Engaging Stakeholders in Strategic Decisions:

From Institutional Planning to Exhibit and Program Development

David Heil
President, David Heil & Associates, Inc.

Ben Sayler
Director of Education & Outreach,
Sanford Underground Laboratory at Homestake, Lead, SD

Sheridan Turner
President and CEO, Kohl Children's Museum, Glenview, IL

Charles Trautmann
Executive Director, Sciencenter, Ithaca, NY

Stakeholders

- Audiences
- Partners
- Board Members
- Staff
- Volunteers
- Donors
- Sponsors
- Civic and Community Leaders

Increasing the "Stake" in Stakeholder

- Front-End, Formative, and Summative Evaluation
- Market Research
- Strengthening Community Relevance and Institutional Value
- Increasing Stakeholder Awareness and Ownership
- Brand Building
- Strategic Planning and New Enterprise Development
- Exhibit and Program Development
- Continuous Improvement of Visitor Experiences, Operations, and Impact

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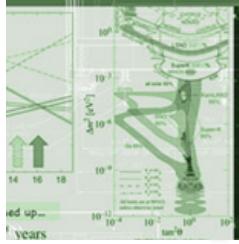
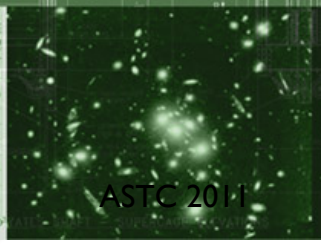
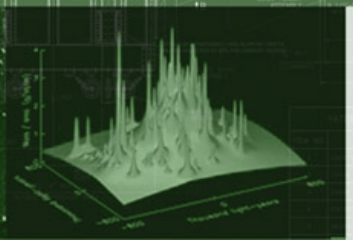
Professor, Physical Science & Mathematics, BHSU



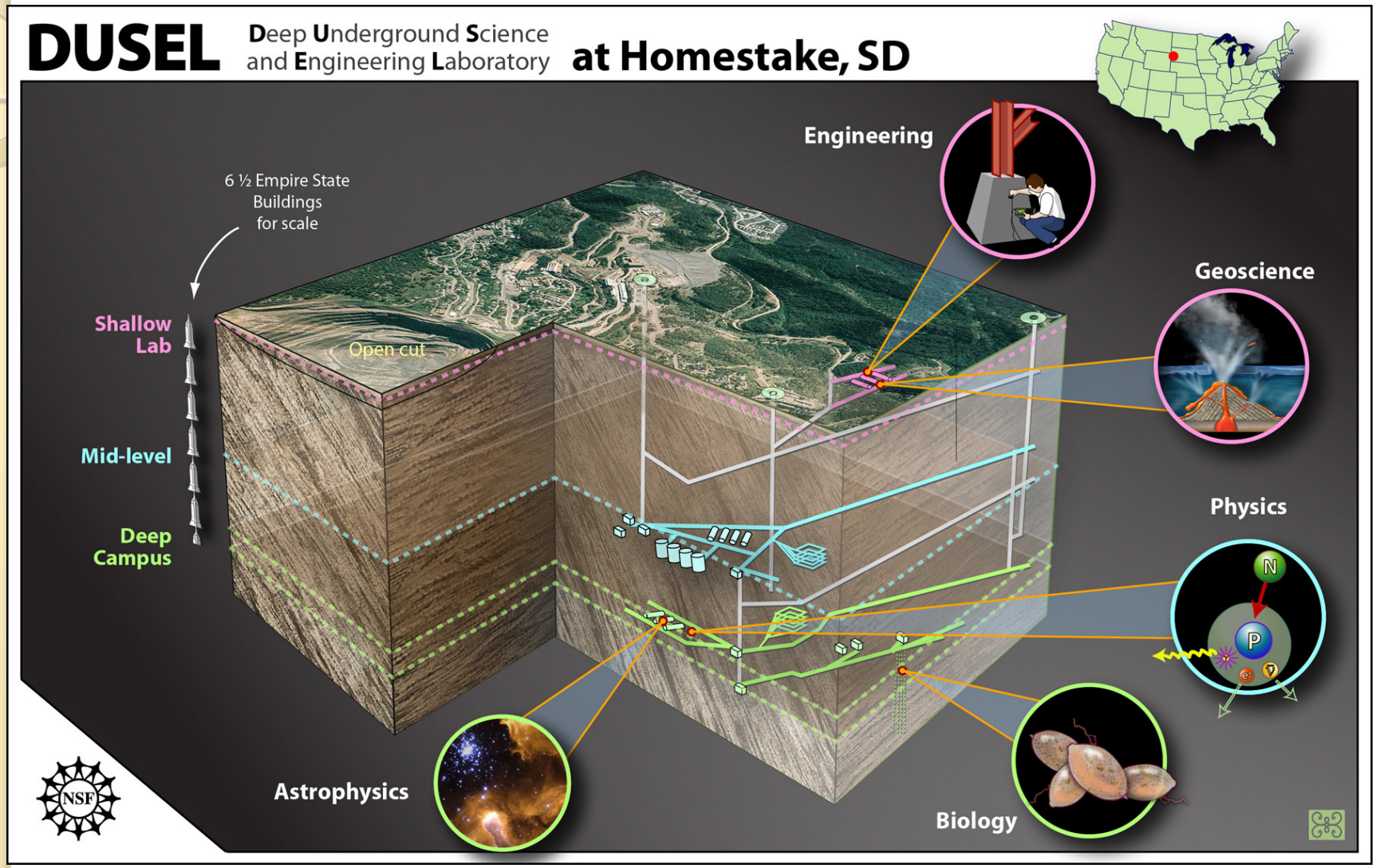




DUSEL
Deep Underground Science and Engineering Laboratory

"The Great Homestake Gold Mines"

