Multi-Scale Evaluation in STEM Education

NSF INCLUDES CONFERENCE EVALUATION REPORT

September 1, 2016- August 30, 2017

Prepared by

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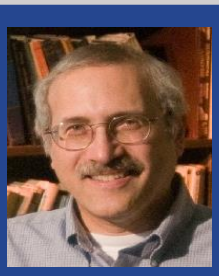
Organizing committee

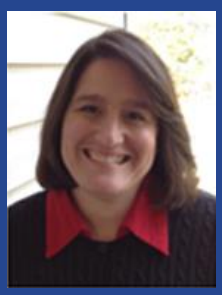


Lead PI: Louis J. Gross, NIMBioS

Co-PI: Pamela Bishop, NISER/NIMBioS

Co-PI: Suzanne Lenhart , NIMBioS

Co-PI: Ernest Brothers, NIMBioS



Project Coordinator: Sondra LoRe , NISER/NIMBioS

Introduction

The National Science Foundation (NSF) created the "Inclusion across the Nation Communities of Learners of Underrepresented Discoverers in Engineering and Science" (INCLUDES) program to improve access to STEM education and career pathways for people in underserved populations. As part of their initiative to develop a STEM workforce that represents diversity across the U.S., NSF awarded 37 INCLUDES Design and Development Launch projects and 11 supporting conferences in September 2016.

The NSF INCLUDES Conference on Multi-Scale Evaluation in STEM Education, awarded to the University of Tennessee's National Institute for Mathematical and Biological Synthesis (NIMBioS) and National Institute for STEM Evaluation and Research (NISER), included multiple components (webinar, tutorial, and conference) to support NSF INCLUDES projects in gaining knowledge about the use of evaluation throughout program planning and implementation. The goals of the INCLUDES conference were to (i) enhance the knowledge of the participants about evaluation methods; (ii) present the experiences of individuals who have successfully developed alliances and carried out evaluation efforts for these; and (iii) provide advice regarding evaluation methods for those planning to participate in future requests for INCLUDES Alliances and/or the National Coordination Hub.

A live webinar, "Program Evaluation 101", was presented by Dr. Pamela Bishop and Sondra LoRe on February 09, 2017. Dr. Louis Gross moderated the event. The webinar focused on: 1) an overview of program evaluation, 2) approaches to evaluation, 3) working with an evaluator, and 4) information about the evaluation process. A total of 140 attendees participated in the live webinar. Additionally, to date the tutorial has been viewed over 170 times on YouTube https://www.youtube.com/watch?v=ZGsNJ1jIJD0

A pre-conference tutorial with 33 attendees (including four speakers) and a two-day conference with 100 attendees (including all tutorial participants, 11 speakers, and two other organizes) was held February 22-24, 2017. Agendas for the tutorial and conference are in Appendix A and biographic sketches for presenters are provided in Appendix B.

Information, including agendas and recordings, from the NSF INCLUDES Conference on Multi-Scale Evaluation in STEM Education can be found at : http://www.nimbios.org/IncludesConf/.

INCLUDES Event Participants

A total of 140 people applied to attend the INCLUDES conference. Of these, 105 indicated an interest in attending both the tutorial and the conference. Applicants were from 96 institutions across 34 states. Applicants who identified as female made up 62% of the applicant pool (13% declined to provide gender) and 16% were underrepresented minorities. Twenty-one applicants indicated they were involved in an INCLUDES project at the time of application.

The application was open from October 12, 2016 until November 21, 2016, and was advertised widely to the INCLUDES pilot project personnel, as well as the broader STEM education community via the NIMBioS mailing list, professional societies, and relevant listservs. The organizing committee met several times at the end of November to discuss and select participants to invite. Criteria for selection were as follows, and participant diversity in gender, race, and ethnicity were taken into account during the entire selection process. For the conference, first priority was given to those who indicated current involvement with an INCLUDES project. All 21 applicants who indicated INCLUDES involvement were invited to the conference and also the tutorial if they indicated interest in attending. Second priority was given to applicants affiliated with an NSF project. Third priority was for applicants with an educational research background in a STEM field. Fourth priority was given to the diversity of the intuition (e.g. community colleges, HBCUs). Applicants to the tutorial were selected in a similar manner, with an additional priority given to INCLUDES project PIs and those with a limited background in evaluation but with some experience with STEM education.

All participants were informed on the application that if they were selected to attend the one-day tutorial on February 22nd, they would also be expected to stay for the conference on February 23rd and 24th. A total of 98 participants (plus speakers) were invited to the conference, and of those 33 were invited to the tutorial. Of those invited, 28 attended the tutorial (plus 5 speakers) and 87 attended the conference (including all tutorial participants). An additional 13 speakers and organizers attended the conference. In all, a total of 100 people participated in the events. Nineteen current INCLUDES project personnel attended the conference and six attended the tutorial.

Geographic distribution of Tutorial/Conference attendees, presenters, and organizers

100 Participants

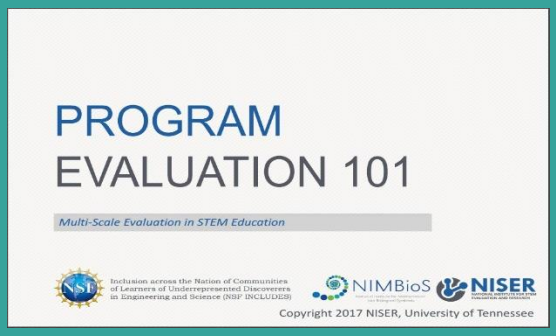
27 States

67 Institutions

13 Primary discipline areas

21% Underrepresented minorities

69% Female



Webinar participant comments

"Presentation was very well done and extremely professional. One of the best I have ever seen! Thanks for doing such a great job! Look forward to future presentations from your group.

"I'm so glad I attended this webinar. It truly transformed my grant application. Thank you again!!

"Great webinar! I loved the presentation of the information and how smoothly the webinar went. It felt like we were in the same room!

"Thank you for offering this. Participating in a conference is hard to do but the webinar is easy.

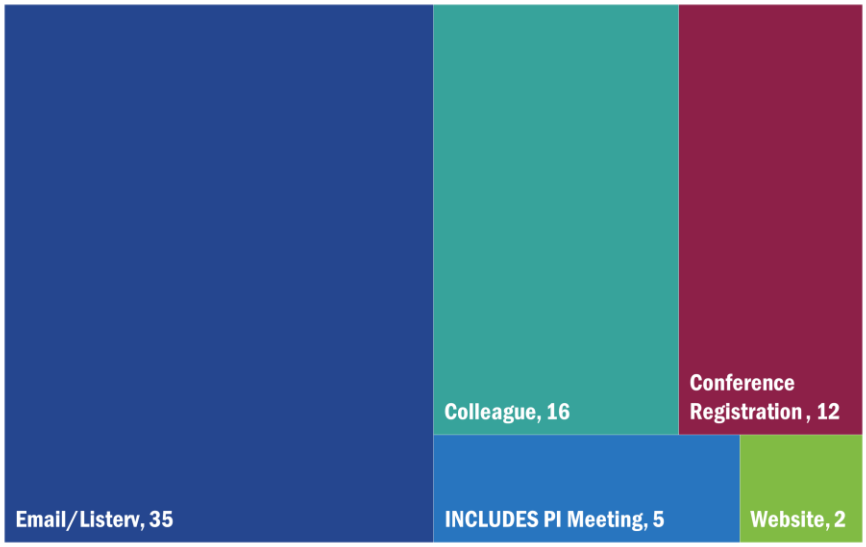
"Great overview of program evaluation for someone new to the field.

"I like the format of the presentation, with the speakers and the ability for attendees to submit questions with the chat function. The presentation was informative, and the speakers did a wonderful job! I also appreciated that the presentation was recorded and the slides were available online shortly after.

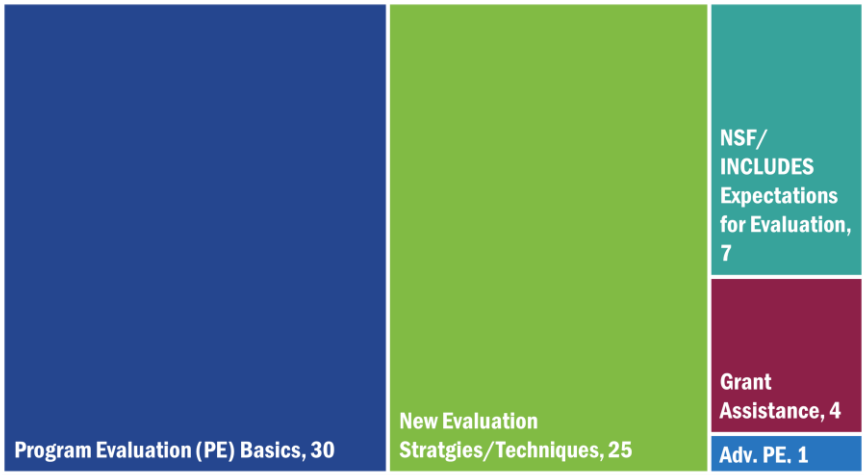
Webinar Evaluation Findings

A survey was sent to all 140 participants who registered for the webinar and was completed by 66 (47%) participants. Overall, feedback from participants was generally positive. A descriptive summary of quantitative data is provided with excerpts from qualitative data. All open-ended responses from participants are provided in Appendix C.

How participants heard about the webinar



What participants hoped to learn from webinar



Drs. Gross and Bishop and Sondra LoRe during the live webinar

Participants provided overall positive feedback about the webinar experience.

56 out of 64 Participants indicated the webinar met their expectations.

60 out of 65 Participants indicated they had no problems with the technology used for the webinar

57 out of 59 Participants indicated questions from the audience were answered well

58 out of 60 Participants indicated there was sufficient opportunity for questions and comments from the webinar audience

Webinar participant comments:

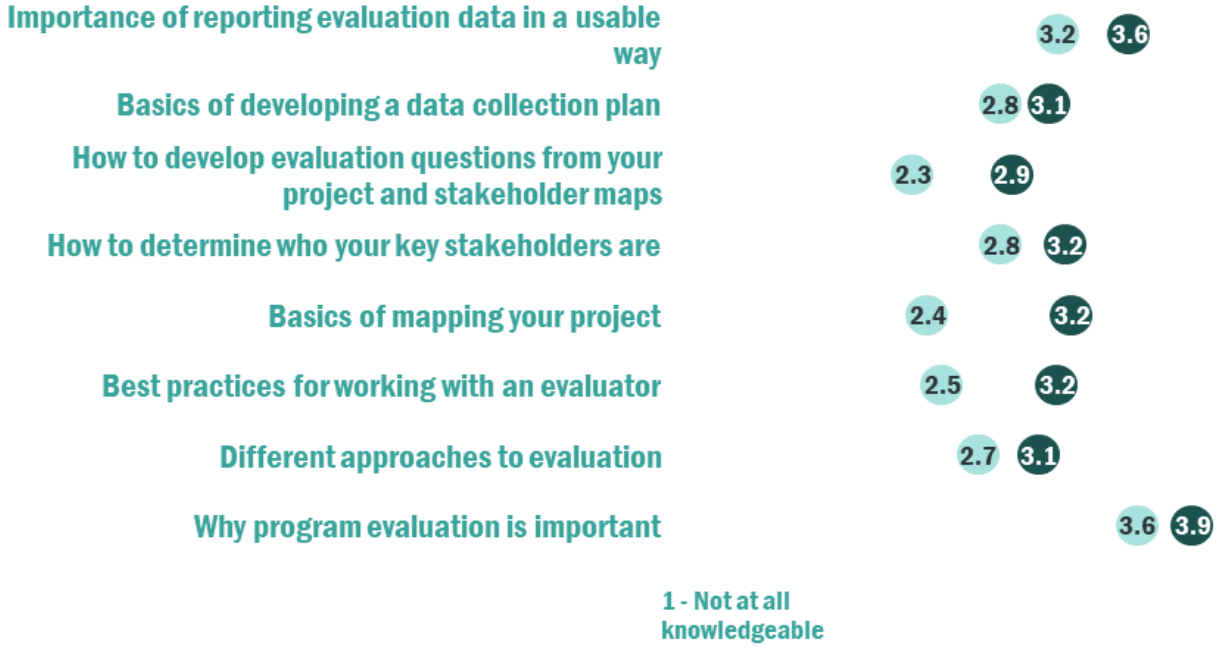
"I have attended workshops and seen other webinars on basics of evaluation and this has been the most informative and clear. I was very happy.

