ATE Evaluation Practice: Lessons from the Field

Preconference workshop at the ATE PI Conference
October 22, 2014

EvaluATE
Evaluation Resource Center for advanced technological education

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EvaluATE Mission

To promote the goals of the ATE program by

- partnering with ATE projects and centers to strengthen the program's evaluation knowledge base
- expanding the use of exemplary evaluation practices
- supporting the continuous improvement of technician education throughout the nation
Presenters

Lori Wingate
EvaluATE, Western Michigan University

Candiya Mann
Social and Economic Sciences Research Center, Washington State University

Bruce Nash
DNA Learning Center, Cold Spring Harbor Laboratory

Amy Nisselle
DNA Learning Center, Cold Spring Harbor Laboratory

Sources for info on evaluation

STEM Learning and Research Center: stelar.org
Sources for info on evaluation

Favorite Books

- *Essentials of Utilization-Focused Evaluation* by Michael Quinn Patton
- *Evaluation Theory, Models, & Applications* by Daniel L. Stufflebeam, Chris L. Coryn
- *Evaluation Methodology Basics* by E. Jane Davidson
- *Program Evaluation: Alternative Approaches and Practical Guidelines* by Fitzpatrick, Sanders, & Worthen

Sources for info on evaluation

American Evaluation Association: eval.org
Sources for info on evaluation

AEA365.org

**EvaluATE Activities**

- 4-6 webinars per year
- Quarterly newsletter
- Annual survey of ATE grantees
- Annual workshop at ATE PI conference
- Website

www.evalu-ate.org
Workshop Materials

Folders
Slides
Activity materials
Feedback survey
Agenda

<table>
<thead>
<tr>
<th>Time</th>
<th>Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>1:00</td>
<td>Welcome, introductions, and ice breaker</td>
</tr>
<tr>
<td>1:20</td>
<td>Lesson from the Field 1: Managing multi-site data collection (Candiya)</td>
</tr>
<tr>
<td>1:40</td>
<td>Q&amp;A</td>
</tr>
<tr>
<td>1:50</td>
<td>Lesson from the Field 2: Following up with professional development participants (Amy &amp; Bruce)</td>
</tr>
<tr>
<td>2:05</td>
<td>Q&amp;A</td>
</tr>
<tr>
<td>2:15</td>
<td>Break</td>
</tr>
<tr>
<td>2:30</td>
<td>Idea Exchange: ATE evaluation challenges and solutions</td>
</tr>
<tr>
<td>2:50</td>
<td>Activity 1: Multisite data collection (Lori)</td>
</tr>
<tr>
<td>3:15</td>
<td>Activity 2: Planning follow-up (Lori)</td>
</tr>
<tr>
<td>3:40</td>
<td>Closing comments/Q&amp;A, feedback survey</td>
</tr>
<tr>
<td>4:00</td>
<td>Adjourn</td>
</tr>
</tbody>
</table>

Managing Multi-Site Data Collection

CANDIYA MANN
SENIOR RESEARCH MANAGER
SOCIAL & ECONOMIC SCIENCES RESEARCH CENTER
WASHINGTON STATE UNIVERSITY
MATE Center: ROV Competitions

Goals

Use ROV competition as an engaging platform to...

- Develop STEM skills
- Stimulate interest in marine technical careers
- Facilitate interactions between students, faculty, and industry professionals
Competition Components

POOL MISSION

Competition Components

ENGINEERING PRESENTATION
Competition Components

TECHNICAL REPORT & COMPANY SPEC SHEET

Georgia Robotics Technologies

Georgia Institute of Technology
Savannah, Georgia

Chief Executive Officer: Michael Tan
Chief Operating Officer: Michael Tan

Program Director: Innovation Systems Co-Design
Michael Bunch
Evelyn Ainslie

Technical Director: Patrick Lippia

2011 MATE International Competition

Competition Components

POSTER & MEDIA OUTREACH

S.U.A.E.

