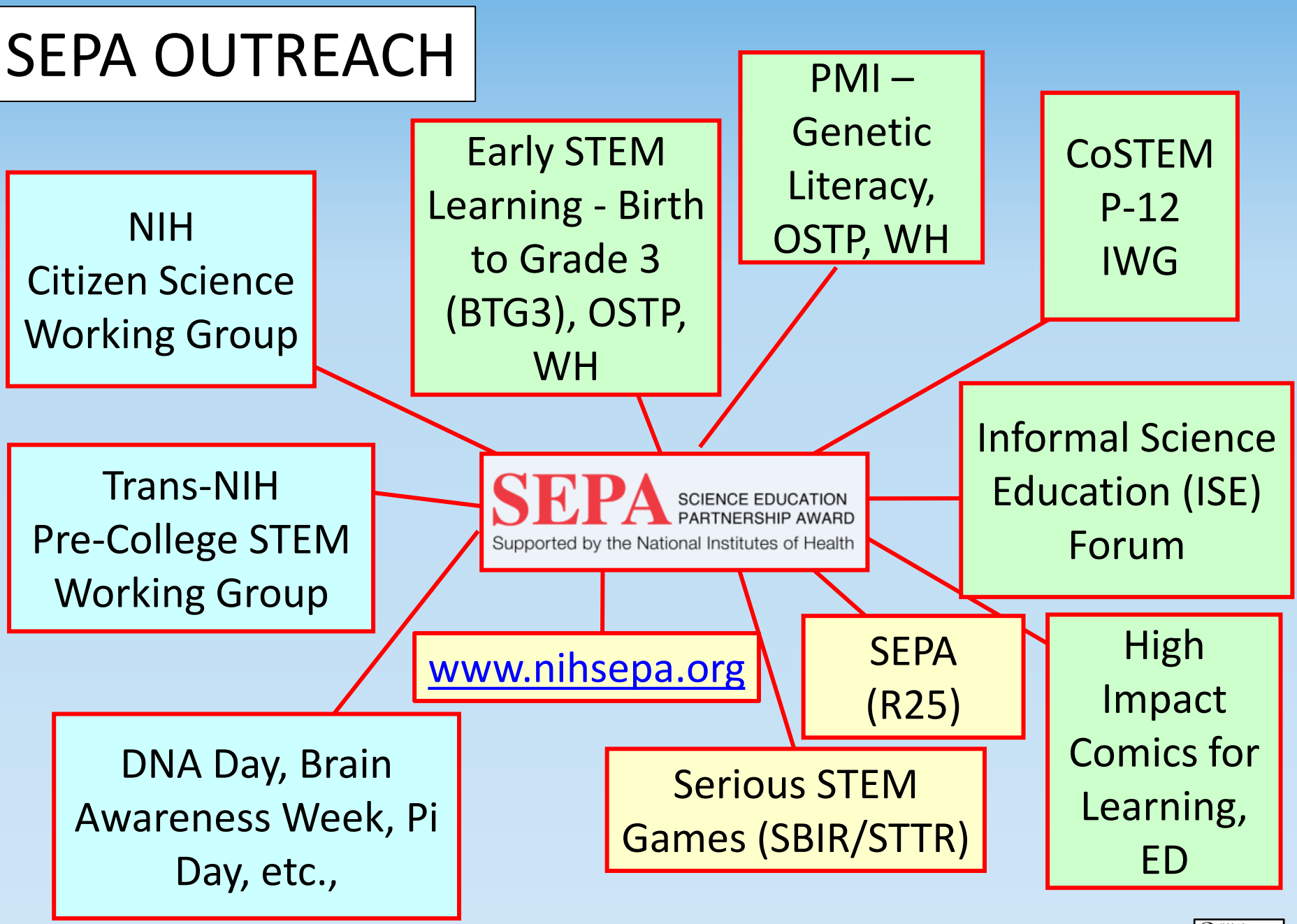
Partnerships:

- Scientists and clinicians partnering with educators, community organizations and science centers

Goals:

- Career opportunities for minority and underserved students
- Public health literacy
  - Teacher professional development
  - Student and teacher laboratory internships
  - Mobile laboratories bring science to rural communities

SEPA OUTREACH



FY16 SEPA Portfolio

- R25 Science Education, PAR-14-228
- $250K/Year X 5 Years ($1.3M)
- FY16 Budget: $17.1M
- SEPA Awards:
  - Type 5 (71)
  - Type 1 (22)
  - BD2K: Admin. Suppl (~8)
  - U13 (SEPA), R13 (Mobile Lab Coalition), (1 ea.)
- SBIR/STTR
  - Serious STEM Games, PAR-14-325, PAR-14-326
  - Type 5 & Type 1 (~20)

SEPA Evaluation – 15 years of evolution

PROJECT LEVEL (PAR-14-228)

- 10% of budget
- Independent evaluator
- Classroom-based P-12 projects
  - Randomized Controlled Trial (RCT)
  - Matched Case Comparison
- Research plan must include a Logic Model
- Advisory Committee for independent feedback

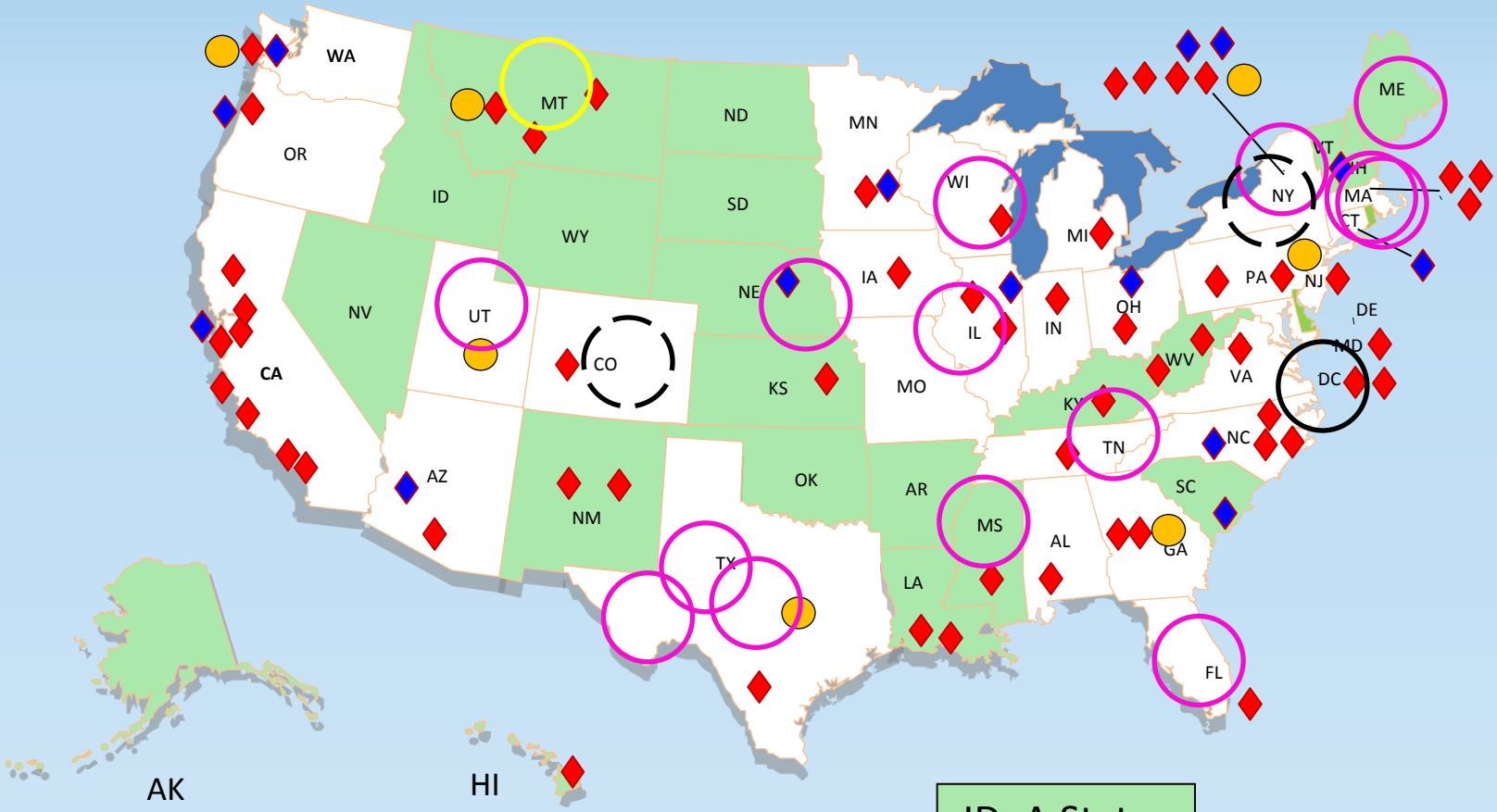
- **PROGRAM LEVEL**
- SEPA Evaluation Feasibility Study, 2005 (OPASI [$50K], Westat)
- SEPA Process Evaluation, 2014 (SEPA [$900K], Westat)