"Connection worked great. Good video and sound quality.

"Presenters did a great job of answering questions.

"There could always be more time for discussion...this is a rich topic for conversation

Participants reported knowledge gains evaluation topics before and after the webinar. The greatest gains were in understanding how to map their evaluation projects.



Tutorial Photos

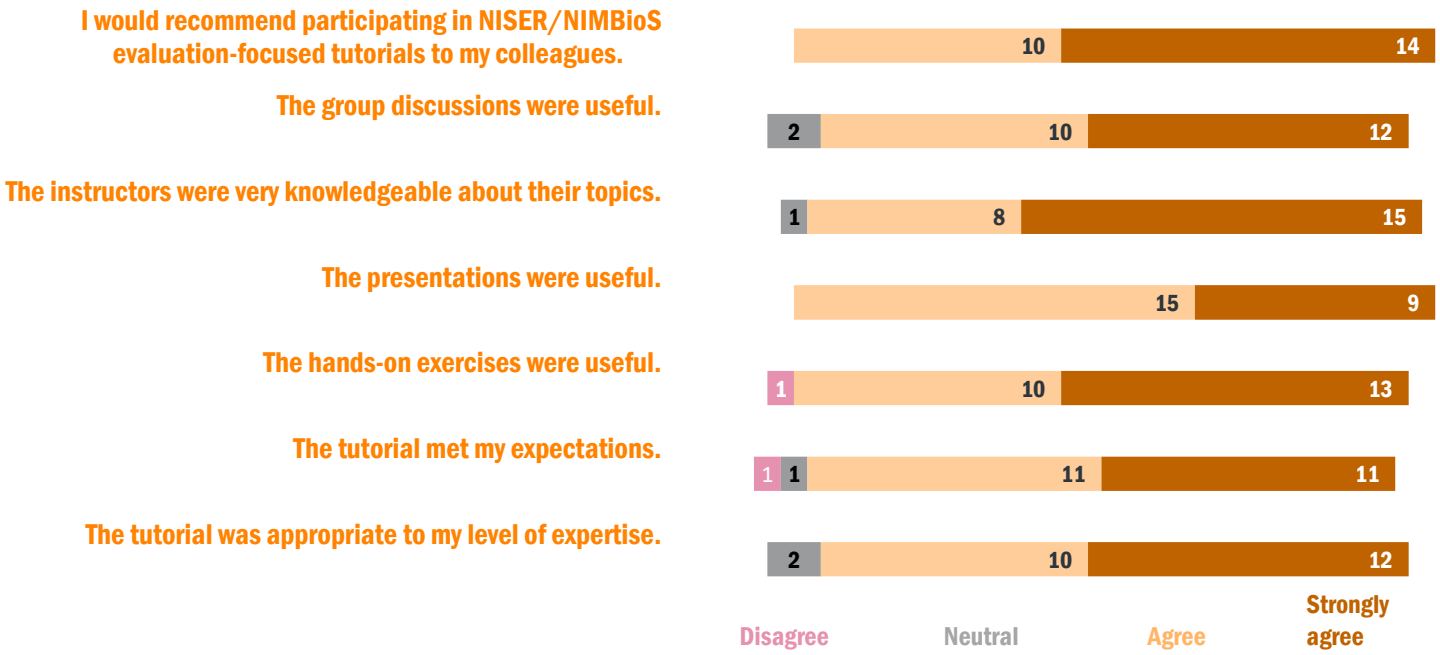
Tutorial Evaluation Findings

The objectives of the tutorial were to provide a quick overview of the processes of program evaluation, to walk participants through the evaluation process using real participant case studies, and to allow virtual participation throughout. Applicants were asked if they would be interested in providing their current projects as case studies to use as examples during the tutorial. Four INCLUDES projects of tutorial participants were selected as case studies Examples of the breakout session activities are provided in Appendix D. Tutorial participants were placed into breakout sessions by conference organizers according to the information they provided on their applications. Participants were matched as closely to a project in their area of interest as possible. Four breakout sessions with 8-10 participants each (including one session leader and one facilitator) met for two 1.5 hour breakout sessions using the participant case studies to walk through several hands-on activities, including as time allowed: (1) mapping a project, (2) determining key stakeholders, (3) developing evaluation questions, and (4) determining data sources to answer evaluation questions. Online participation was allowed in breakout sessions via Zoom. Three breakout groups each had one active online participant.

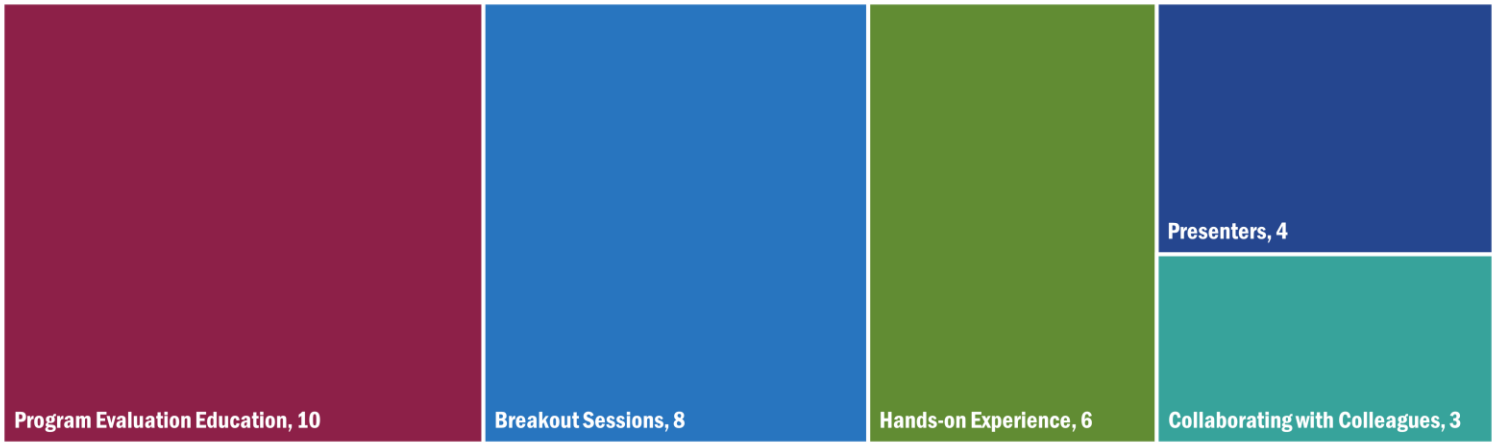
Pre- and post-surveys were sent to all 28 tutorial attendees and 26 completed the post-survey. (23 attendees completed both the pre- and post-survey.) Overall, tutorial participants showed gains in knowledge and were generally satisfied.

Participant knowledge of basic evaluation topics before and after the tutorial. The biggest gains were in program mapping.

Most participants agreed or strongly agreed with the following statements about the tutorial:



Most participants found the program evaluation education and the breakout sessions to be the most useful aspects of the tutorial.



> "It was useful to me, as someone who is not trained in evaluation, in how to set reasonable expectations regarding evaluation. The descriptions and examples for the two major frameworks for project planning/measuring impact were very helpful.

> "I very much enjoyed the breakout sessions in which we studied the individual case studies. That opportunity transformed the presentations into something more tangible and usable for me. It allowed me to bring back strategies on evaluating our program to my team.

> "I felt that making a Theory of Change model on an specific project and mapping the stakeholders for that project was incredibly useful.

> "The presentations were great and helped provide a wonderful overview of the world of evaluation.

> "Group discussions and having multiple perspectives in the room.

Conference participant comments:

"An excellent experience, in terms of both the organizers and participants. I would certainly do it again if invited.

"As a PI, I learned a lot more about evaluation and can have improved communications with my project evaluation team. Also, I have a deeper understanding of cultural considerations and strategies for improving my teams ability to recognize cultural influences on outcomes.

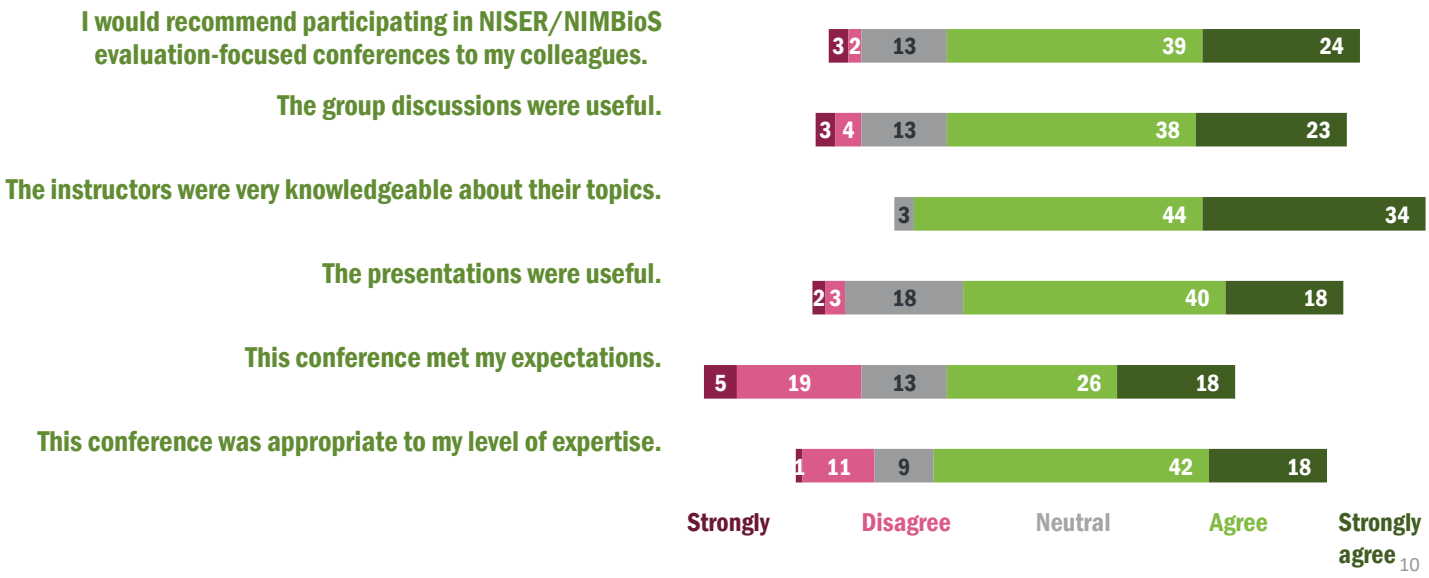
Conference Evaluation Findings

The two day conference included a combination of presentations, breakout sessions, poster presentations, and panel discussions. Seven presenters, including STEM program evaluators and leaders of diversity-focused STEM initiatives, gave talks about issues such as creating and maintaining alliances, evaluating projects at multiple scales, and cultural contexts for evaluation (See Appendix B for a full listing of presentations). Panel discussions fielded questions from the audience on day 1, and a formative evaluation at the end of day one guided the theme of the panel discussions on day two to focus more on multi-level, multi-site evaluation issues. Day 1 ended with a poster session and reception. A list of the 35 participant poster presentations is provided in Appendix F. Several small-group breakout sessions were offered on both days. Session topics were selected from participant pre-survey responses regarding issues they would like to explore further. Session topics included data visualization, development of program models, research vs. evaluation, and best practices in creating evaluation reports.