Southwest Underwater Robotics Engineering
Copiah-Lincoln Community College
Moss Point, MS

Description of SEAWOLF II

www.evalu-ate.org
Some numbers for you...

23 regionals lead to 1 culminating competition
4 competition classes
Grades 4 – 16
In 2014...
  ◦ 580 teams
  ◦ ~2,300 students
  ◦ ~600 teachers
  ◦ ~1,000 industry
**ATE Evaluation Practices: Lessons from the Field**

**ATE PI Conference 2014**

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**MATE Competition Network**

- MATE Regional Competitions
- MATE Regions in Development

23 Regions
Domestic & international
Regional coordinators: unpaid

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**Complementary Activities**

- Summer Institutes
- Regional workshops
- 800-page textbook
- Curriculum + videos
- ROV kits
- At-sea internships

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[www.evalu-ate.org](http://www.evalu-ate.org)
Selected Evaluation Questions

How does the ROV program affect...

Students’
- Awareness of STEM careers?
- Intention to pursue STEM career?
- Interest in studying STEM?
- STEM knowledge and skills?
- 21st Century skills?

Teachers’ confidence facilitating STEM learning experiences?

Parents’ support of their children’s interest in STEM careers?
Selected Evaluation Questions

<table>
<thead>
<tr>
<th>Activity</th>
<th>Tools</th>
</tr>
</thead>
<tbody>
<tr>
<td>Workshops</td>
<td>Pre-post surveys &amp; knowledge tests</td>
</tr>
<tr>
<td>Summer Institutes</td>
<td>Post-survey &amp; 9-month follow-up</td>
</tr>
<tr>
<td>Competitions</td>
<td>Post-surveys, interviews, observations, coordinator reports</td>
</tr>
</tbody>
</table>

In development...

Pilot study: longitudinal follow-up with econometric models

Post-Competition Surveys

<table>
<thead>
<tr>
<th>Survey</th>
<th>Languages</th>
<th>Must Administer?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students</td>
<td>English/Spanish</td>
<td>Required</td>
</tr>
<tr>
<td>Teachers</td>
<td>English</td>
<td>Required</td>
</tr>
<tr>
<td>Parents</td>
<td>English/Spanish</td>
<td>Optional</td>
</tr>
<tr>
<td>Judges</td>
<td>English</td>
<td>Optional</td>
</tr>
</tbody>
</table>
Data Collection Challenges

**OBSTACLES**
- 23 sites
- Managed by 23+ coordinators
- Variety of venue types
- Multiple surveys

**CHALLENGES**

1. **Motivation**: How do you motivate others to administer surveys?
2. **Process**: How do you create an EASY process?

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**Year 1 (What not to do)**

<table>
<thead>
<tr>
<th>Type</th>
<th>2010</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coordinated</td>
<td>Coordinators</td>
</tr>
<tr>
<td>Printed</td>
<td>Coordinators</td>
</tr>
<tr>
<td>Returned</td>
<td>Coordinators</td>
</tr>
<tr>
<td>Data entered</td>
<td>MATE</td>
</tr>
<tr>
<td>Coverage</td>
<td>10 sites</td>
</tr>
</tbody>
</table>

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www.evalu-ate.org
Year 1 Lessons Learned

**Downsides**
- Spotty coverage
- Burden on coordinators
- Multiple datasets
- Slow data entry

**Upsides**
- Inexpensive

**Next steps...**
- How to make data collection easy for the coordinators?

Year 2 Approach

<table>
<thead>
<tr>
<th></th>
<th>2010</th>
<th>2011</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Type</strong></td>
<td>Paper &amp; Survey Monkey</td>
<td>Scannable</td>
</tr>
<tr>
<td><strong>Coordinated?</strong></td>
<td>Coordinators</td>
<td>MATE</td>
</tr>
<tr>
<td><strong>Printed?</strong></td>
<td>Coordinators</td>
<td>MATE (campus)</td>
</tr>
<tr>
<td><strong>Returned?</strong></td>
<td>Coordinators</td>
<td>MATE sends box &amp; UPS label</td>
</tr>
<tr>
<td><strong>Data entered?</strong></td>
<td>MATE</td>
<td>Scanned</td>
</tr>
<tr>
<td><strong>Coverage</strong></td>
<td>10 sites</td>
<td>17</td>
</tr>
</tbody>
</table>
Year 2 Lessons Learned