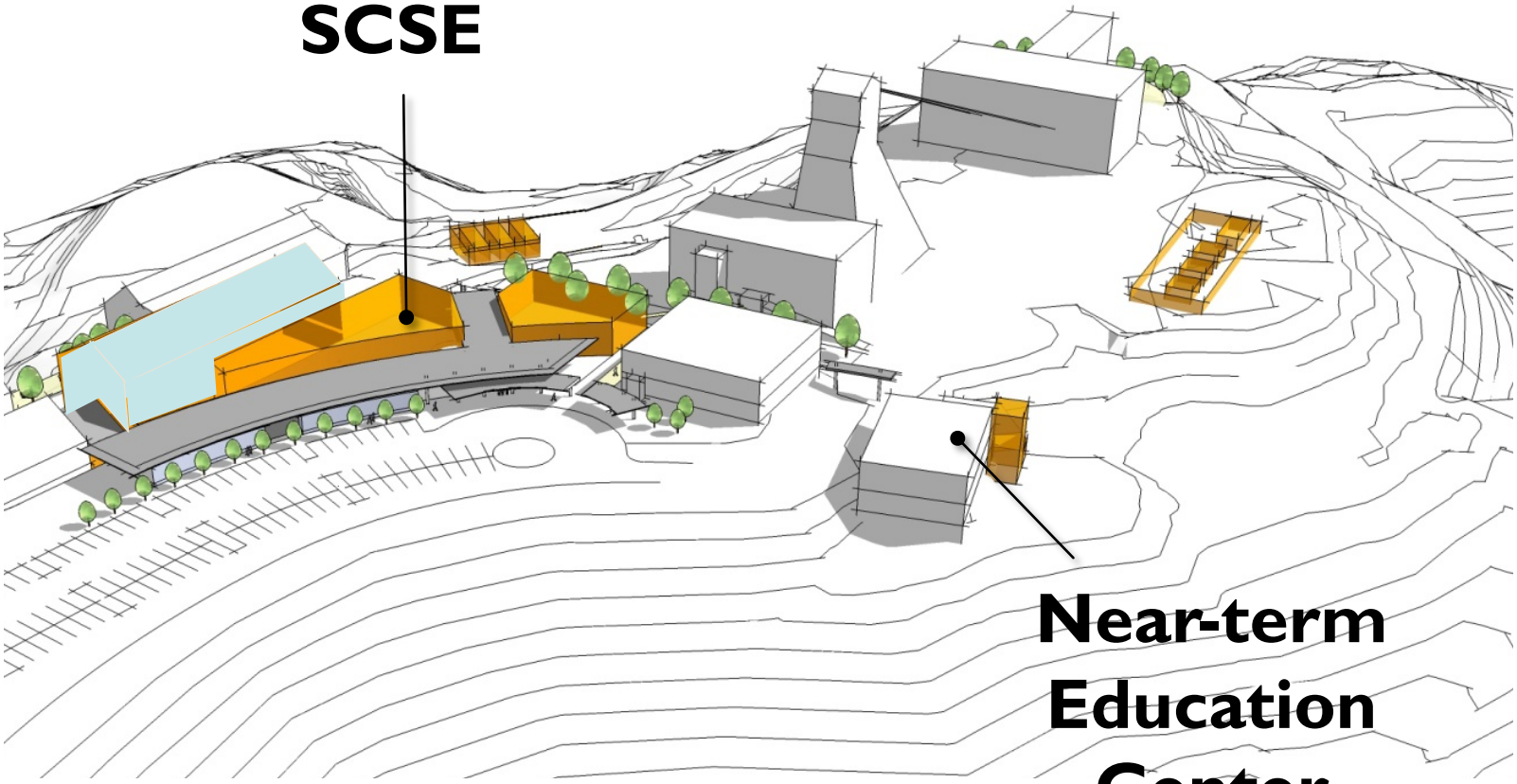
Sanford Underground Lab

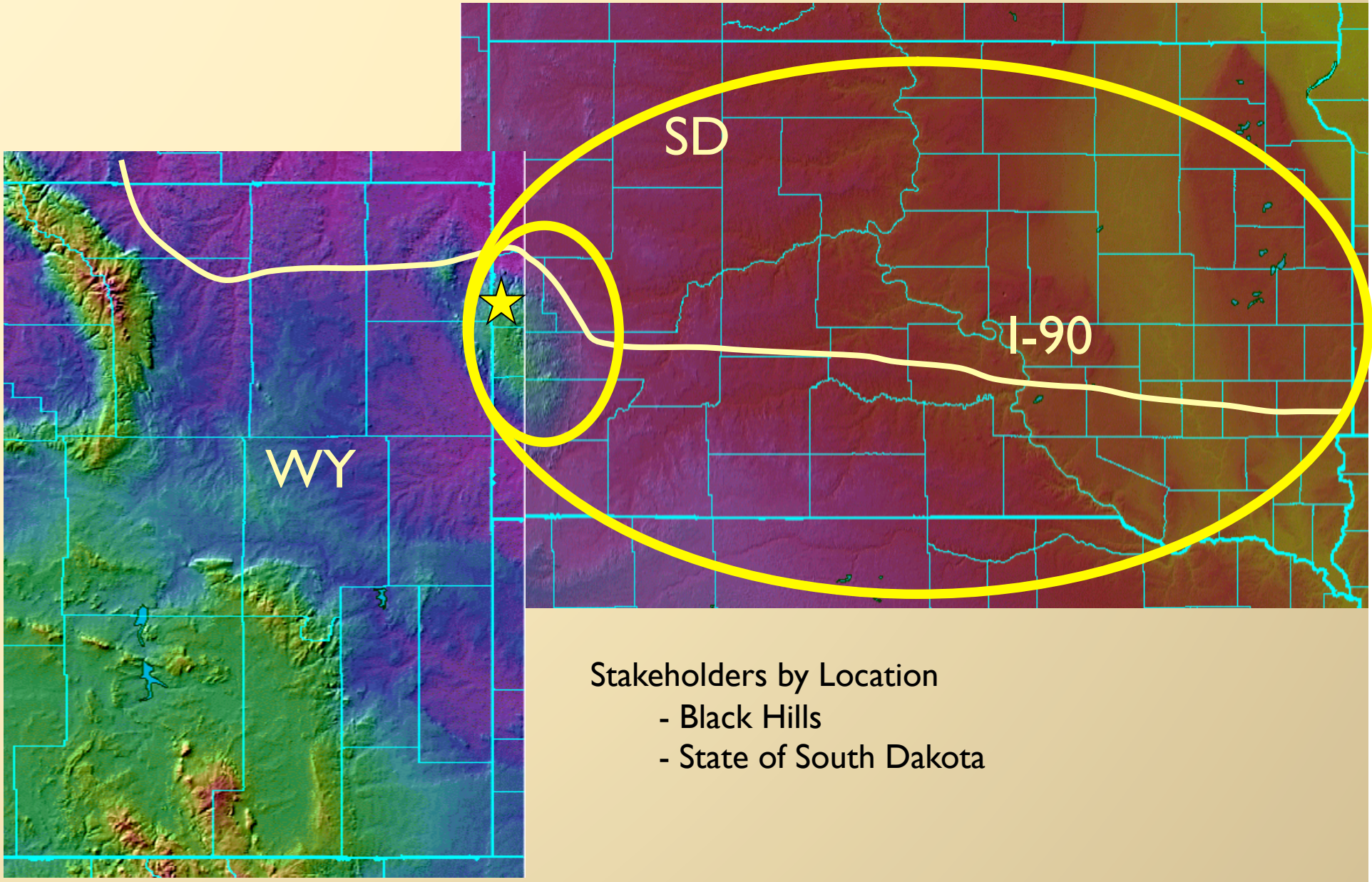


Engaging Stakeholders in Strategic Decisions

Image Credit: Zina Deretsky, NSF, 2007

Sanford Center for Science Education





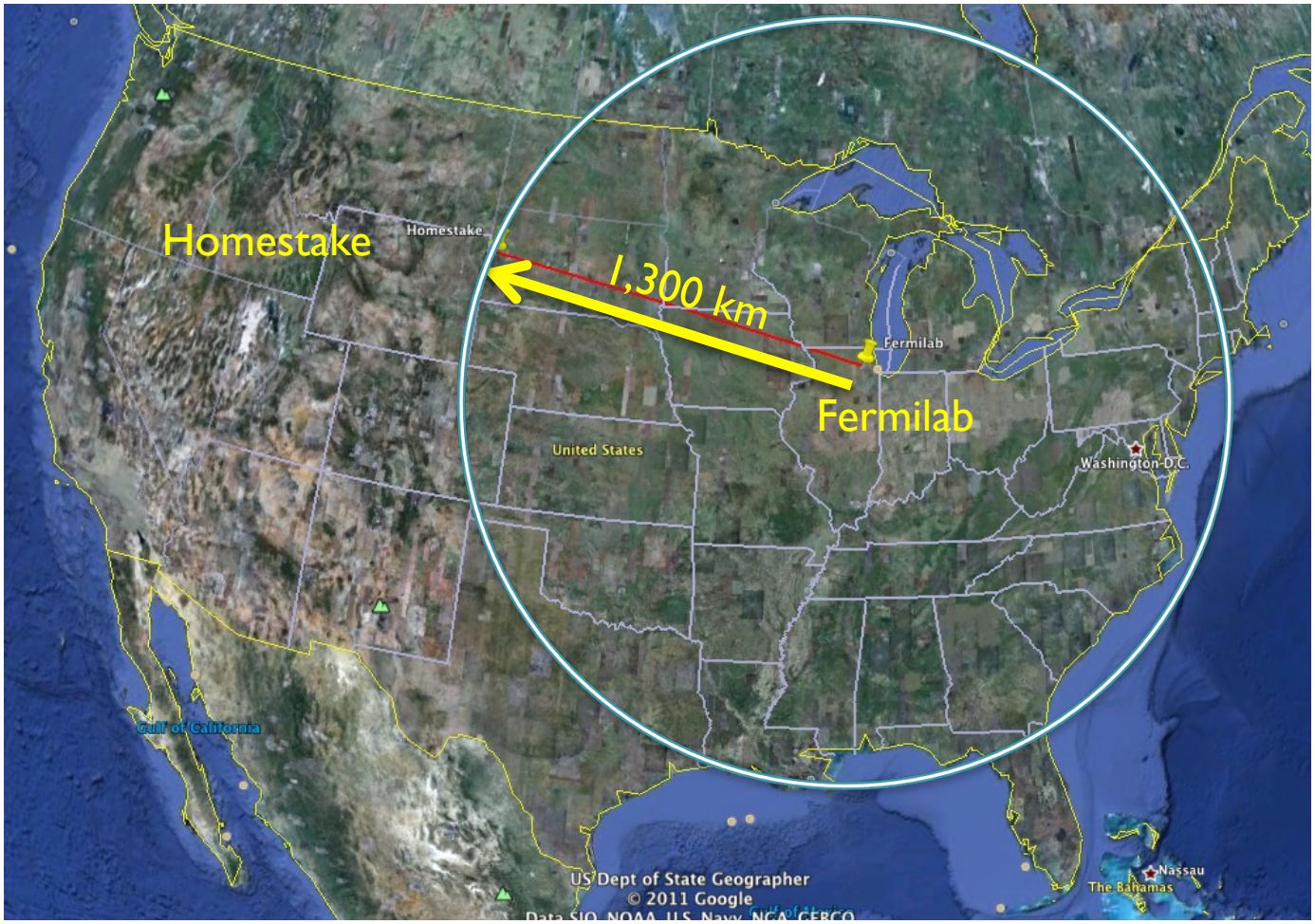
Stakeholders by Location

- Black Hills
- State of South Dakota

ASTC 2011

Adapted from the Color Landform Atlas of the U.S.

Neutrino beam from Fermilab – National Stakeholders



Audiences / Stakeholders

- K-12 students & teachers
- College and university faculty and students
- General public – local, regional, tourist
- Scientists and engineers across disciplines, across the country

Across all of the above: Special attention to engaging and serving those historically underrepresented within STEM disciplines – through on-site, off-site, and online programs

Stakeholder Engagement & Input

- Target market / audience research – surveys, interviews, focus groups, community forums
- Prototyping of education programs – designing, implementing, evaluating, refining
- Research and development of future programs, products, and services – strategic engagement of community members, regional and national experts

General Public/Tourist Findings (n = 1,210)