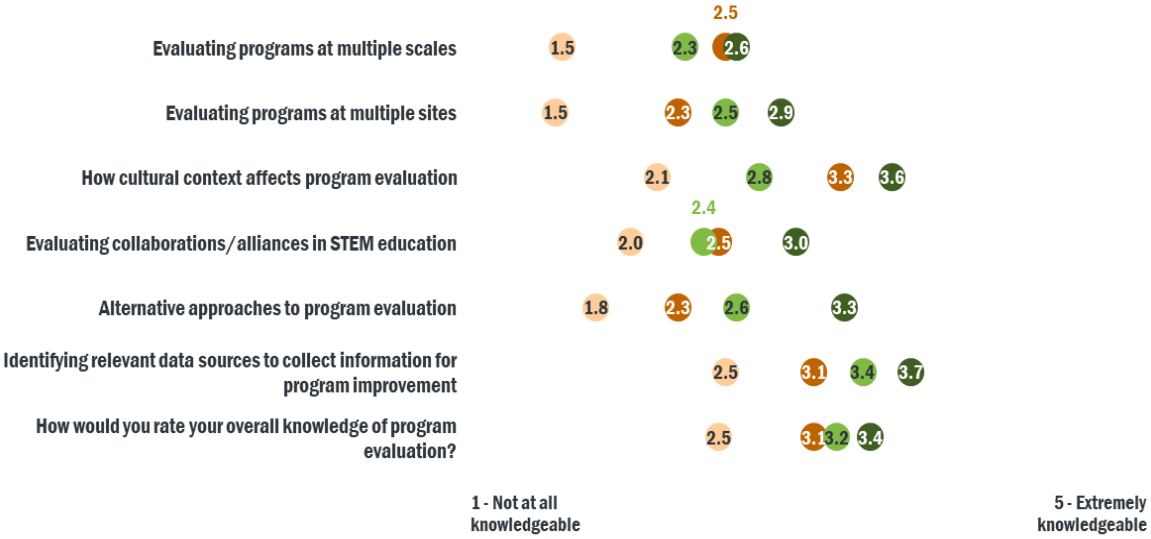
Following the conference, a post-survey was sent to all attendees and presenters (excepting those presenters organizing the conference). A total of 75 attendees and 7 presenters completed the survey. Overall findings were generally positive. Most dissatisfaction stemmed from the limited focus of the conference on multi-scale evaluations and/or other expectations regarding focus. A descriptive summary of quantitative data is provided with excerpts from qualitative data. All open-ended responses from participants and presenters are provided in Appendix G.

7 out of 7 presenters were very satisfied with their interactions with the tutorial/conference leadership

Most participants agreed that the conference was organized and carried out successfully.

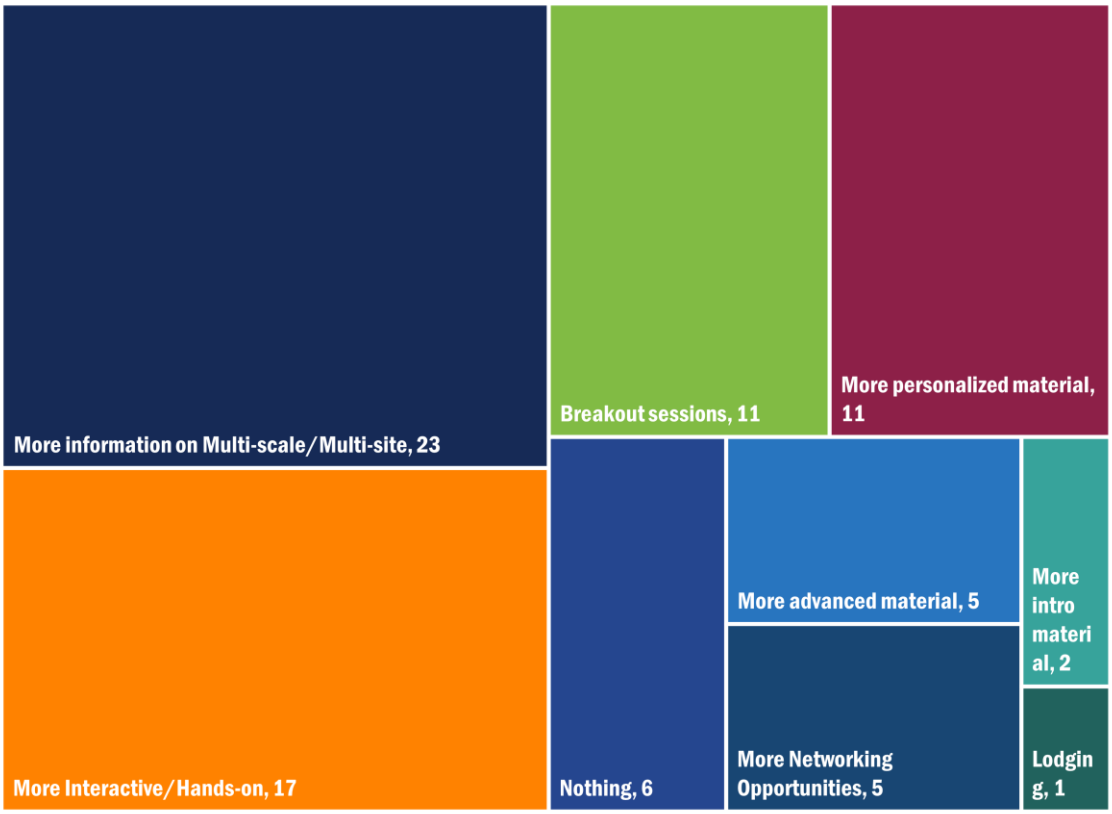


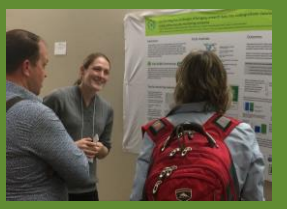
Participants reported gains in knowledge of basic evaluation topics before and after the conference for tutorial/conference participants and conference only participants



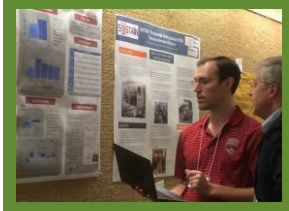
The majority of participants were satisfied with the opportunity to ask questions during the conference.

Participants would have like more information on multi-scale/multisite evaluation and more hands-on activities, among other things.

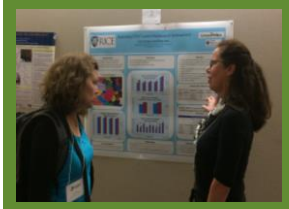




"The opportunities of networking, and not only the intellectual talent of the presenters, but also their human qualities and how they were very open to offer help in the future.



"The breakout sessions were a great way to be able to interact and ask questions, and a break from just receiving information.



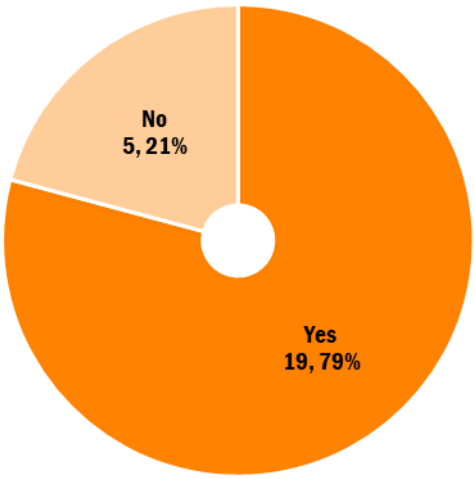
"Overall, I learned a lot at this conference. Great exposure to program evaluation.

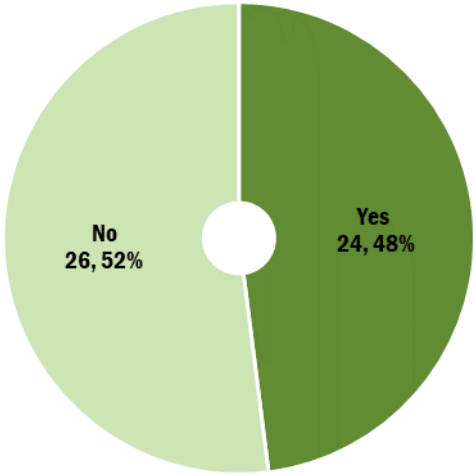
Conference participant comments:

"I really enjoyed meeting a brand new group of people who work in a similar, yet unique, space. I think there is a lot of interest in this topic, and it was nice to see that there are resources and experts who can help make evaluation relatable. Hopefully the organizers will use the feedback to host another of these workshops. I would definitely be interested in participating in future efforts.

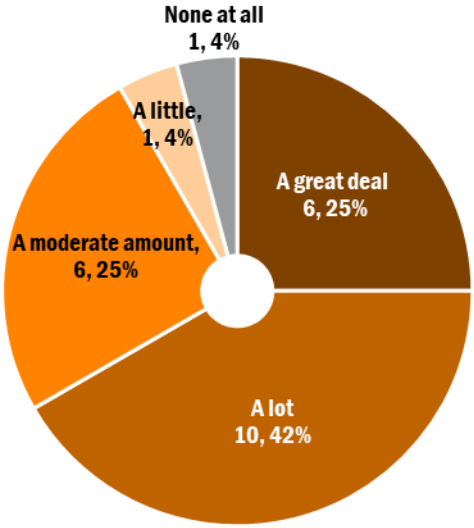
"It met my expectations because of the participants involved and the availability to discuss ideas with presenters following /preceding their talks. The presenters were very well chosen. I made many useful contacts. It also gave me more of an idea of how NSF is thinking about INCLUDES.

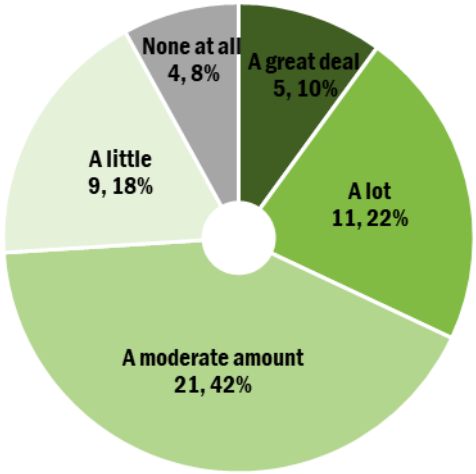
The majority of tutorial/conference participants felt the events met their expectations. Conference only participants had lower levels of expectations met, mostly due to missing out on the tutorial materials that they felt would have given them better context.





Most tutorial/conference participants and conference only participants felt that exchange of ideas that took place influence the ways in which they think about program evaluation.





Dr. Ashanti Johnson

Dr. Louis Gross

Dr. Eurmon Hervey

NSF INCLUDES Multi-Scale Evaluation Tutorial Schedule

Tutorial Schedule	**Wednesday February 22, 2017**
8:00-9:00	Breakfast
9:00-9:10	Welcome **[Louis Gross, NIMBioS]**
9:10-9:20	Introductions of participants
9:20-10:00	How evaluation can help improve your project **[Pam Bishop, NISER/NIMBioS]**
10:00-10:45	Designing the evaluation plan **[Sondra LoRe, NISER/NIMBioS]**
10:45-11:00	Break
11:00-11:30	Evaluation approaches: Two examples **[Barbara Heath, East Main Evaluation and Consulting]**
11:30-1:00	Breakout Session #1
1:00-1:45	Lunch
1:45-2:00	Debrief w/whole group and discussion
2:00-2:45	Overview of methods for multi-level, multi-state evaluations in STEM education **[Frances Lawrenz, U. Minn]**
2:45-4:15	Breakout session #2
4:15-5:00	Debrief w/whole group and discussion
6:00-8:00	Dinner at Four Points (and registration for conference attendees who have arrived).