**Upsides**
- Better coverage
- Single, clean dataset
- Fast data entry

**Downsides**
- More $$: printing & mailing
- One-time cost: scannable form set-up
- Time-consuming to coordinate

**Next Steps...** How to simplify survey distribution?

### Year 3 Approach

<table>
<thead>
<tr>
<th>Year</th>
<th>Type</th>
<th>Coordinator</th>
<th>Printed?</th>
<th>Returned?</th>
<th>Data entered?</th>
<th>Coverage</th>
</tr>
</thead>
<tbody>
<tr>
<td>2010</td>
<td>Paper &amp; Survey Monkey</td>
<td>Coordinators</td>
<td>Coordinators</td>
<td>MATE sends box &amp; UPS label</td>
<td>MATE</td>
<td>10 sites</td>
</tr>
<tr>
<td>2011</td>
<td>Scannable</td>
<td>MATE</td>
<td>MATE (campus)</td>
<td>Kinko's box</td>
<td>Scanned</td>
<td>17</td>
</tr>
<tr>
<td>2012</td>
<td>Scannable</td>
<td>MATE</td>
<td>Local Kinko's</td>
<td>MATE: FedEx label</td>
<td>Scanned</td>
<td>21</td>
</tr>
</tbody>
</table>
Kinko’s Process

1. Coordinators identified a local Kinko’s
2. MATE emailed files and printing instructions to Kinko’s
3. MATE mailed pre-printed FedEx labels to coordinators
4. Kinko’s printed surveys and provided an empty FedEx box
5. Coordinators picked up the surveys, administered them, and returned the completed surveys via FedEx

Year 3 Lessons Learned

Upsides
- Eliminated shipping time/cost to coordinators

Downsides
- Increased printing costs
- Possible miscommunication with Kinko’s
- Time consuming to manage communication

Next Steps... How to simplify the coordination?
### Year 4 Approach

<table>
<thead>
<tr>
<th>Type</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
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</thead>
<tbody>
<tr>
<td>Coordinated?</td>
<td>Coordinators</td>
<td>MATE</td>
<td>MATE</td>
<td>Excel form: BaseCamp</td>
</tr>
<tr>
<td>Coordinated?</td>
<td>Coordinators</td>
<td>MATE (campus)</td>
<td>Local Kinko’s</td>
<td>Evaluator</td>
</tr>
<tr>
<td>Printed?</td>
<td>Coordinators</td>
<td>MATE sends box &amp; UPS label</td>
<td>Kinko’s: box</td>
<td>Evaluator sends box &amp; UPS label</td>
</tr>
<tr>
<td>Returned?</td>
<td>Coordinators</td>
<td>MATE sends box &amp; UPS label</td>
<td>Kinko’s: box</td>
<td>Evaluator sends box &amp; UPS label</td>
</tr>
<tr>
<td>Data entered?</td>
<td>MATE</td>
<td>Scanned</td>
<td>Scanned</td>
<td>Scanned</td>
</tr>
<tr>
<td>Coverage</td>
<td>10 sites</td>
<td>17</td>
<td>21</td>
<td>21</td>
</tr>
</tbody>
</table>