Interest in the following activities at the Sanford Center for Science Education

	Not at all interested	A little interested	Neutral	Interested	Very interested
Interactive science exhibits (like those found at a science center)	3%	10%	11%	50%	25%
Video-cams showing scientists at work underground	6%	10%	13%	50%	20%
Guided tours of facilities where scientists work	4%	7%	9%	51%	29%
Chance to meet/talk with a scientist or engineer	8%	10%	19%	39%	26%
Following underground laboratory research online (paper survey only, n=258)	15%	10%	26%	30%	20%

K-12 Educator Survey Preliminary Findings (n = 732)

Important Field Trip Considerations

	Percentage of Respondents Reporting Important or Very Important
Provides hands-on experiences for students	96%
Learning experience complements classroom curriculum	88%
Learning experience aligned with national or state standards	84%
Pre/Post visit teacher materials available on-line	77%
Pre/Post visit student materials available on-line	72%
Exhibits or displays change frequently	50%

23% Report not selecting field trip destinations that charge admission

58% Report funding field trips through school budget

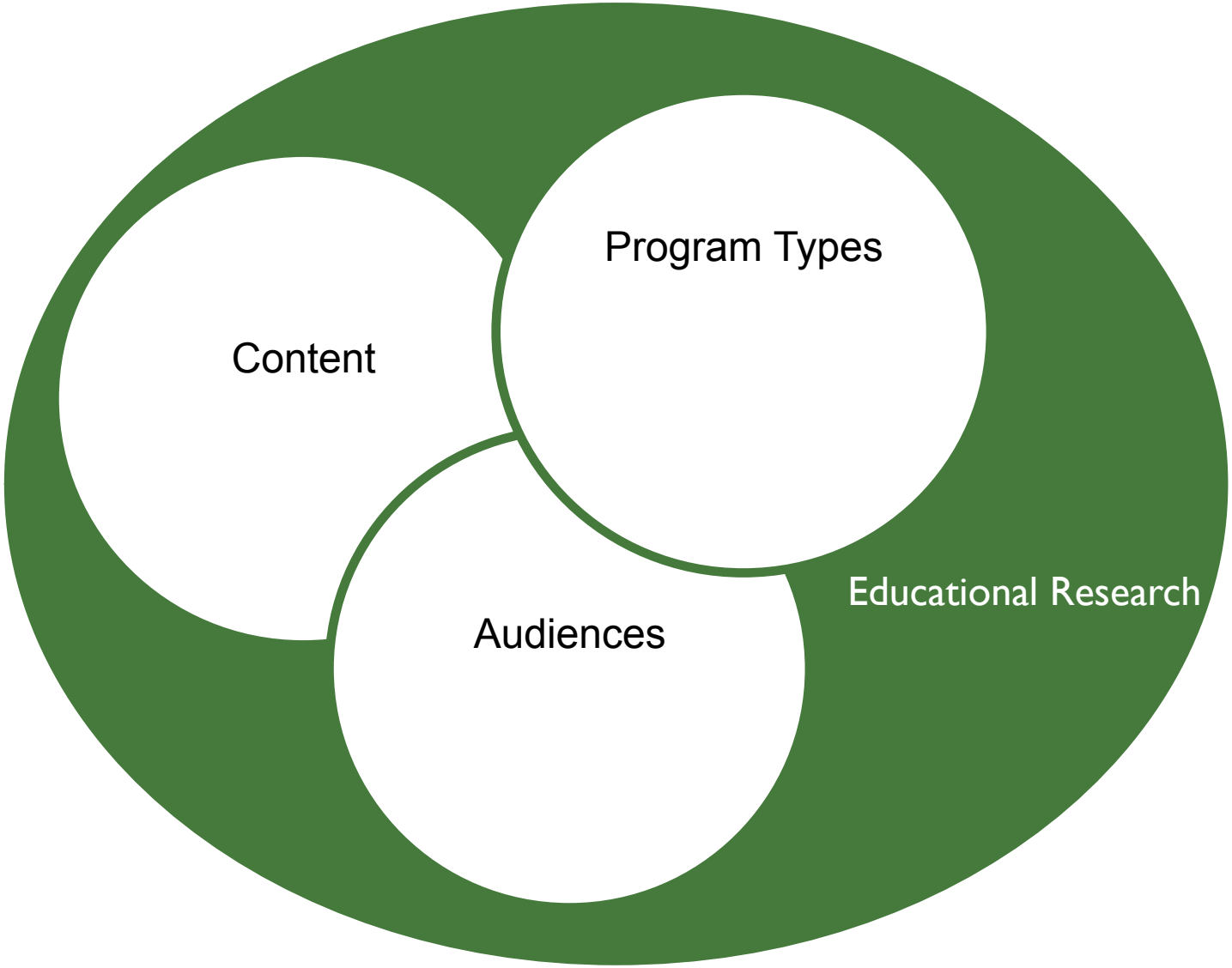
15% Report fundraising to pay for field trips