NSF INCLUDES Multi-Scale Evaluation Conference

Thursday, February 23rd:

Conference Schedule	**Thursday February 23, 2017**
**Wed (2/22): 6:00-8:00 pm*	**Dinner at Four Points (and registration for conference attendees who have arrived)*
Thurs: 8:00-9:00	Breakfast and Registration
9:00-9:20	Lessons for Educational Projects from Evaluation of Multi-Scale Quantitative Models **[Louis Gross, NIMBioS]**
9:20-10:20	Managing, Maintaining and Leading Healthy Alliances in STEM Education **[Byron Greene, FL A&M U.]**
10:20-10:45	Coffee Break
10:45-11:45	Evaluating STEM teaching-and-learning innovations at multiple scales **[Kirk Knestis, Hezel Assoc.]**
11:45-12:15	Discussion of morning presentations
12:15-1:15	Lunch
1:15-2:15	Broadening participation in STEM: Lessons from projects at different scales **[Ashanti Johnson, Mercer University & Cirrus Academy]**
2:15-3:15	Breakout sessions
3:15-3:45	Report back to whole group on breakouts session
3:45-4:00	Coffee Break
4:00-5:00	Panel Discussion
5:00-5:30	Open discussion of formative evaluation for second day activities
5:30-6:30	Dinner
7:00-8:30	Poster session

NSF INCLUDES Multi-Scale Evaluation Conference

Friday, February 24th:

Conference Schedule	Friday February 24, 2017
8:00-9:00	Breakfast
9:00-10:00	National evaluation of undergraduate mathematics efforts, **[David Bressoud, Macalester College]**
10:00-11:00	Cultural Contexts for Effective Program Evaluation **[Melvin Hall, N. Arizona U.]**
11:00-11:15	Coffee Break
11:15-12:15	Panel discussion
12:15-1:00	Lunch
1:00-2:00	Understanding the "Why": Making the case for qualitative evaluation methods in a quantitative (STEM) world **[Eurmon Hervey, Jr., Clemson University Fellow, Catapult Learning, LLC]**
2:00-3:00	Breakout sessions
3:00-3:15	Coffee Break
3:15-3:45	Debrief w/whole group and discussion
3:45-4:15	Final Panel Discussion - open challenges

Appendix B Presenter Bios

Louis J. Gross, PhD
NIMBioS
gross@nimbios.org

Louis J Gross is a James R. Cox and Alvin and Sally Beaman Distinguished Professor of Ecology and Evolutionary Biology and Mathematics and Director of The Institute for Environmental Modeling at The University of Tennessee, Knoxville. He is also Director Emeritus of the National Institute for Mathematical and Biological Synthesis, a National Science Foundation-funded center to foster research and education at the interface between math and biology. He completed a B.S. degree in Mathematics at Drexel University and a Ph.D. in Applied Mathematics at Cornell University, and has been a faculty member at UTK since 1979. His research focuses on applications of mathematics and computational methods in many areas of ecology, including disease ecology, landscape ecology, spatial control for natural resource management, photosynthetic dynamics, and the development of quantitative curricula for life science undergraduates. He led the effort at UT to develop an across trophic level modeling framework to assess the biotic impacts of alternative water planning for the Everglades of Florida. He has co-directed several Courses and Workshops in Mathematical Ecology at the International Centre for Theoretical Physics in Trieste, Italy, served as Program Chair of the Ecological Society of America, as President of the Society for Mathematical Biology, President of the UTK Faculty Senate, Treasurer for the American Institute of Biological Sciences and as Chair of the National Research Council Committee on Education in Biocomplexity Research. He is the 2006 Distinguished Scientist awardee of the American Institute of Biological Sciences and is a Fellow of the American Association for the Advancement of Science. He has served on the National Research Council Board on Life Sciences and was liaison to the NRC Standing Committee on Emerging Science for Environmental Health Decisions.

Pam Bishop, PhD
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pbaird@utk.edu

Pamela Bishop is Director of the National Institute for STEM Evaluation and Research (NISER) and Associate Director for STEM Evaluation at the National Institute for Mathematical and Biological Synthesis (NIMBioS) at the University of Tennessee, Knoxville. She is also an Adjunct Professor in the Evaluation, Statistics, and Measurement Program in the Department of Educational Psychology and Counseling at the University of Tennessee, Knoxville. Through NISER, Bishop and her team provide high quality, responsive external evaluation services to the STEM research and education sector. As Associate Director for STEM Evaluation at NIMBioS, Bishop evaluates interdisciplinary scientific research groups, K-16 and graduate-level interdisciplinary educational programs, and outreach events aimed at promoting teaching, learning, and research at the intersection of mathematics and biology.

Sondra LoRe, EdS
NISER/NIMBioS
sondra@utk.edu

Sondra LoRe is an Evaluation Associate for the National Institute for STEM Evaluation and Research (NISER) at NIMBioS, where she assists with both internal and external evaluations related to STEM programs and projects. She has nearly 20 years of experience in education, instruction, educational leadership, and evaluation with pre-K-20 programs and STEM schools. She has served as a Tennessee state teacher evaluator and curriculum and assessment coach for 16 years. Sondra has a B.A. in Economics from the University of Massachusetts, an M.S. in Curriculum and Instruction from the University of Tennessee, Knoxville, and an Ed.S. in Educational Leadership from Lincoln Memorial University. She is currently a Ph.D. candidate in the Evaluation, Statistics, and Measurement Program in the Department of Educational Psychology and Counseling at the University of Tennessee, Knoxville.

Appendix B Presenter Bios

Barbara Heath, PhD
East Main Evaluation
bheath@emeconline.com

Barbara Heath is the Managing Member and Lead Consultant for East Main Evaluation & Consulting, LLC; a company she started in January 2004. Heath received her Ph.D. in Science Education (Physics) from North Carolina State University. She has been actively involved with several STEM education and related projects from inception through funding, development, and implementation. Past and current projects include CyVerse (formerly the iPlant Collaborative), multiple state level Math and Science Partnership programs, ChemTechathon, Grid and Parallel computing courses, and the iLumina Digital Library. Additionally, Heath has provided consulting support to the SC Conference Organization, Watson College of Education, and the NC Aquarium at Fort Fisher. These experiences provide her with insight into different facets of program development and collaboration

Frances Lawrenz, PhD
University of Minnesota
lawrenz@umn.edu

Frances Lawrenz is the Associate Vice President for Research at the University of Minnesota and a professor in the Department of Educational Psychology. Her specialization is science and mathematics program evaluation and she received the international Myrdahl award for outstanding evaluation practice, the international Distinguished Contributions to Science Education award and the AERA sig award for Research on Evaluation. She has conducted numerous evaluations of NSF projects and programs and has twice served at NSF in a rotator position. She is currently working on several federally funded projects and has a substantial record of publications.

Eurmon Hervey, Jr., PhD
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Eurmon Hervey, Jr. (Research Fellow, Clemson University; National VP, Catapult Learning, LLC.) is an accomplished educational executive with a comprehensive blend of nonprofit, government, and academic management experience. Most of his professional career has been in senior leadership positions like Campus CEO, Executive Vice President & Provost, and Assistant Professor in colleges and universities. He has also held the titles of Assistant Superintendent and Deputy Chief State School Officer in the K-12 education sector. Further, he is a community educator and has done pioneering work in establishing two not for profit community organizations, a private elementary school and even a county library. As an evaluator, he served on a team to assess Baltimore City Public Schools' adherence to its strategic plan, led corrective action planning for District of Columbia Public Schools and the DC Office of the State Superintendent. He has also assessed teacher effectiveness in Tunica County (MS) Public Schools, evaluated community development projects in MS Delta for major foundations and federally-sponsored initiatives. He served as licensing, regulatory, and accreditation officer for 100+ post-secondary institutions operating in Washington DC, oversaw the closure of three institutions and the licensing approval of the University of Phoenix in Washington DC. He served as accreditation liaison at Edward Waters College, the University of the District of Columbia and currently for Catapult Learning, LLC., the nation's largest education service provider working with over 200 school districts nationwide. Further, he currently serves on external review teams for AdvancED/SACS, as consultant for non-profit organizations and as a Research Fellow with the National Dropout Prevention Center at Clemson University. Hervey's work in education spans the globe having traveled to Egypt, Singapore, Austria, and Taiwan (Republic of China) to make presentations as a guest of those nations. He has also traveled to Spain, Thailand, Morocco, and Malawi for study and leisure. He holds a doctorate in education from Peabody College of Vanderbilt University, and a master's degree in education from Harvard University. He also earned two degrees in pure mathematics: a master's degree from Clark Atlanta University, and a bachelors degree from Edward Waters College.

Appendix B Presenter Bios

David Bressoud, PhD
Macalester College
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David Bressound is Director of the Conference Board of the Mathematical Sciences and DeWitt Wallace Professor of Mathematics at Macalester College, former President of the Mathematical Association of America, and a Fellow of the American Mathematical Society. He taught at Penn State for 17 years and chaired the Department of Mathematics and Computer Science at Macalester from 1995 until 2001. Bressoud has received the MAA Distinguished Teaching Award (Allegheny Mountain Section), the MAA Beckenbach Book Award for Proofs and Confirmations, and has been a Pólya Lecturer and a Leitzel Lecturer for the MAA. He has published over sixty research articles in number theory, combinatorics, special functions, and mathematics education. Bressoud has served as Director of the FIPSE-sponsored program Quantitative Methods for Public Policy and PI for two NSF- sponsored national studies of Calculus: Characteristics of Successful Programs in College Calculus (NSF #0910240) and Progress through Calculus (NSF #1430540).

Melvin Hall, PhD
N. Arizona University
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Melvin Hall is a Professor of Educational Psychology with Northern Arizona University whose background includes focused study in program evaluation, psychological assessment, and comparative inquiry methodology. Hall teaches courses in developmental perspectives of human diversity, research design, and human relations supporting the M.Ed. in Human Relations Program as well as a course meeting the program evaluation requirements across all doctoral level programs in the department. He has experiences in diverse applied settings comprised of evaluation consultations with federal, state and foundation project sponsors. As a thought leader in the conceptualization of program evaluation, his affiliations have included extensive work with the National Science Foundation, American Evaluation Association, Association of American Colleges and Universities and the University of Illinois Center for Culturally Responsive Evaluation and Assessment (CREA).

Byron Greene
Florida A&M University
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Byron Greene of Florida A&M University has a career spanning more than 15 years in higher education, where he utilizes keen business insights to successfully build relationships and collaborative partnerships; a skill developed during career in corporate and partnership tax at Coopers & Lybrand, L.L.P. During his 15 years in higher education Byron has served as senior level personnel responsible for securing more than $20,000,000 to support STEM programming in higher education. Using the power of partnership to create value for organizations is at the forefront of Byron's work. Through excellent communication skills Byron has the unique ability as a consensus builder to bring people from diverse backgrounds and interests together for collaboration. This provides a platform to create stakeholder value and assess outcome potential through strategic alliances. Also effective utilization of leverage as a means to achieve greater outcomes is one of the hallmarks of Byron's success. Currently, Byron serves as Associate Director for a National Science Foundation grant alliance of 14 institutions of higher education. Additionally, he consults and advises on independent projects that focus upon human capital development in STEM and university research and commercialization initiatives.