### Year 4 Lessons Learned

**Upsides**
- Better quality control
- Less expensive than Kinko’s or campus
- Less administrative burden on MATE staff

**Downsides**
- Still some coordination time required

**Next Steps...**
- How to simplify coordination?
- How to eliminate shipping to international sites?
Year 5 Approach

<table>
<thead>
<tr>
<th></th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>Paper &amp; Survey Monkey</td>
<td>Scannable</td>
<td>Scannable</td>
<td>Scannable</td>
<td>Scannable &amp; Online option</td>
</tr>
<tr>
<td>Coordinated?</td>
<td>Coordinators</td>
<td>MATE</td>
<td>MATE</td>
<td>Excel form: BaseCamp</td>
<td>EmailMeForm (<a href="http://www.EmailMeForm.com">www.EmailMeForm.com</a>)</td>
</tr>
<tr>
<td>Printed?</td>
<td>Coordinators</td>
<td>MATE (campus)</td>
<td>Local Kinko’s Evaluator</td>
<td>Evaluator</td>
<td>Evaluator sends box &amp; UPS label</td>
</tr>
<tr>
<td>Returned?</td>
<td>Coordinators</td>
<td>MATE sends box &amp; UPS label</td>
<td>Kinko’s: box MATE: FedEx label</td>
<td>Evaluator sends box &amp; UPS label</td>
<td>Scanned &amp; online in same dataset 16</td>
</tr>
<tr>
<td>Data entered?</td>
<td>MATE</td>
<td>Scanned</td>
<td>Scanned</td>
<td>Scanned</td>
<td></td>
</tr>
<tr>
<td>Coverage</td>
<td>10 sites</td>
<td>17</td>
<td>21</td>
<td>21</td>
<td>16</td>
</tr>
</tbody>
</table>

Year 5 Lessons Learned

**Upsides**
- Simplified coordination
- Eliminated international shipping

**Downsides**
- Difficult for int’l sites without computers
Year 5 Lessons Learned

Next steps...

◦ How to balance cost and accessibility for international without computers onsite?
◦ Time for another partner meeting

Motivation

Goal: Make coordinators co-owners in evaluation

Partners’ meeting: presented...

1. Evaluation plan
2. Overall results
Did the teachers gain confidence facilitating STEM learning experiences through the workshops?

“How comfortable are you facilitating STEM learning experiences for students?”

**Pre**
- Very uncomfortable: 2%
- Somewhat uncomfortable: 2%
- Neutral: 9%
- Somewhat comfortable: 45%
- Very comfortable: 40%
- Don’t know: 2%

**Post**
- Very comfortable: 54%
- Somewhat comfortable: 44%
- Neutral: 1%

“I feel so much more comfortable coaching because of the support from MATE.”

“The Evaluation and You”

Shared all survey forms
Trained how/when to implement each

<table>
<thead>
<tr>
<th>Data Collection Tools</th>
<th>Timing, Tips and Other Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Teacher/Mentor Workshops: Pre-Surveys &amp; Post-Surveys</td>
<td>At your teacher/mentor workshops: administer the pre-survey first thing, before any instruction. Administer the post-survey at the end of the training. These are administered later on at the introductory workshop. If they are used at subsequent workshops, please separate those surveys and let me know so I can analyze those separately.</td>
</tr>
<tr>
<td>Competition Surveys: Student Survey Teacher/Mentor Survey Parent/Family Survey</td>
<td>There are 3 separate competitive surveys: 1) students, 2) faculty/teachers, and 3) parents/family. Questions: The surveys need to be administered AT THE COMPETITION or other culminating FEST event please. Print/Scan: Student and faculty surveys are available in print/scan versions on-site the week. If you choose to administer via file, computer with internet access need to be available at the competition. Incentives: Some regions use incentives to motivate people to complete the surveys, such as it didn’t of fixed. The use of survey incentives is entirely up to you, but please let me know if you do use them, as I’d like to mention it in the report. Parents who mentor teams: In this case, they are welcome to complete both the parent survey and the...</td>
</tr>
</tbody>
</table>
“The Evaluation and You”

Provided their region’s results
Discussed how to use results...
- Improve competition
- Recruit students, teachers, administrators, sponsors
- Use in PR, grant applications
- Create “highlights” sheets for events & conferences