K-12 Educator Survey

Interest in Science/Engineering Themes (Top 12)

	Percentage of Respondents Reporting Interested or Very Interested
Cutting edge technology	76%
Life in extreme environments	71%
Science and engineering relevant to humans	70%
Gold mining at Homestake Mine	70%
Black Hills geology	68%
Science and engineering careers	68%
Nature of science and scientific processes	66%
Black Hills natural history and ecology	65%
Black Hills geography	64%
The culture of a working scientific community	64%
American Indian history and culture in the Black Hills	63%
Origins of the universe, matter and energy	58%

Facets of Education Program



Prototyping / Building capacity

Neutrino Day – an annual open house the second Saturday in July

Classroom visits – tours and onsite activities

Path Forward

- Continue implementing and refining programs – in service to and in collaboration with key stakeholders
- Continue testing ideas & gathering input through surveys, interviews, focus groups, community forums
- Community and expert engagement in future planning

Science + You

Creating a Great Partnership

SPONSORED BY:
Abbott Fund

KOHL CHILDREN'S MUSEUM

Overview

- Kohl Children's Museum of Greater Chicago opened in Glenview 2005.

Overview

- Designed to serve children ages 0-8, their families, caregivers and educators

Overview

- Feature 17 interactive exhibits plus 2 acres of outdoor exhibit space

Overview

- Award winning for universal design and silver LEED certification

Abbott, a global healthcare company, through the Abbott Fund, sponsored the *Cooperation Station* exhibit.

The decision to create an exhibit together:

KCM conducted research on the needs of children's museums with regard to traveling exhibits.

Key areas of concern

- **Flexibility of size**
- **Age appropriateness**
- **STEM content**

The Museum's strategic plan contained a goal to create a new exhibit based upon our research.

Abbott was the logical partner

- **They are a local company**
- **Have national and global presence**
- **Corporate representation and community involvement**
- **Are a company steeped in science**
- **Have contributed greatly to science learning through their science education programs designed for young children.**

It looked like a perfect match!

How did we do it?

Step 1: Met with the Abbott Fund to discuss a proposal and shared exhibit goals.

EXHIBIT GOALS

•To increase global appreciation for the value science brings to improving health.

•To immerse visitors in an interactive environment that encourages investigation, problem solving, analytical thinking and role play focused on the science of health.

•To increase awareness and understanding of the role science and scientists play in the health and wellness of children and adults throughout the world.

•To provide opportunities for visitors to interact with Abbott scientists through related programming.

Exhibit Flexibility

How did we do it?

- **Step 2: Using the exhibit goals and Museum design guidelines as platform interviewed and looked for a turn key company. Kramer Design was selected, paired up with Xhibits.**

How did we do it?

- **Step 3: Developed the ideas.**

We did NOT want to dumb down the science.
We wanted it to feel real.

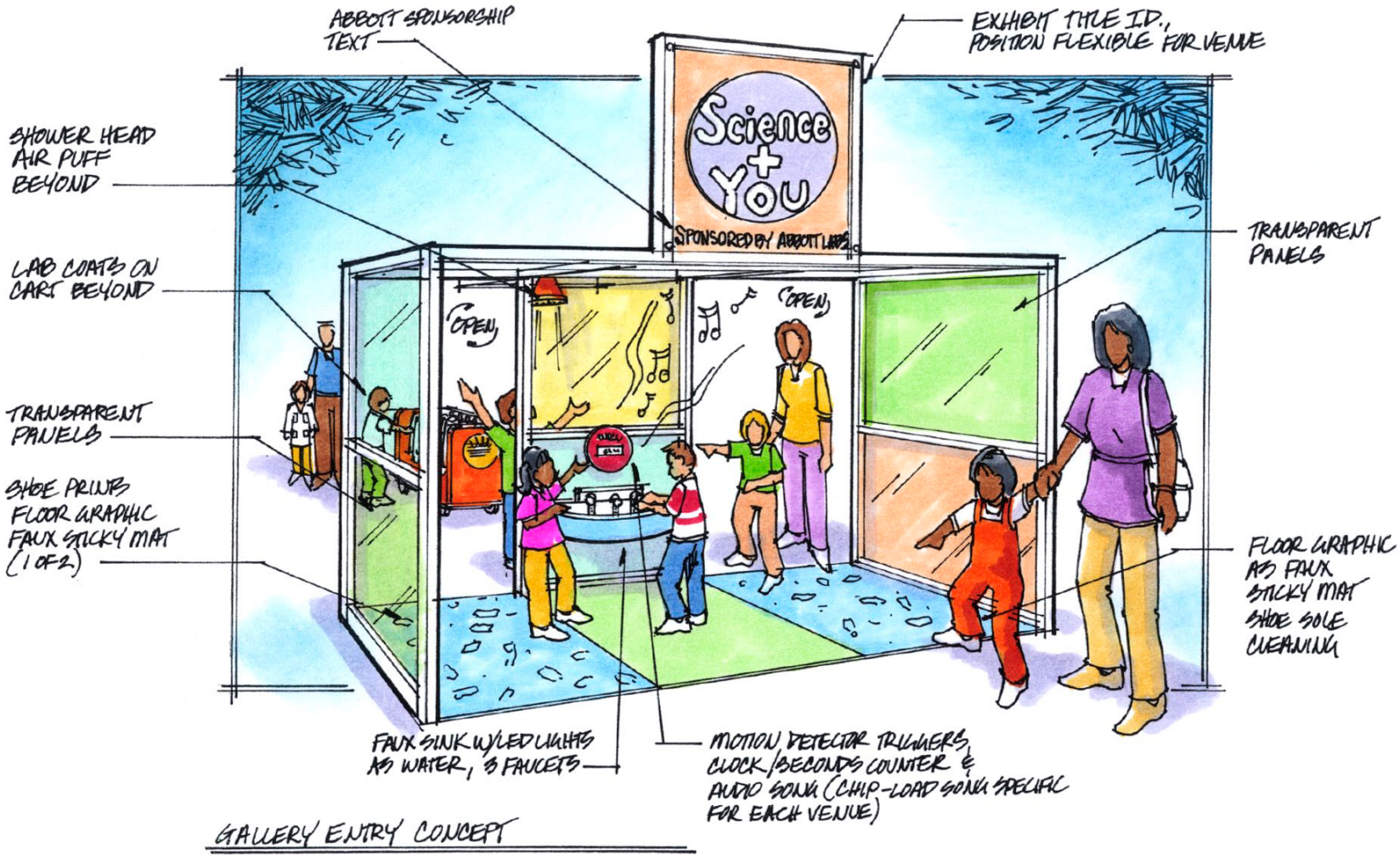
Held several charettes:

- **Abbott scientists**
- **Teachers**
- **Child development experts**
- **Members**

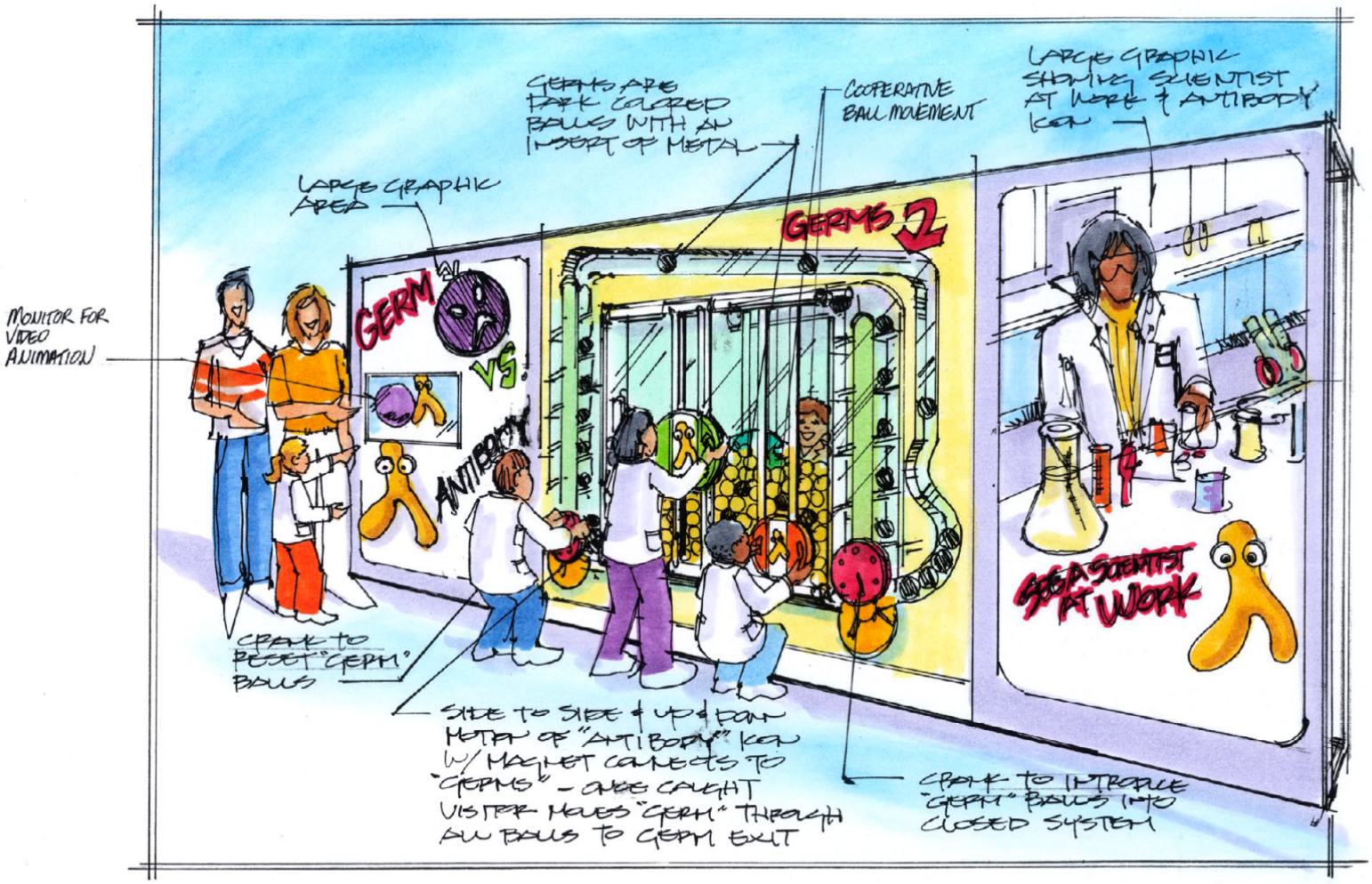
How did we do it?

Step 4: Continuous discussions and engagement with Abbott scientists, Abbott Fund team helped determine the focus on the science of health.