Appendix B Presenter Bios

Ashanti Johnson, PhD
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Ashanti Johnson is the CEO/Superintendent of Cirrus Academy, a state-wide STEAM charter school system in Georgia and an Associate Professor of Education at Mercer University. Immediately prior to serving in this role, Johnson was an Associate Professor of Environmental Science and Assistant Vice Provost at the University of Texas at Arlington and Executive Director of the Institute for Broadening Participation. She has also been a faculty member at the University of South Florida, Georgia Institute of Technology and Savannah State University. Johnson received her B.S. in Marine Science (1993) and her Ph.D. (1999) in Oceanography from Texas A&M University. Her areas of research include: 1) environmental aquatic radiogeochemistry, 2) professional development of students and early career scientists, and 3) STEM diversity-focused initiatives. Her professional development and diversity-focused activities facilitate the advancement of students representing diverse socioeconomic, cultural, gender, racial and academic backgrounds. Among her extensive board service includes the National Academies Gulf Research Advisory Group, the NSF Advisory Committee on Environmental Research and Education, AGU Committees on Ethics, Education and Human Resources and Subcommittee on Diversity and the Savannah River Environmental Sciences Field Station Advisory Board. She is well published in both scientific and education journals and has received numerous honors and awards, including a *Presidential Award for Excellence in Science Mathematics and Engineering Mentoring* at the White House, a 2016 American Geophysical Union Excellence in Geophysical Education Award, a 2016 American Geophysical Union Ambassador Award, Conferred as an American Geophysical Union Fellow in 2016, recognized by TheGrio.com, an NBC product, as one of *100 History Makers in The Making* and profiled in the *Black Enterprise Magazine* March 2011 Issue's "Women In STEM" Feature Story

Kirk Knestis, PhD
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Kirk Knestis is CEO of Hezel Associates, an 11-person research and evaluation firm in Syracuse, NY, that specializes in studying education innovations. During his tenure with the firm, the Hezel team has served as external evaluator or research partner for more 20 NSF projects across 11 programs. Knestis has been a small business owner, STEM classroom teacher, university program administrator, and education researcher. He holds a doctorate in education policy and evaluation from the University of Virginia's Curry School of Education, and a Master in Teaching from Seattle University.

Appendix C
Webinar Feedback

What are you hoping to learn by attending the webinar?

- How to develop a strong evaluation plan aligned to NSF includes criteria
- I am new to this paradigm so I was hoping to form an overall understanding of evaluation.
- I wanted to see what the evaluation expectations are for NSF, NIMBioS, and/or NISER
- How-to for different types of evaluation - when are different types more appropriate, instruments that are available that I might not know about, visualization tools
- overview of program evaluation process
- Refresh my understanding of program evaluation
- how to effectively and efficiently evaluate a program
- more about evaluation of NSF education projects
- Basic concepts of program/project evaluation
- Strategies and skills to perform program evaluations
- General overview of program evaluation. I'm familiar with the topic but wanted to see if I would hear any new insights I haven't heard before.
- I know the basics of evaluation, but have no formal training in evaluation. Wanted to make sure my understanding aligns with current practices.
- Although the topic is brand new to me, it piqued my interest being an educator and working on a new biology degree proposal.
- Refresher course on program evaluation
- How to plan for an effective program evaluation
- Best practices for Program Evaluation
- Basic terminology used in evaluation.
- Evaluation techniques specific to stem education
- Introduction to evaluation concepts.
- Basics of evaluation.
- Wasn't sure. I better idea of what's ahead of me at the conference, I suppose.
- recent trends in program evaluation
- General information
- How evaluation is practiced in the STEM community
- a few tips for creating effective evaluations and how to use them in reporting more effectively
- Improve my understanding of program evaluation and practices.
- In general, more about evaluation that would prepare me for the upcoming conference.
- An overview of program evaluation and best practices
- How assessment formulation works in grant applications and project planning.
- Bit more about evaluation for INCLUDES
- I was hoping to learn about different program evaluation methods.
- Evaluation and assessment metrics appropriate for programs and grant applications.
- Rigorous evaluation for NSF-funded projects
- basics of evaluation in a way to explain to Pis
- Overview of program evaluation as a lead in to the conference
- An introduction to program evaluation.
- approved evaluation methods for an NSF funded program (mine is through the S-STEM category)
- Anything—I don't know anything about program evaluation so just trying to figure out where to start
- More about program evaluation, I am starting my career and wanted more information so I can create my own programs in the future.
- Evaluation tools in plain English and deployment methods
- I was hoping to learn more about to what degree to engage different stake holders.
- current best practices; pro tips for efficiency
- Different perspectives and ways of explaining evaluation to others. While I understand evaluation and its purpose, having some information re-emphasized or in a different way always seems helpful especially when you need to explain it to others and why it is important. Also, we recently hired new staff on our assessment and evaluation team and this webinar served as a really good overview for them as well.
- basics of evaluation & assessment
- ideas on improving program evaluation
- I wanted to know what a "project" was and get a little understanding of how to plan an evaluation
- new information about evaluation design and implementation
- Enrichment - overview of program evaluation from experts in the field, aspects of which might be applied to the Education Program at our Engineering Research Center.
- The basics (getting started) in program evaluation
- different evaluation methods that I can use for my grant proposals
- Get a preview for the conference. Interesting to see how other evaluation professionals present our work.
- The basics of evaluating programs.
- Learn more about collaborative impact and evaluation in general
- A general introduction and overview of evaluation methods and procedures.
- How evaluation can help me with grant proposals.
- I was hoping to learn more about strategies for designing and conducting research projects on STEM programs.
- Details that are critical to evaluation practice.
- More about program assessment to help in revising an NSF grant proposal involving undergraduate STEM education.
- About what Pam does (and also topics I can use in marketing materials)
- Some confirmation that what I currently do with evaluation in my grants is good, and additional tips and ideas as well.
- I was looking for advanced topics and nuances in evaluation. After I registered, I realized that this probably wasn't what I was looking for.
- guick refresh on program evaluation and proper use of terminology
- What NSF expects when it says it wants evaluation
- Evaluation strategies that we could incorporate into our own evaluation methods or to strengthen our approach.

Appendix C
Webinar Feedback

What are you hoping to see presented in future evaluation webinars?

- More about specific NSF criteria for proposals
- Perhaps expanding on the data reporting process
- Maybe a sample evaluation of a good one and a not so good one. What kinds of evaluations would be rejected by a program officer?
- More of the "nitty-gritty" or "nuts and bolts".
- next steps in program evaluation
- Developing evaluations, different methods, theories, and outcomes of each
- Question design; Strategies for implementing instruments (best practices for surveys, how to distribute them, tips to keep in mind); Tips for analysis if you don't have a stats background
- For educators who are new to this area, please use case studies as examples and use easy to understand terminology.
- Having some examples of evaluations of specific projects would be nice to see (to incorporate some real world experiences)
- How to establish the appropriate questions to assess outcomes/goals.
- Eval data analysis techniques.
- More in depth , more advanced evaluation information
- Not sure...this was a good overview. Perhaps how to write survey questions?
- I would like to see a continuation of this first evaluation, sort of an evaluation 200.
- Not sure.
- how to present data in a more graphically pleasing and informative format (instead of just bar graph)
- strategies for getting buy in to evaluation activities from PIs/scientists
- usability of data, power of data
- Best practices to share/present evaluation data to engage stakeholders and general public.
- Development of logic models as its own session. Coming up with evaluation questions as its own session.
- That was good given the amount of time.
- I'd like to learn more deeply about all aspects of evaluation.
- Long term vs short term evaluation metrics, how to facilitate evaluation during cross-institutional collaborations, other aspects of grant writing, program evaluation for teaching professors
- what types of tools are out there for measuring impact in various ways and how can we look to take advantage of them for our particular programs, without reinventing the wheel
- Developing quantitative evaluation metrics for programs that are typically difficult to measure quantitatively beyond basics like #'s of participants, frequency of contact, etc.
- One about the theory of change model -- maybe where you go through developing an example
- More nuances in developing evaluation protocols and wording surveys to provide the information you REALLY want. Often I realize that after I get the results back.
- More examples would be helpful as a guide.
- examples and outcomes from other projects
- Matching program participants, such as with propensity score matching.
- tools for evaluating outreach events (beyond tally counts and mini exit surveys)
- An overview of report writing (different structures, where content fits, putting words to data) Data visualizations - creating graphs, figures in Excel/Tableau/Others Mapping a "dummy" project / creating a logic model
- I don't have any suggestions right now.
- How to design a project with evaluation in mind.
- case studies for different types of programs
- Program Evaluation 102; Conducting your first program evaluation; Creating visually appealing graphs
- examples of good research questions and research methods as a researcher, not as an external evaluator, for educational technology projects. research plan, sample sizes, comparison methods, etc.
- It would really depend on the purpose and the audience. I don't have anything to suggest at this point.
- How to access various templets that were used in the presentation.
- More about metrics.
- Each of the topic areas could be a more focused seminar.
- Maybe breakdown each specific topic presented in more detail.
- Specific Research Approaches
- Case studies!
- how to develop proposals on foundational research (e.g., ECR core).
- drafting an evaluation plan from start to finish with a single example evaluating a broader impacts component for a STEM research grant - the scale is so small, how to make it impactful, efficient, and engage the STEM researcher appropriately

Appendix C
Webinar Feedback

Comments about webinar expectations

- Good information on basics of evaluation.
- The webinar was presented more at the 10,000 foot level and I was hoping more for the 50 foot level. There were nuggets that I was looking for and some interesting information for planning. When I tell people that approach me for advice on evaluation (at the last minute with 1/4 page left in their proposal) that we should have been working together from the beginning, they invariably say, but the evaluator has to be external, not part of the project team. The webinar gave me some language and tools for explaining how designing for evaluation helps everyone!
- It was a good introduction to program evaluation.
- It was well structured, clear, and the questions were very good and well addressed.
- It was more about inviting outside sources to do program evaluation
- I'd be interested in hearing more details in HOW to do instrument development, considering question design, analysis.
- I learned about an area I am not much familiar with, so, it was good education for me.
- Great overview and very useful information
- I have more of a general evaluation background
- Good general overview.
- exceeded my expectations
- Sort of both - I felt that the information covered was pretty basic, I'm hoping to figure out how to build evaluation into all we do in a creative manner.
- Great overview of program evaluation for someone new to the field.
- It was excellent! The speaker went through the slides too fast to make notes, but if the slides are available now, they will be an excellent reference.
- I like the format of the presentation, with the speakers and the ability for attendees to submit questions with the chat function. The presentation was informative, and the speakers did a wonderful job! I also appreciated that the presentation was recorded and the slides were available online shortly after.
- Excellent seminar and was instrumental in helping me complete my grant application. Thank you!
- It was very clear and concise. I look forward to the conference to dig deeper, which I think is a perfect balance
- Very well done and helpful.
- I have attended workshops and seen other webinars on basics of evaluation and this has been the most informative and clear. I was very happy.
- Good overview. Informative slides. Engaging speakers (esp. given the format)
- I thought the webinar was very organized and thorough. I enjoyed all the visualizations, especially the cartoons by Mark (I forget his last name). The webinar kept me engaged with the switches between speakers. The facilitators used language that was easily understood by the audience. I tried to take notes, but was relieved when it was announced the slides would be made available. The most valuable part for me as I mentioned previously is - what is evaluation, why do we do it, how do we do it? I can answer them, but I want to be able to explain them as well and as thoroughly as this webinar did.
- It didn't really answer any of the questions that I had. I thought the purpose of the program was to help us be the evaluators and the webinar talked about how to find an evaluator, among other things. I guess it just wasn't what I thought it would be.
- Far too elementary
- i looked for evaluation methods as a researcher, not for external evaluation
- Really easy to follow and I expect quite accessible for a lay audience
- I found it useful. I direct an NSF training program and as the Director it was good information to have.
- It was a good introduction for a novice like me. Well organized and accessible.
- I really understood the importance of having a strong evaluation plan at the start of my proposal (working in partnership with evaluator).
- Exceeded!
- If there was a "more or less" option, I'd have chosen that. In particular, I think the line between evaluation of education projects and education research is not as clear as the answer that was given suggests, and is a difference I would still love to have a better understanding of.
- While it wasn't what I was looking for BEFORE registering, it delivered what was promised.
- unfortunately I missed how to arrange for sound and didn't have earphones at hand. Only later found a message that might have had instructions for using the phone. I would like to review the recording.
- I was particularly happy to learn the difference between evaluation and research during the question and answer period.