Acknowledgements

Students
Parents
Teachers
Judges
Coordinators
MATE Staff
NSF
Developing Leaders in Biosciences:
Evaluating an ATE Biotechnology Education Program

Bruce Nash, Assistant Director for Science
Amy Nisselle, Multimedia & Evaluation Manager

Genomic Approaches in Biosciences

Aim
Strengthen biotech instruction by training educators to implement experiments integrating four major technologies of the genome era

1. PCR
2. DNA sequencing
3. RNA interference
4. Bioinformatics
Genomic Approaches in Biosciences

Collaboration
- DNA Learning Center
- Bio-Link careers resources
- 12 community colleges

Week-long summer educator workshops
- Original grant: 2011-13
- Extension: 2013-15 (“train the trainer”)

Curriculum
- Theoretical, laboratory, and computer technology materials
- Practical advice on classroom management
- Career exploration

Evaluation Objectives

1. What are the teacher impacts of the program on:
   a) confidence to teach program curricula?
   b) Implementation/classroom behavior?

2. What are the student impacts of the program in terms of:
   a) experiences of student-centered research and learning?
   b) preparation for careers in biotechnology?

3. What are the barriers and facilitators to program implementation (teacher, student, institution, other)?
Evaluation Methods

**Quantitative**
Representative: what, who, where, when

Single time point?

**Qualitative**
In-depth: why, how

Ongoing?

Mixed Methods

Combines aspects of both quantitative and qualitative
Provides breadth and depth of understanding (but requires more time and varied skills)

Often two-step process

1. Focus groups with stakeholders (e.g., teachers) to identify key issues
2. Survey of key issues sent to wider sample

1. Surveys to broad population to highlight key issues
2. Focus groups / classroom observations to investigate key issues in more depth
Methods Matrix for Teacher Impact

<table>
<thead>
<tr>
<th>Data collection tool</th>
<th>Evaluation Objective</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Teacher confidence</td>
<td>Pre-workshop survey</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Post-workshop survey</td>
</tr>
<tr>
<td>Follow-up survey (12 mo)</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Long-term case study (18 mo)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Classroom observation</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Teacher interview</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Student focus group</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Change in Confidence: Labs

“How confident do you currently feel to teach the following lab methods?”

<table>
<thead>
<tr>
<th>Lab Method</th>
<th>0%</th>
<th>20%</th>
<th>40%</th>
<th>60%</th>
<th>80%</th>
<th>100%</th>
</tr>
</thead>
<tbody>
<tr>
<td>RNA interference</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Classify organisms</td>
<td></td>
<td></td>
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<td></td>
<td></td>
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<tr>
<td>Sequence DNA</td>
<td></td>
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<tr>
<td>PCR</td>
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<td></td>
<td></td>
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<tr>
<td>Isolate DNA</td>
<td></td>
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</tr>
</tbody>
</table>
Change in Confidence: Bioinformatics

“How confident do you currently feel to teach the following bioinformatics methods?”

<table>
<thead>
<tr>
<th>Bioinformatics Method</th>
<th>Pre, n=260</th>
<th>Post, n=245</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gene predictors</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Phylogenetic trees</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Multiple alignments</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Homology searches</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Genome browsers</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Implementation

“To date, how have you actually used the workshop materials or DNA Subway?” (n=98)

<table>
<thead>
<tr>
<th>Activity</th>
<th>0%</th>
<th>20%</th>
<th>40%</th>
<th>60%</th>
<th>80%</th>
<th>100%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Resource for background information</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Resource for class materials</td>
<td></td>
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<td></td>
<td></td>
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<tr>
<td>Resource for lab protocols</td>
<td></td>
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<tr>
<td>Resource for student projects</td>
<td></td>
<td></td>
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<tr>
<td>Introduce new topic</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Introduce new unit or course</td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Introduce new computer lab</td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Share ideas/materials with other teachers</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Train other teachers in labs</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Train other teachers in bioinformatics</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Did not use</td>
<td></td>
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</tr>
</tbody>
</table>
Qualitative Data

“Students have 2 weeks that incorporate isolating their taste bud receptor as part of a larger lab report and investigation of genetic variation within a population... It incorporates both the biotechnology along with literature research, classical Mendelian inheritance of single traits and Hardy-Weinberg predictions.”