***Science + You* was created!**

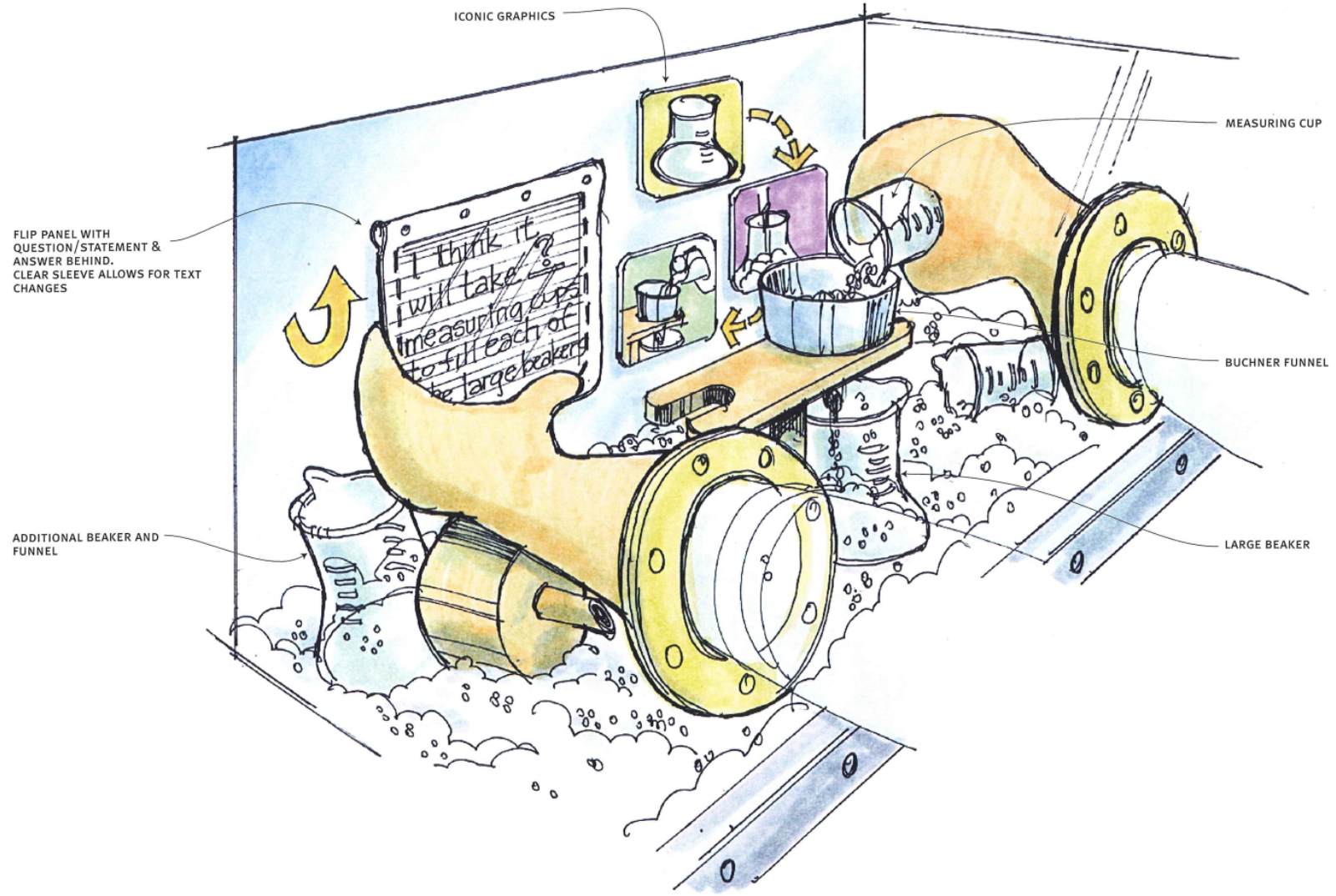


KOHL CHILDREN'S MUSEUM



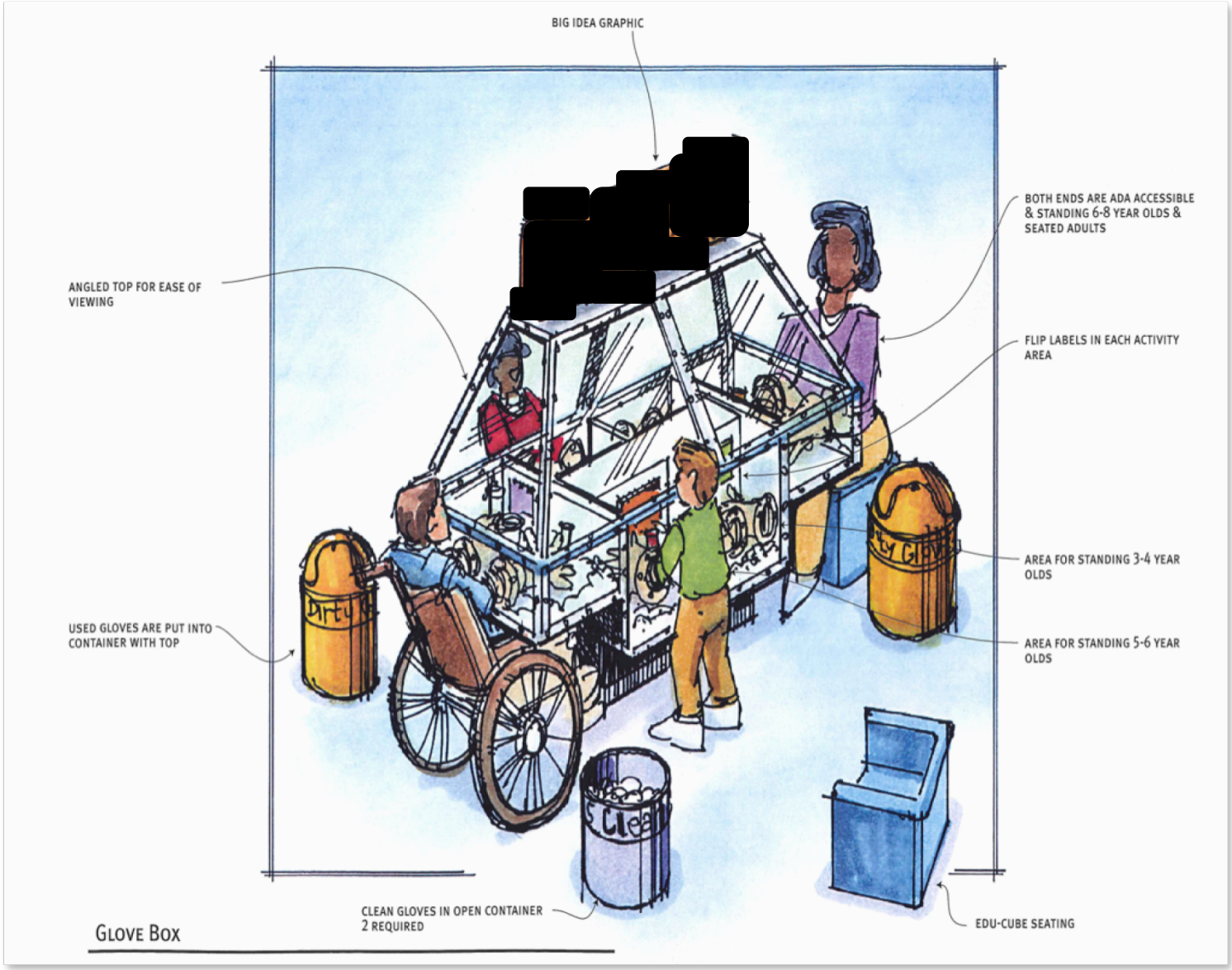
ANTIBODIES INVESTIGATION CONCEPT


BIG IDEA GRAPHIC
SECONDARY GRAPHIC, SLIP INTO FRAME (CHANGE PER VENUE)
LAB TABLE THEME
* FOUR POT STATIONS, TWO PER TABLE
TEST KITCHEN
TEST KITCHEN
PHOTOGRAPHS, PERMANENT GRAPHICS
INSTRUCTIONAL GRAPHIC
POT LID
TROUGH GRAPHIC
[redacted]



GLOVE BOX - DETAIL

KOHL CHILDREN'S MUSEUM


BIG IDEA GRAPHIC
[redacted]
ANGLED TOP FOR EASE OF VIEWING
BOTH ENDS ARE ADA ACCESSIBLE & STANDING 6-8 YEAR OLDS & SEATED ADULTS
FLIP LABELS IN EACH ACTIVITY AREA
AREA FOR STANDING 3-4 YEAR OLDS
AREA FOR STANDING 5-6 YEAR OLDS
USED GLOVES ARE PUT INTO CONTAINER WITH TOP
CLEAN GLOVES IN OPEN CONTAINER 2 REQUIRED
EDU-CUBE SEATING
GLOVE BOX

How did we do it?