SEPA FUNDED Projects

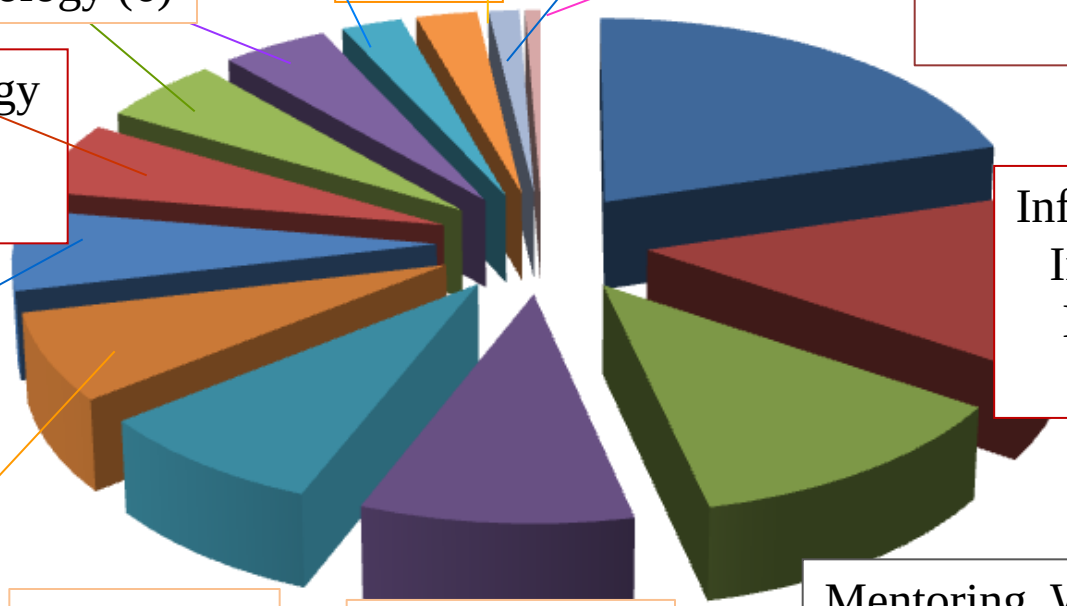
SEPA P-12 STEM Projects

SEPA Museum Exhibits

FY16 AWARDS



SEPA project diversity



Systems: Aging, Hearing, Brain, Lung, Bone (8)

Citizen Science (10)

Early Stem (11)

STEM Games (12)

Veterinary Medicine (2)