Teacher, 12mo f-up survey

“Biotech is the only [class] where we’ve learnt stuff that we can apply when we get a job... where I feel a little more confident in that, ‘Oh, I can do this in a lab.’”

Student, long-term case study focus group

Challenge: Survey Response Rates

<table>
<thead>
<tr>
<th></th>
<th>Pre-survey (at workshop)</th>
<th>Post-survey (at workshop)</th>
<th>12mo follow-up survey (e-mail)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Response Rate</td>
<td>100%</td>
<td>95%</td>
<td>63%</td>
</tr>
</tbody>
</table>

www.evalu-ate.org
Solution: Dillman Method – 3 Strikes

<table>
<thead>
<tr>
<th></th>
<th>First email</th>
<th>Second email</th>
<th>Third email</th>
</tr>
</thead>
<tbody>
<tr>
<td>Timing</td>
<td>( t=0 )</td>
<td>+2 weeks</td>
<td>+2–3 weeks</td>
</tr>
<tr>
<td>Who</td>
<td>DNALC admin</td>
<td>DNALC admin</td>
<td>DNALC admin</td>
</tr>
<tr>
<td>Thanks</td>
<td>-</td>
<td>Thanks/response rate</td>
<td>Thanks/response rate</td>
</tr>
<tr>
<td>What</td>
<td>NSF ATE workshop</td>
<td>Evaluation survey</td>
<td>Survey</td>
</tr>
<tr>
<td>Where</td>
<td>Survey URL</td>
<td>Survey URL</td>
<td>Survey URL</td>
</tr>
<tr>
<td>Why</td>
<td>To improve workshops</td>
<td>To improve workshops</td>
<td>-</td>
</tr>
<tr>
<td>When</td>
<td>If you do it by...</td>
<td>Still time to do it</td>
<td>Last chance to do it</td>
</tr>
<tr>
<td></td>
<td>you’ll get/win...</td>
<td>by... and get/win...</td>
<td></td>
</tr>
<tr>
<td>Next</td>
<td>Reminder in 2 weeks</td>
<td>Reminder</td>
<td>-</td>
</tr>
</tbody>
</table>


Dillman Method: DNALC Survey Responses

NSF ATE 12-mo f-up May 2012
iPlant long-term Jan 2013
iPlant long-term Jul 2013
iPlant long-term Jul 2014
Using Evaluation Data

To refine current program
- Curricula (more time for bioinformatics, highlight careers)
- Logistics (participant selection)
- Follow-up (tutorials, online lesson plans, collaborations)
- Extend evaluation program (SURE data re independent student research experiences)

To fund new/expanded programs
- Use these data in all grant proposals (teacher training, workshops, student research, use of materials, etc.)
- Expanded existing NSF ATE program in response to demand (analyse data from “train the trainer” model cf original program)

Acknowledgements

NSF ATE funding
Advisory board members
Workshop/study participants
Community college collaborators
DNALC staff
Further Information & Resources

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Curricula materials
Data collection tools
  – Surveys
  – Interview / focus group questions
  – Templates for observation field notes
Evaluation theory references

More on Evaluation at the Conference

THURSDAY  7:45 a.m.  Breakfast Roundtable 7:
            How to Track, Evaluate, and Promulgate
            Center Online Educational Resources

            10:30 a.m.  ATE Research and Evaluation:
                        Responsibilities and Opportunities

FRIDAY  7:45 a.m.  Breakfast Roundtable 16:
               Research and Evaluation by ATE Projects and Centers
More on Evaluation at the Conference

Visit the EvaluATE team at Booth #3 during showcase sessions

Thank you!

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