Step 5: Abbott Fund enabled the KCM team to visit Abbott scientists in their labs, which introduced the Museum to their passion for science.

How did we do it?

Step 6: A learning matrix was created. This matrix drove the content of the exhibit.

Exhibit Component	SCIENCE PROCESS SKILLS							
	Observing	Measuring	Inferring	Classifying	Experimenting	Predicting	Analyzing	Communicating
Entryway:								
Handwashing	■		■			■		■
Floor Mat	■		■			■		■
Sterilizer/air puff	■		■			■		■
Lab Coats/rack	■		■					■
Exhibit Elements:								
Test Kitchen	■		■	■	■	■	■	■
Play Soup	■	■	■	■				■
Antibodies/Germs	■		■	■	■	■		■
Glove Box	■	■	■		■	■	■	■
Stir Station:								
Magnet Stirrer	■		■		■	■	■	■
V-Tube	■		■		■	■	■	■
Mixing Bowl	■		■		■	■	■	■
Separation Station								
Centrifuge	■		■		■	■	■	■
Sort By Hand	■		■		■	■	■	■
Sieve	■		■		■	■	■	■
Microscope/Slides	■		■			■	■	■
Balanced Lifestyle	■		■	■	■	■	■	■
Peg Board	■		■	■	■	■	■	■
Poster Design Demo	■			■				■

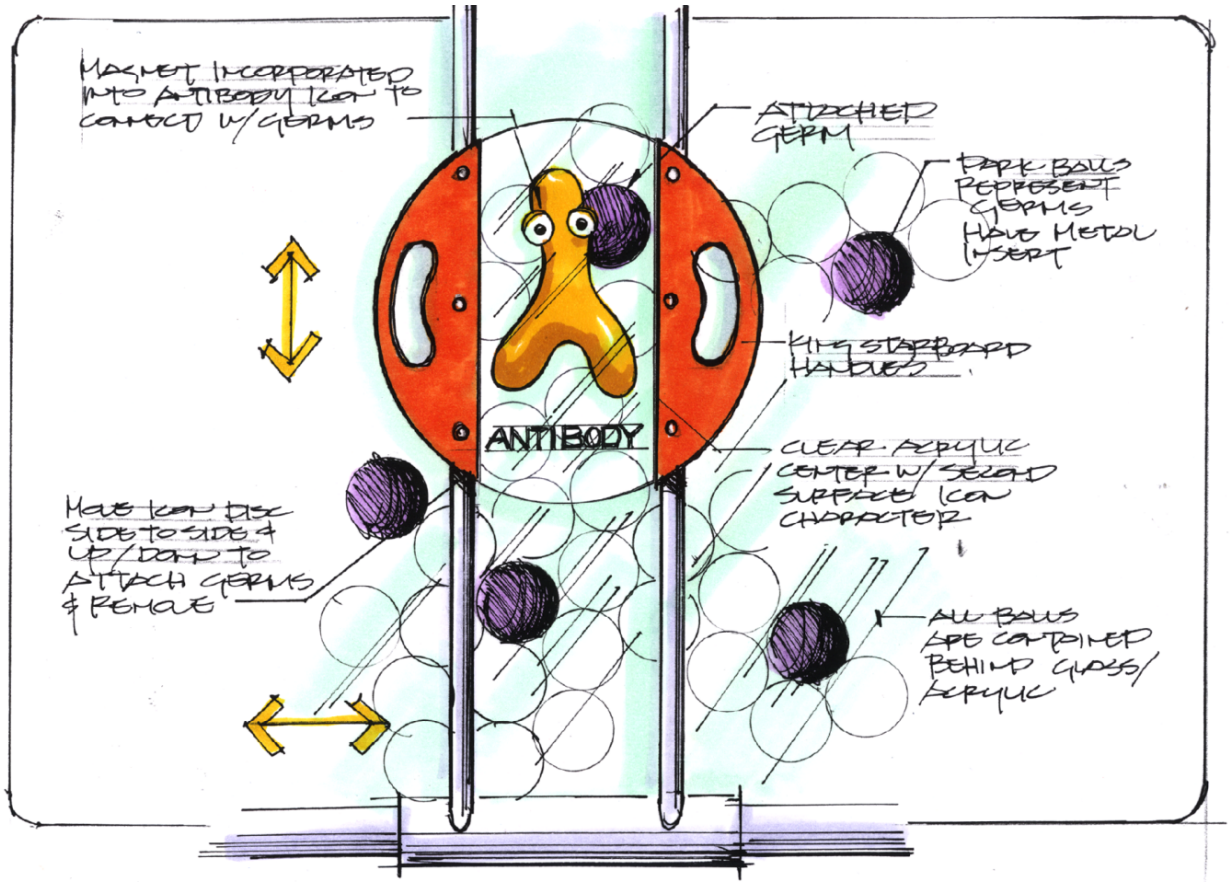
How did we do it?

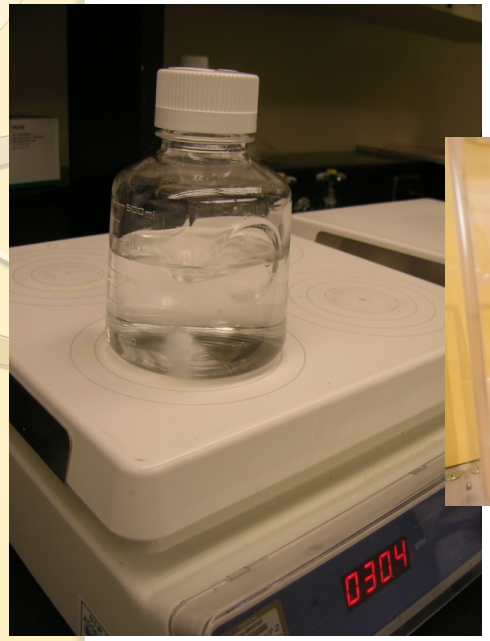
Step 7: Exhibit concepts and story line developed.

Abbott scientists helped connect components to their tools and work.

How did we do it?