Comments about technology used during the webinar

- I watched the recorded webinar as I was not able to attend live.
- It kind of glitched in and out a few times.
- Pretty good actually
- Connection worked great. Good video and sound quality.
- Issue with launching on Linux/Ubuntu, but smooth sailing on Windows
- as mentioned before--sound

Comments about technology used during the webinar

- Questions answered for the most part; there were a couple that I would have preferred more information on.
- Needed better understanding on response to question reliability and validity
- I missed the Q and A because I had a meeting
- This was one of the most helpful parts!!
- I had to leave the webinar before the questions. I am unable to answer this one
- It wasn't what I was looking for so my attention was
- Presenters did a great job of answering questions.
- Per above question, again see my earlier comment.
- There could always be more time for discussion...this is a rich topic for conversation
- I had the webinar playing, but as explained earlier I knew it wasn't what I was looking for so my attention was elsewhere.
  elsewhere.

Additional comments

- I am still learning more about this approach and thus looking for more opportunities...
- Thank you for offering this. Participating in a conference is hard to do but the webinar is easy.
- Thank you!
- Great webinar! I loved the presentation of the information and how smoothly the webinar went. It felt like we were in the same room!
- thanks, if there's a way to share this with colleagues who couldn't attend at that time, it would be great!
- The presenters assumed a certain base line knowledge from all participants which may not apply in reality.
- Thanks for a great session and sharing the presentation slides.
- Thank you. I think I wasn't the target audience for this webinar. It was good, but I had more of a background in program planning and evaluation already so it didn't meet my needs.
- The moderator did an excellent job.
- I am very much looking forward to following this webinar up with the one day workshop and two-day conference next week. This is proving to be immeasurably helpful!
- Were ppt ever posted I looked several times but never found them
- <3
- Thank you! I hope there are more webinars.
- Well done!
- thank you for arranging this--I am sure it is a very valuable presentation
- None. Thanks!!
- I'm so glad I attended this webinar. It truly transformed my grant application. Thank you again!!
- Very well done!
- The facilitators did a great job of making this webinar useful and engaging. If another one were to be offered on another topic, I would surely tune in. Thanks!
- If the presenter is simply presenting what is already on the slides provided it makes it really hard to stay focused. More examples of different projects would have been helpful.
- While I appreciated the content, I felt a little frustrated by the delivery; it seemed as though the presenters were reading a script. It was challenging to stay engaged.
- Just wanted to thank you so much for putting on this webinar!!
- Thank you, thank you, thank you for not making this a "death by PowerPoint" event. The slides were perfect -- they illustrated your points effectively with minimal text. No one read long paragraphs out loud that were already printed on the screen (ugh!) or showed dense text while talking about something else. The slides highlighted the discussion without intruding or distracting from the information. That is (as you obviously know!) how it should be done. In fact, maybe you could do a webinar on doing good PowerPoint presentations. The world would thank you.
- Presentation was very well done and extremely professional. One of the best I have ever seen! Thanks for doing such a great job! Look forward to future presentations from your group.

NSF INCLUDES Multi-Scale Evaluation Tutorial

Breakout Session #1: Mapping Your Project

It is important to have a roadmap of how you are going to achieve your project's outcomes. A useful way to do this is by mapping your project. Mapping makes the invisible visible. In other words, it visualizes the ideas that you and your colleagues have about how the project will work, getting everyone on the same page. Project mapping can take many forms. The method we are going to walk through today is a Theory of Change model. This type of model is useful in that it provides specific details regarding who will be involved in what activities, which specific outcomes will be related to those activities, how those specific outcomes relate to the intermediate project goals, and ultimately, the long term-goal of the project.

This model has several elements that we will go through in a step-wise manner. Please note that not every project will have every element. The next page shows an example of a fully-developed Theory of Change model for an example project aimed at increasing recruitment and retention of undergraduate women in engineering.

Your project's context will guide which mapping elements to include. Here are the basic elements:

Challenges are the big picture problems your project seeks to address.

Initiatives are the big picture interventions you are going to use to address the challenges you have identified.

Activities are the specific ways in which you will engage your target stakeholders in whom you want to achieve some sort of change. They can include, for example, workshops, courses, trainings, or other activities (note, some projects may skip the "initiatives" stage and just have activities in their models, depending on project structure).

Outcomes are the direct results or benefits for the people you are reaching in your project. Examples include changes in knowledge, skill development, or behavior. Outcomes can be short-term, intermediate, or longer-term achievements.

Goals are broad, general statements of what the project intends to accomplish. These can also be short-term, intermediate-term, or long term. Some projects will have one overarching long-term goal, as seen in the example below. Others may have more than one long-term goal. It ultimately depends on the context of your project.

NSF INCLUDES Multi-Scale Evaluation Tutorial

Breakout Session #2: Stakeholders and Evaluation Questions

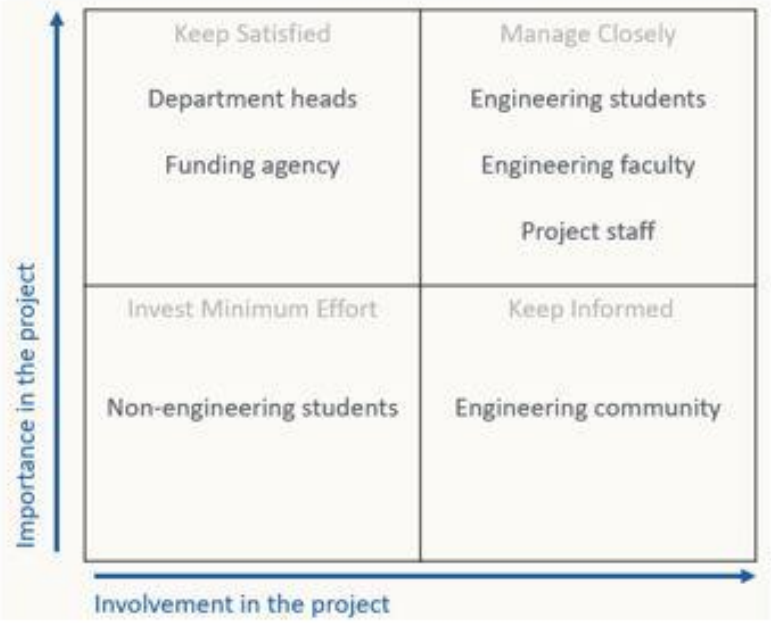
A **stakeholder** is any person or group that has an interest in your project or its evaluation results.

A stakeholder **map** allows you to plot stakeholders based on their **importance and involvement in your project** and this can help you prioritize your level of engagement with them in your evaluation. In the diagram below, **importance** relates to the stakeholder's level of interest in the project. **Involvement** refers to their ability to facilitate or prevent change from happening.

Stakeholders with a high level of involvement and importance your project need to be managed closely. This is the group that you will want to involve heavily in your evaluation data collection.

Other stakeholders may need to be kept satisfied through regular project updates, and you should be responsive to their issues/concerns as they arise.

Stakeholders with high involvement but low importance in the project need to be kept informed of your project's progress, while those with low importance and low involvement will require the least amount of effort in the evaluation. Below is an example stakeholder map from our example Theory of Change model from Breakout Session #1.



Evaluation questions support project evaluations by guiding the planning process, providing structure, purpose for activities, and defining outcomes and goals. After we map the stakeholders for our case study project, we will identify 2-3 key stakeholders and develop evaluation questions we might seek to answer using the Theory of Change map we created in Breakout Session #1. As time allows, we may also specify a data collection plan to answer the evaluation questions. Below is an example table again using our example Theory of Change model from Breakout Session #1.

Stakeholders	Evaluation Questions	Data Collection Plan
Engineering students	To what extent did students participate in the implicit bias training? Did they find it useful? In what ways did the training affect their awareness and understanding of implicit bias?	Student pre/post survey (before and after orientation, workshops, and intervention training) Student interviews (end of each semester) Student focus groups (annual)
Engineering faculty	Did faculty receive appropriate information and training regarding their roles in the project? To what extent did female engineering faculty become involved with mentoring new students?	Faculty Interviews (one month into the project, end of semester) Student interviews (end of each semester) Student focus groups (annual)

Appendix E
Tutorial feedback

What was the most useful aspect of the tutorial?

- Variety of talks given.
- Meeting the Director of NISER.
- Group discussions and having multiple perspectives in the room.
- Working through a specific example of an evaluation plan.
- It was useful to me, as someone who is not trained in evaluation, in how to set reasonable expectations regarding evaluation. The descriptions and examples for the two major frameworks for project planning/measuring impact were very helpful.
- I felt that making a Theory of Change model on an specific project and mapping the stakeholders for that project was incredibly useful.
- the group discussions and reporting.
- The hands on break out sessions.
- Break out groups
- The hands-on sessions were great to further networking opportunities.
- overview of program evaluation, a refresher of sorts
- The group discussions were very helpful and allowed me to get other people's perspectives on multi-site, multi-scalar evaluation.
- Finding out that NIMBioS tends to operate under a different school of thought than other than developmental evaluation.
- It introduced me to a lot of new material that I was hoping to learn about. It was useful in all aspects.
- Learning how a theory of change model is developed was the most useful part.
- I liked the breakout sessions, I thought they were useful in putting into action the concepts just learned.
- importance of stakeholder mapping
- The presentations were great and helped provide a wonderful overview of the world of evaluation.
- The fact that it focused on program evaluation.
- The variety of speakers and topics they covered. I knew very little about a lot, now I know a bit more.
- The small group break-out sessions were great for making the specifics of project mapping clear.
- The first break out session where the group worked on developing a theory of change model.
- hands-on workshops
- I very much enjoyed the breakout sessions in which we studied the individual case studies. That opportunity transformed the presentations into something more tangible and usable for me. It allowed me to bring back strategies on evaluating our program to my team.
- The breakout sessions enabled participants to work through a real life example.
- As a qual. researcher and consumer of evaluation it was really helpful to have an overview of the field and some specific processes evaluation teams use

Appendix E
Tutorial feedback

What would you change about the tutorial?

- Attendees have the option pre-select which breakout activity topic they go to versus it being selected for them.
- I would get rid of the online tutorial part, felt like they couldn't really participate without being in the room and it was distracting to those of us in the room as there were technical difficulties.
- More time for the hands-on work.
- More direction in the breakout sessions - we got a little off-track (although I still learned a lot).
- It would have been nice to have a little more time (maybe one less presentation and an additional hour in small groups) so we could spend more time on creating evaluation questions.
- More time in the hands on break out sessions. I felt that there was excellent discussion but it was often cut short.
- More beforehand work done so things can be refined. Examples of questions.
- More time in the breakout sessions. My group wasn't able to really get past a surface level logic model of the scenario. I also would have liked experience with the theory of change model like some of the other groups.
- Depends on the purpose, for overview was good, Q & A was great and participation was strong
- good as is
- I would make it at least two days long so that more could be covered more fully. The breakout sessions were too short and not enough was accomplished to help me fully learn and understand program evaluation.
- Not much. It was a long few days but there weren't any parts where I wished I'd slept in.
- More time for the break-out groups! (And less overlap with the 101 webinar—the webinar and AM talks felt a bit redundant)
- The case study assigned to our group. The representative was no longer working with the project and critical details needed for the activity were not available.
- more hands-on and specific methods on how to evaluate.
- I would have enjoyed more time in the breakout sessions. Our team had rich discussions, but were unable to get through each step of the Theory of Change model. However, what little practice we did have with it was very useful for me, and the discussions with the other team members were beneficial.
- I would not have everyone report back to summarize each project at the end of the day. Everyone is already tired at that point.
- I felt the breakout sessions, where we discussed evaluations models for funded INCLUDES projects got too bogged down in the details and didn't really help me understand different approaches to evaluate these types of non-traditional, community systems projects.
- For you to talk about different schools of thought and provide an overview, sort of like a vign flowchart for lack of a better word.
- Perhaps more time for hands on exercises? They were useful.
- Longer time for discussion in the break out groups
- I know the topic of evaluation vs research was covered during the tutorial, but I think it should have more prominence. I thought sometimes that the presenters had a hard time seeing the world through the audience lenses that everything is research and that evaluation is just like research.
- Using a case study for each of the breakout groups was challenging. These sessions were great for the person whose project was chosen because they got a ton of in-depth feedback, but I feel like I was at a major disadvantage because I knew next to nothing about the topic. Instead, I would suggest that these sessions focus on a unique project that none of the participants have any stake in. This will allow everyone to start from (approximately) the same starting point and have an equal contribution.