Molecular Biology (6)

Basic & Clinical Research Methods (32)

Microbiology, Virology & Disease Vectors (9)

Infectious Disease, Immunology & Epidemiology (9)

Nutrition, Obesity, Diabetes & Cardiovascular (20)

Clinical Trials Process & Citizen Science (22)

Human Genetics & Genomics (13)

Public Health, Lifestyle & Health (15)

Mentoring, Workforce Development & Teacher Professional Development (25)

Citizen Science

EXECUTIVE OFFICE OF THE PRESIDENT
OFFICE OF SCIENCE AND TECHNOLOGY POLICY
WASHINGTON, D.C. 20502

September 30, 2015

MEMORANDUM TO THE HEADS OF EXECUTIVE DEPARTMENTS AND AGENCIES

FROM: John P. Holdren
Assistant to the President for Science and Technology and
Director of the Office of Science and Technology Policy

SUBJECT: Addressing Societal and Scientific Challenges through Citizen Science and Crowdsourcing

Science AAAS

Home | News | Journals | Topics | Careers

Science | Science Advances | Science Immunology | Science Robotics | Science Signaling

SHARE

POLICY FORUM | CITIZEN SCIENCE

Next Steps for Citizen Science

Big Data to Knowledge (BD2K) Advancing Biomedical Science Using Crowdsourcing and Interactive Digital Media (UH2) RFA-CA-15-006

UH2 Exploratory/Developmental Cooperative Agreement Phase I

PLOS ONE | Publish | Abo

RESEARCH ARTICLE

An Analysis of Citizen Science Based Research: Usage an Publication Patterns

nature International weekly journal of science

Home | News & Comment | Research | Careers & Jobs | Current Issue | Archive | Audio & Video

Archive > Volume 524 > Issue 7565 > Editorial > Article

Rise of the citizen scientist

From the oceans to the soil, technology is changing the part that amateurs can play in research. But this greater involvement raises concerns that must be addressed.

SEPA Citizen Science - sampling

SEPA - Barcode Long Island: Exploring Biodiversity in a Unique Urban Landscape

High School Students and Teachers and Families

Cold Spring Harbor Laboratory, R25 OD 16511, , R25 OD15619

SEPA - Teaching to Learn: WV-HSTA Students Take CBPR to Their Community

High School Students and Teachers and Families

West Virginia University; R25 OD10495

SEPA - Montana Tech Phagedigging Program, Building the Biomedical Pipeline,

High School Students and Teachers and Families

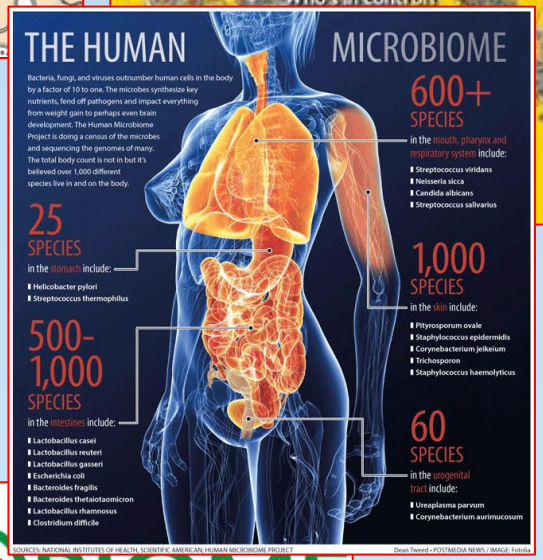
Montana Tech Of The University of Montana; R25 OD16533

SEPA - More than just a taste of citizen science

Museum: Students, Teachers, Parents, Community

Pending Award FY16

Microbiome



HUMAN MICROBIOME CONGRESS 2016

NIH HUMAN MICROBIOME PROJECT

SEPA - Microbiome

The Human Microbiome
ZOO in YOU
El Microbioma Humano

SEPA - The Zoo in You: Exploring the Human Microbiome

Oregon Museum of Science and Industry, Portland, OR
R25 RR032210, Grant Period: 03/01/2011 - 02/29/2016