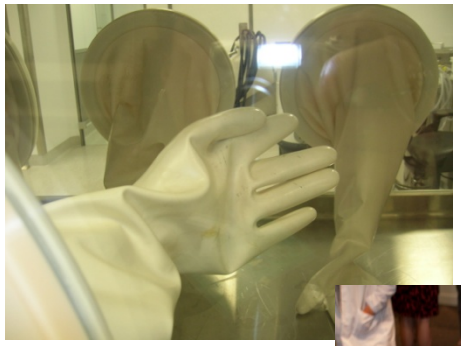
- **Step 8: Abbott scientists gave ideas to demystify some concepts and expand upon others.**





Magnet mixer

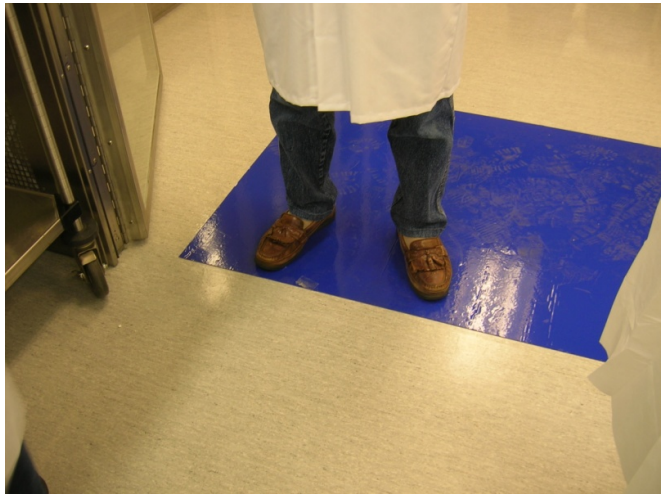
Magnet Mixer in exhibit



Real Glove Box

Glove box in exhibit

Floor mat in exhibit



Floor mats

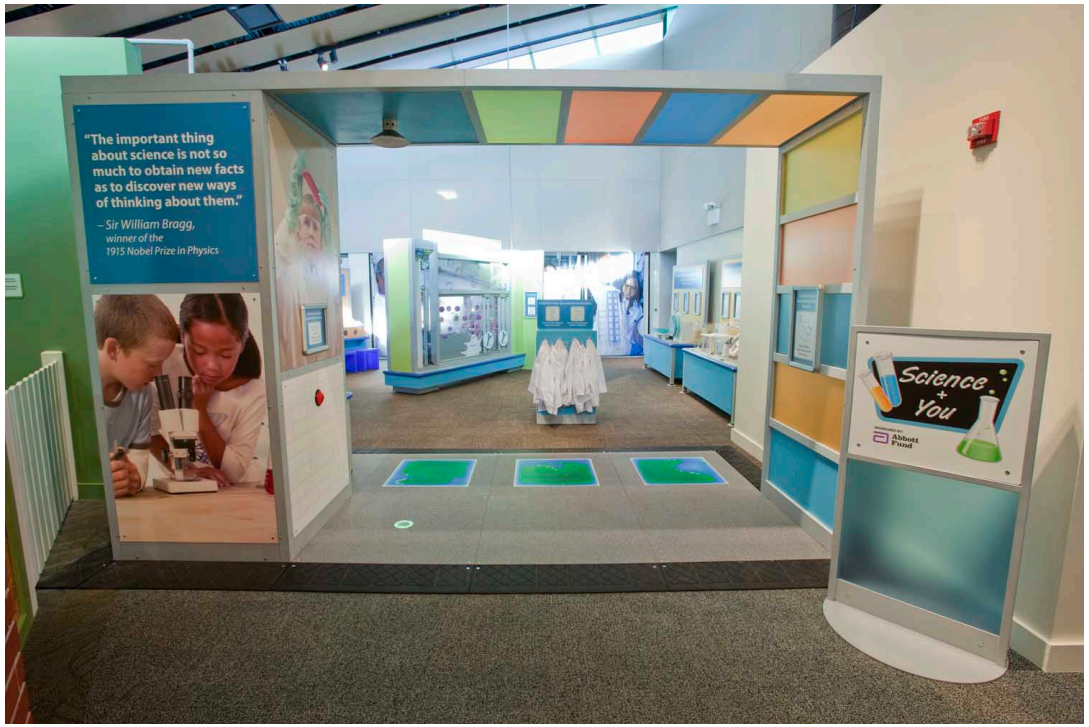
It wasn't all fun and games…there were challenges:

- **Schedules and timelines**
- **Terminology: translating technical terms into language children would understand**
- **Finding common ground**
- **Language**
- **Scientists separate from physician advisors**
- **Scientists understanding the developmental level of young children**
- **Changes to exhibit traveling schedule**

Pill Machine

With constant input and discussion, *Science + You* emerged.

An exhibit where children are immersed in the role of being a scientist and learning about healthy lifestyles.



Taking the exhibit to another dimension

The exhibit is supported by educational activities for teachers and parents.

At each location, Abbott scientists will come to engage the children in real life experiments.

KOHL CHILDREN'S MUSEUM

Preliminary feedback:

In general visitors:

- **Understood the overarching concepts**
- **Found information and activities interactive and enjoyable**
- **Children expressed greater interest and understanding of what scientists do**
- **Scientists impressed with how their work was presented to children**

Lessons learned:

- **Confirm and agree to very early on critical decision points.**
- **Be prepared for a greater time commitment on the part of the Museum**

After KCM, plans are for the exhibit to travel to:

San Francisco
Washington DC
Germany

Plans are being developed for possible travel to:

Brazil
India
Mexico

Stakeholders in Organizational Planning

Charlie Trautmann

Sciencenter, Ithaca, NY

October 17, 2011


Heureka, The Finnish Science Centre 20th March


Richard B. Fischer

MISSION: WHAT WE DO


Richard B. Fischer
1919 - 2005
"I want kids, when they see a dead tree with a hole in it, to not knock it down but instead say: 'Hey, maybe a chickadee lives there.'"
Naturalist, conservationist, and educator who, as the first science editor of Ranger Rick magazine, helped
millions of young
to the wonders
world.

“To inspire excitement for science through interactive exhibits and programs that engage, educate, and empower”

VISION:
WHERE WE'RE GOING


MLS CAMPS

“A world in which every young person is empowered to use science in shaping a better future”

POWER OF UNIFIED MISSION & VISION

- **Help everyone stay on course**
- **Promote consistent decisions**
- **Build esprit de corps**

REMEMBER:
CONDITIONS CHANGE!


Aldo Leopold
John Bartram
Luther Burbank
Lee Gim Gong
Raymond C. Ewell
Georgine Agricola
David Starr Jordan
Anna Botsford Comstock
Margaret Lawrence
Beckmann Fuller
Elizabeth Knapp
DELL

COMMON PROBLEMS IN DECISION MAKING

- **Bottlenecks**
- **Consistency**
- **Déjà vu**

SOLUTION: SHARED DECISION GUIDELINES

DECISION GUIDELINES - 1

1. Who should be involved in making the decision (and how)?
2. What is the primary goal?
3. Does it advance our mission, vision, values, & strategic plan?
4. Are we passionate about it?

DECISION GUIDELINES - 2

5. Will it enhance the experience of our audience?
6. Will it enhance our finances through revenue or goodwill?
7. Will it enhance the Sciencenter's reputation or community's quality of life?
8. Do we have staff, space, funds, & time to implement it properly?

DECISION GUIDELINES - 3

9. Do the potential rewards outweigh the risks?
10. How does it fit in with other priorities & is this the best time to do it?
11. Is it sustainable, or does it advance sustainability?
12. If collaborative: is this person/group we want to work with?

CLARIFY THE PROCESS!

4 WAYS TO MAKE A DECISION

- **Command**
- **Consult**
- **Consensus**
- **Vote**

SUMMARY

- Identify your stakeholders
- Create a crisp mission/vision
- Clarify decision making

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Full Presentation Posted At:
www.davidheil.com