NSF INCLUDES Multi-Scale Evaluation Conference

Poster Session: Thursday Evening from 7:00-8:30PM

Poster Session 1: 7:00-7:45PM (odd numbered posters)

Poster Session 2: 7:45-8:30PM (even numbered posters)

Poster #	Name		Institution	Title
1	Jennifer	Albert	The Citadel, The Military College of South Carolina	Lessons learned from STEM Education evaluation
2	Kamal	Ali	Jackson State University	"Early STEM Engagement for Minority Males (eSEM) through a Network of MSIs"
3	Mehmet	Aydeniz	University of Tennessee Knoxville	Characterizing student engagement in model-based learning environments: Opportunities and Challenges
4	Elizabeth	Blume	National Society of Black Engineers	50KCoalition: Increasing Degrees Awarded to African American, Hispanic, Native American and Women Students in Engineering
5	Whitney	Bortz	Virginia Polytechnic Institute and State University (Virginia Tech)	CHEM+C: Integrating Computational Thinking in the Middle School Chemistry Context
6	Jennifer	Broatch	Arizona State University	CURE as a Research Experience for All: Preparing the Future STEM Workforce
7	Nikolay	Brodskiy	University of Tennessee Knoxville	Math GTA Mentorship Program
8	Sunshine	Brosi	Frostburg State University	Incorporating Intercultural Proficiency in Biology Courses
9	Wilella	Burgess	Purdue University	The ELRC's Collaborative Approach to Evaluation

10	Devon	Collins	The Rockefeller University	LAB-ASP: Impacts of Research Experiences for Students from Low-Resource Backgrounds
11	Lenora	Crabtree	University of North Carolina at Charlotte	Changing the Lens: Â Broadening Participation through Asset Framing and Culturally Responsive Pedagogy
12	Disan	Davis	The Rockefeller University	1230 Science: Accessible, Affordable In-School Research Projects for All
13	Susan	Eriksson	University of Kentucky	Lessons Learned from an Indigenous Evaluation Framework
14	Kasey	Fristoe	University of Tennessee Knoxville	GEOPATHS: Assessing Engagement of Students and Faculty at Community Colleges to Enhance Recruitment to 4-Year Geoscience Programs
15	Gregory	Goins	North Carolina A&T State University	Building Diverse and Integrative STEM Continua Using Socio-environmental Systems In and Out of Neighborhoods (DISCUSSION)
16	Timothy	Goodale	North Carolina State University	STEM Education Evaluation within an International Initiative
17	Gabriela	Hamerlinck	BioQUEST	Improving quantitative undergraduate biology education
18	Cynthia	Hampton	Virginia Polytechnic Institute and State University (Virginia Tech)	Evaluation Experiences in Engineering Education
19	Geoff	Hunt	American Society for Biochemistry and Molecular Biology	Outreach Seed Grant Programs Run by the American Society for Biochemistry and Molecular Biology
20	Anne-Barrie	Hunter	University of Colorado Boulder	Creating Academic Pathways in STEM (CAPS): A Model Ecosystem for Supporting Two-Year Transfer
21	Ellen	Iverson	Carleton College	A Multi-Site Collective Impact Evaluation: Engaging Local Communities in Geoscience Pathways
22	Overtoun	Jenda	Auburn University	South East Alliance for Persons with Disabilities in STEM (SEAPD-STEM)
23	Kristin	Jenkins	BioQUEST	Improving Quantitative Undergraduate Biology Education

24	Gregory	Kranich	University of Maine	University of Maine's Follow a Researchers' Program: Using Graduate Student Field Research as a Framework to Incorporate Next Generation Science Standards (NGSS) Practices in the K-12 Classroom
25	Kathy	Malone	Ohio State University	Modeling Biology Instruction
26	Meghan	Marrero	Mercy College	STEM Education Programming at Mercy College
27	Melissa	McCartney	Florida International University	Annotated Primary Literature: Who is learning what?
28	Carolyn	Nichol	Rice University	Evaluating STEM Teacher Professional Development: Successes and Barriers
29	Emily	Sherwood	University of Tennesee Knoxville	Literacy Needs and Opportunities in the Lincoln Park Community
30	Chitra	Solomonson	Green River College	Introducing Research Experiences in a Community College
31	Linda	Thurston	Kansas State University	Students with Disabilities in STEM: Considering the collective impact of a decade of NSF funding
32	John	Tillotson	Syracuse University	The Strategic Undergraduate STEM Talent Acceleration Initiative (SUSTAIN)
33	Ben	Van Dusen	California State University Chico	The Learning About Supported Student Outcomes (LASSO) Project
34	Noemi	Waight	State University of New York (SUNY) Buffalo	How School Leaders Promote STEM Programs and Support STEM Enactment in a High Needs Secondary School in Belize
35	Sarah	Weisberg	BioBus	Promoting neuroscience outreach in New York City with Cell Motion Laboratories
36	Mary Aleta	White	Arizona State University	A kind of Gestalt: Using synthesis to improve theory in STEM education research

What was the most useful aspect of the conference?

- Individual conversations; presentations that had specific examples. I made some great connections and got a few useful ideas, but not as many as I hoped for.
- The final session I attended given by Pam that discussed the aesthetics of evaluation reporting and the importance of how you communicate your findings was helpful.
- Finding out more about the INCLUDES grant, which I was not previously clued in on. Also, finding out more about the different between research and evaluation.
- The discussions were very productive.
- Small group discussions where we could share experiences and offer suggestions
- The various topics covered and the open dialogue discussions.
- Engaging with subject matter experts and the professional practitioners involved in multi scale programs.
- Speakers were engaging and knowledgeable about what they presented.
- Networking with other evaluators.
- Smaller sessions were definitely the best. Some facilitators were better than others, Melvin was fantastic, and so was Frances, others less so.
- As with most conferences, interacting with colleagues from around the country was very useful. I did gain a lot from the presentations also. The conference was organized well and everything went smoothly. The poster session was good since I was able to learn about the good work that other people are doing. However, I was not able to read/visit many of the posters (not unsual).
- I liked the break out sessions, but I wish that they were a little more focused in their presentations.
- Connecting with others in the field
- I enjoyed getting to network with folks that attended and all the presentations were great
- The ability to ask questions of expert evaluators and have them answered in a very honest way.
- I really enjoyed the various presentations especially the presentation on cultural awareness with respect to evaluators. I also enjoyed the interactive activity lead by one of the speakers on the second day. It added variety to the format which was nice.
- 1) the opportunities to discuss and interact with other participants, 2) Melvin Hall discussion group
- The engaging speakers with inspirational stories. I also loved having all our meals together. That really helped with networking. The fact that it was paid for was also really a nice plus.
- Excellent choice of speakers.
- Group discussions and group reportings were very useful.
- Networking with others
- The discussions focused on equity and cultural competence.
- the networking
- I learned quite a bit about the job prospects for evaluation and some key lessons for being aware of approaching diversity.
- Some of the speakers were great. The networking opportunity was great. I really liked the poster presentations.
- It was interesting to hear what the speakers identified as important to creating successful programs for underrepresented students, and it was interesting to hear about the different types of programs that participants have developed.
- The breakout sessions were a great way to be able to interact and ask questions, and a break from just receiving information.
- Networking & conversations amongst colleagues regarding how others are approaching program evaluation; understanding that the evaluation needs/processes for larger collaborations/partnership based projects still needs a lot of thought & problem solving
- As a more traditional researcher, the opportunity to be exposed to new methodologies was the most useful. This aspect of the conference was great.
- The opportunity to hear from others, engage in discussions around issues concerning evaluation of different size projects in different contexts and catering to different purposes.
- Networking, sharing of projects
- Learning basic principles of evaluation - I came in with very little background and left with a broad knowledge of the value and deliverables of evaluation
- Networking for me was the most useful aspect.
- Networking and group discussions.
- The information provided
- I enjoyed networking and some of the speakers. I also found the session on evaluation reporting and data visualization to be of use.
- networking with other personnel from INCLUDES projects
- Hearing about people's case studies and experiences.
- The informal discussions.
- I really appreciated the talks, they were very informative about evaluation as a whole and then how evaluation might work within the INCLUDES framework.
- presentations/discussions that were specific to evaluation
- The opportunities of networking, and not only the intellectual talent of the presenters, but also their human qualities and how they were very open to offer help in the future.
- I thought the discussions about large projects and how they were run and the meaning and significance of the evaluations was most useful. Also the networking during posters was good.

What was the most useful aspect of the conference? – cont'd

- meeting investigators with similar interest
- The presentations on evaluation.
- As a PI, I learned a lot more about evaluation and can have improved communications with my project evaluation team. Also, I have a deeper understanding of cultural considerations and strategies for improving my teams ability to recognize cultural influences on outcomes.
- I liked the idea of it!
- The presentations and discussions were excellent.
- The poster session was a good chance to see what people are doing and here about different approaches to how they evaluate their programs.
- There was very little that was useful. The conference focused on broadening participation and the majority of speakers spoke about their personal experiences. Their stories were powerful, however, they had little program evaluation content, and it was difficult to connect the tutorial with the conference content.
- Again, variety of speakers and topics, then one on one sessions to ask direct questions.
- The presentation titled "Evaluating STEM teaching and learning innovations at multiple scales" was the most interesting and useful.
- Having a chance to interact with evaluators, NSF staff, and others running programs like myself.
- Meeting people interested in multi-scale, multi-site evaluation. Being able to discuss ideas with other participants.
- Breakout sessions
- small-group discussions
- I really enjoyed the whole group presentations. I felt the section of presenters was very beneficial. Their insights and thoughts allowed me to understand the nuances of implementing and evaluating programs.
- The breakout discussion sessions were the most insightful and enabled participants to broaden their conceptual views.
- Speakers from diverse backgrounds
- Some of the presentations that focused on INCLUDES were very helpful. Some of the presentations were really unhelpful and could have been replaced with topics that would be more useful or presented more effectively.
- Networking...productive exchanges with colleagues....
- the breakout sessions
- Opportunities for follow-up, one-on-one conversations with participants and presenters.
- The poster session.
- Great speakers!
- The interactions during the break out sessions
- The tutorial was for me. And networking w others interested in includes
- Networking; meeting others with similar interests and ambitions. The diversity of the participants. Very different from the people I usually find in the room. The variety of disciplines and backgrounds and demographics.
- I think the networking aspect of the conference was the most useful part.
- The variety of perspectives.
- Discussions with colleagues
- Although I did not attend the tutorial, I watched some of it online. It was very helpful to do some step by step movement through someone's problem in order to see how their problems could be addressed.
- The second days presentations were more at my level and showed the application of the evaluation more clearly.

What would you change about conference?

- The conference didn't really 'teach' on multi-scale evaluation methods, as I thought it would. In addition, though I only had the chance to go to two breakout sessions, neither were helpful. One presenter said that he was only their to facilitate and it was obvious that he did not know the methodology and techniques used to develop valid and reliable surveys. The other breakout session focused on how to make report visually pleasing. I evaluate federally funded programs with research outcomes that have several important implications. The officers from these programs expect the reports to include rigorous statistical analyses of the data to show whether the program activities are actually working; yet, none of the ideas presented touched on such things.
- Fewer talks and more break-out or small-group work. There were lots of people with different agendas and it could have been helpful to let people self-select for a few of the talks and add a few more small group topics.
- Shorter talks, more focused group work.
- depth of program evaluation, seems most sessions were at 101 level vs what is unique and innovative or robust in the field.