SEPA Mobile Labs

BU CityLab Mobile Bus (1995)

Pitt CTSA Mobile Tractor Trailer (2008)

Purdue SOVM Mobile Vet Van (2016)

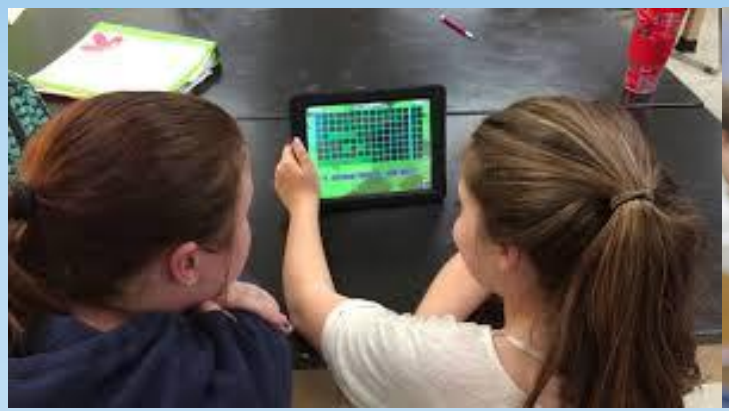
Pre-College STEM and ISE FOAs

NIH Science Education Partnership Award (SEPA) (R25)
PAR-14-228
http://grants.nih.gov/grants/guide/pa-files/PAR-14-228.html\

- 5 Years, $1.3M
- Any NIH-Related Research Area
- Formal P-12 and ISE
- Rigorous Evaluation

- Receipt dates: June 22, 2016, 2017, 2018, 2019

STEM Games for Learning



SBIR/STTR

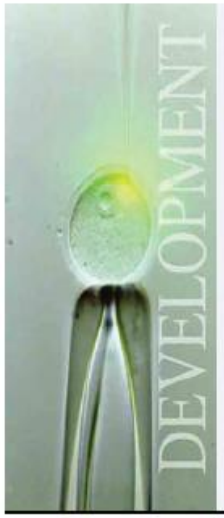
SMALL BUSINESS INNOVATION RESEARCH
SMALL BUSINESS TECHNOLOGY TRANSFER

National Institutes of Health
Office of Extramural Research

NIH SBIR/STTR 3-Phase Program

PHASE I Feasibility Study

- Budget Guide: $150K (SBIR); $150K (STTR) Total Costs
- Project Period: 6 months (SBIR); 1 year (STTR)

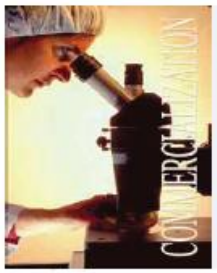


PHASE II Full Research/R&D

- $1M (STTR), $1M (SBIR) over two years

PHASE IIB Competing Renewal/R&D

- Clinical R&D; Complex Instrumentation/Tools to FDA
- Many, but not all, ICs participate
- Varies ~$1M/year; 3 years



PHASE III Commercialization Stage

- NIH, generally, not the "customer"
- Consider partnering and exit strategy early

STEM Games for Learning & Health Literacy

Serious STEM Games for Pre-College and Informal Science Education Audiences (STTR) (R41/R42) PAR-14-325
http://grants.nih.gov/grants/guide/pa-files/PAR-14-325.html

Serious STEM Games for Pre-College and Informal Science Education Audiences (STTR) (R41/R42) PAR-14-326
http://grants.nih.gov/grants/guide/pa-files/PAR-14-326.html

- Receipt dates: February 2017, 2018, 2019

SEPA Website www.nihsepa.org

Science is the belief in
the ignorance of experts.

Richard Feynman,
"What is Science?",
address to science teachers, 1966