What would you change about conference? – cont'd

- I was expecting more nuts & bolts, more examples of evaluation designs and instruments, and more discussion of the different challenges or strategies for addressing evaluation at small scale (individual) level, medium scale (program, institution), and large scale (consortium or partnership) level. The presentations were too basic and vague and almost seemed more about defining the INCLUDES idea than about evaluating.
- More sessions on the how - to of evaluation. Even down to how to structure a final evaluation report, or a session on evaluation consulting/negotiation/communication. Data driven evaluation and tools that can be used to represent data the best. Evaluation collaborations, etc. Also, providing some additional conversation on cultural context in evaluation and the importance of realizing our own cultural incompetence and how to respond to them when doing evaluation.
- Not sure.
- Inviting folks to talk about personal stories.
- Have more small group discussions. Some of the larger presentations were interesting but did not match the conference description of evaluation at multi-site programs. Further, it would have been helpful if the evaluators were given a different track so that more advanced topics could be discussed (for example, appropriate use of surveys, etc.)
- Opportunities for follow up interaction with the guest speakers based on areas of interest.
- Increase time for the group discussion portion of the conference.
- The conference was not what I expected. In fact, very little of the content was specifically about evaluation outside of a couple of the whole group sessions and the two breakouts. Also, attendees need down time to digest. The conference went from 8AM to 8PM, with networking at all down time, including meals. As I didn't want to miss any of the talks, I got pretty burned out by the end.
- The conference seemed geared for participants with introductory and intermediate/advanced levels of knowledge about evaluation. As a long-time evaluator, the first day's sessions were too basic for me. Additionally, the day was filled with lectures, with minimal time for networking and discussion. The second day was much more interactive, and gave the evaluators time to consider the multi-scale issues they'd come to explore.
- Less lectures, they were too long and not all the speakers were great/relevant.
- The presenters were very knowledgeable but the length of the talking portion and the number of talks versus interactive methods made it less useful.
- I agreed with the attendee who said that there was very little mention of "multiscale evaluation": per se. This was disappointing, as I had hoped to learn more about the best strategies for evaluating complex projects. However, the presentations were compelling.
- I originally thought that I would learn about STEM evaluation at the conference. Perhaps the tutorial dealt with this? I was not accepted for the tutorial so attended only the conference. The conference seemed to focus on drawing a diverse group of folks, drawn from different demographics, geographic locations etc. We then attended a lot of presentations, presented posters, attended breakaway sessions and reported on it. But why were we there? I don't think it was to further our skills on STEM evaluation. Perhaps it was an experiment to show to NSF that it is possible to drive such a coalition of faculty from diverse institutions for a common goal? If so, is there a follow-up with these faculty members? This is not a criticism but I was genuinely puzzled about the overarching goal. I think I gained a lot from the conference but it would be nice if this community could be sustained. I am guessing that was not the goal of the organizers? I would like the goal of the conference to be stated clearly to the participants along with the outcomes. And then perhaps have some "meaty" questions posed to the audience to work on. There has to be a better mechanism to form a community than to just exchange cards. This community can then be encouraged to work on these questions even after we scatter from the conference location.
- Unfortunately, the presenters repeated information in the break-out sessions. I attended one the first day and it was repeated the second day.
- I think participants came with very different expectations, and many people wanted to learn practical skills for developing an evaluation plan, so it was hard to stay productive. More workshops like the tutorial would have been better
- The reason I marked "disagree" for the conference met my expectations was that I thought the event was going to be presentations on various approaches to implementing multi-scale evaluation. I enjoyed the conference very much but I had hoped to get more tips in this specific area. It was likely my misinterpretation of what the event was supposed to be but a few other attendees made a similar comment to me in our discussions. So, I would have liked there to be more specific training offerings surrounding this evaluation approach. It seems perhaps this was discussed some in the tutorial part that I did not attend because I thought that material was supposed to be only introductory.
- More structured networking time like the breakout sessions.
- I really enjoyed the conference and thought it was a good length of time. I don't have an INCLUDES project and I'm relatively new in the field of Evaluation, but I think if I had an INCLUDES-type project it would have been nice to do some sort of exercise (like creating a T.O.C. model) during the conference, for those who weren't at the tutorial.
- Nothing. Very well organized conference.

What would you change about conference? – cont'd

- More focus on scale in general and scaled research/evaluation models on a shoestring budget. Whereas I found the broadening participation topics very interesting, I had hoped to expand my expertise in looking at different evaluation models that are scaled.
- The days were a bit long and the first day was way over my head. I did not find the breakout sessions to be particularly engaging or helpful.
- Make it more advanced for experienced evaluators.
- Adding content about social innovation approaches and how to apply them. Implementing programs at multiple sites and/or at multiple levels doesn't relate to the distinctiveness of using social innovation approaches, which is the defining feature of the INCLUDES program.
- more connection of the conference goals to all the discussions and presentations.
- Make it more hands-on with specific examples. Some of the "leaders" didn't know very much more than the audience and weren't prepared. More outreach with social scientists who do ethnography.
- Not sure.
- More time to network
- The conference was, for the most part, fairly high level. It would be useful to have some working groups that address issues at a more ground level.
- More time for posters.
- The breakout sessions were disorganized for the most part, and mostly useless.
- The break-out sessions were not useful, there were too many disparate ideas/backgrounds/interests to garner any useful conversation
- more evaluation components. While the broader audience presentation were interesting, I did not anticipate them based on the abstract for the conference.
- The range of experience of participants was so wide that it was very challenging to find participants who shared similar goals. As a result, the break out sessions were not broadly helpful. Only one speaker actually focused on the evaluation process. The others were interesting, but were talking more about other important aspects of program development and management. It would also have been good to focus more on the INCLUDES program, perhaps with more information about how the program is developing, next steps, etc. or elucidating some of the key ideas in INCLUDES that are foreign to many sci ed folks such as "Backbone organizations" etc. I still do not have a good sense of what an evaluation of an INCLUDES coalition would focus on.
- Some of the speakers missed opportunities to connect their programs/projects with specifics about evaluation.
- More emphasis on the actual skills/techniques of program evaluation in a multi-scale environment...I really didn't come away feeling like I learned more about HOW to do the evaluation effectively.
- The small group sessions could be more focused. Some were led by individuals who had no expertise in the area. Was not very useful
- The breakout sessions were poorly run - both I attended were basically just the expert saying what questions do you have. They could have been a little more structured/facilitated. I also don't think the bigger question of "how does multi-site evaluation operate" was directly addressed. Few speakers had experience in that directly.
- The description of the conference was vague on the web page. I heard this same sentiment from at least four other participants. It was difficult to determine what the specific audience was and what the objectives of the conference were. In my own case, this meant that most of the sessions were too elementary for me - i.e., I could have been the presenter.
- I thought the focus needed to be adjusted. Although I really enjoyed the conference, I thought there was an overemphasis on why we need to broaden participation instead of a focus on how do we evaluate big picture, systems approaches to evaluation the impact of efforts towards broadening participation. I wanted more information and discussion on how we measure if we are moving the needle. The conference seemed to focus more on the importance of moving the needle, and I think all of us involved in the conference totally get why we need to move the needle. There is more ambiguity regarding best practices, long-term and short-term, on how to measure that.
- After the tutorial, I was primed to go really in-depth into evaluation: how it's done, what you need to do, what resources are available, etc. Instead, I found the conference to be a grave disappointment. The presentations, while moderately informative, did little to advance my knowledge about evaluation. The open discussions were more useful, but the focus on existing INCLUDES projects did nothing for those of us who are not (yet!) funded by the program. I realize it's difficult to provide answers since everyone has different approaches and not every issue can be answered. But the marketing of the conference made it seem like the perfect place for those who are new to the field to get up to speed about the major topics and components related to evaluation. I would like to have had group work on case studies in evaluation, taking advantage of the knowledge and experience of the NIMBioS staff.
- I would make the tutorial at least two full days, and shorten the conference to one day, making a stronger content connection between the two. I would also focus both heavily on program evaluation methods and exercises, rather than diluting the content with personal stories about broadening participation.

What would you change about conference? – cont'd

- The conference didn't really 'teach' on multi-scale evaluation methods, as I thought it would. In addition, though I only had the chance to go to two breakout sessions, neither were helpful. One presenter said that he was only their to facilitate and it was obvious that he did not know the methodology and techniques used to develop valid and reliable surveys. The other breakout session focused on how to make report visually pleasing. I evaluate federally funded programs with research outcomes that have several important implications. The officers from these programs expect the reports to include rigorous statistical analyses of the data to show whether the program activities are actually working; yet, none of the ideas presented touched on such things.
- Fewer talks and more break-out or small-group work. There were lots of people with different agendas and it could have been helpful to let people self-select for a few of the talks and add a few more small group topics.
- The conference could have been a day longer, with more times to work through real/fictional problems. The act of practicing a mock evaluation is more valuable than you realize and it was helpful to watch during the tutorial.
- Limit the audience to people who have multi-scale, multi-site projects or intending to operate on this scale. There were a lot of people who really don't have these ideas and were primarily interested in single site type project designs. Since this is an INCLUDES evaluation workshop, I expected more discussion about what collective impact (CI) - the hallmark of INCLUDES - means and how to evaluate CI. But there was no presentation about that and I felt most people in the room did not know what CI is about. I also felt that was collusion of multi-scale and multi-site concepts. The set up as theater style was a barrier to participation among participants. Would like to see round table set up.
- The presentations were too long
- perhaps more opportunity to discuss specific evaluation methods.
- The conference breakout session I attended was less structured that I would have liked. For conferences I select breakout sessions that are most relevant to my area, and offer tools, strategies, and resources to move forward in my area. Unfortunately, the breakout session on assessments was too open-ended. The audience took over from the presenter, and I left not feeling I had a clear understanding of assessments in evaluation, useful assessment strategies, or assessment resources to utilize with my team.
- The presentations were too long. I would decrease the time spent on talks to allow for more group discussion or simple networking time. We were pushed through a variety of great activities, but there wasn't enough time to network in between. I also might be good to conclude the conference earlier on Thursday evening to allow attendees to explore your city.
- I did not like the breakout sessions I attended, I know there was supposed to be some discussions but I think the leads of the sessions were not prepared to spark the discussion. I think the presenters were really good, but I thought the conference was going to be more related to INCLUDES, and how INCLUDES is going to move forward. The purpose of these conferences were to inform the backbone, this national organization that will keep the alliances moving forward. I did not see any of that.
- The re-hash of break-out sessions was a little chaotic and I didn't get much out of that, but I'm sure others did.
- good as is
- Have more on scaled evaluation.
- Nothing.
- There should be separate tracks for the participant types: evaluators, grantees or those wanting a grant, general interest group? And the sessions should be tailored to the needs of the participant groups.
- I thought there would be more on theoretical approaches to examining large scale projects.
- reduce number of PowerPoint presentations
- Lodging was nice; could have been closer to the mtg space.
- Nothing comes to mind...
- Having meals provided was nice, but it also didn't give us any time to see Knoxville.
- I was a little mislead by the conference advertisement. I thought we were going to learn how to design surveys, etc that would be relevant to our STEM work. I guess this is what happened at the tutorial and maybe that is where my confusion started...I attended the wrong part of the conference. I didn't feel like the conference really taught me much about how to evaluate my own programs.
- I thought the conference would be more tactical in focus.
- I would have more discussion about specific ideas of how to produce an INCLUDES proposal.
- Some of the presentations were not very focused on evaluation. Would have liked more case studies and discussion of how evaluation moved the project forward
- I would have liked more consistent focus on issues directly related to creation/management of large scale evaluations and alliances. Some of the presenters were talking about other topics. They were interesting, but not the reason I came to the conference.
- I don't think the conference lived up to the name. I think the idea of being multi-scale (FYI, the entire reason I attended the conference) was not discussed in enough detail. It was barely touched on. I also would change the level of detail of information discussed. I realize there were varying levels of skills at the conference, but I really felt like much of the information presented was quite basic, and I would have expected more advanced information to be presented. While I enjoyed the conference, I was a bit disappointed in the content presented. It was not what I imagined it would be.

Appendix G Conference Feedback

Comments regarding conference meeting expectations – Yes responses

Tutorial/Conference participants

- I did experience an interaction that skewed my view somewhat of the conference. I would say that cultural context is everything. The other participant, who was also a presenter, felt the need to express their feelings about various ethnic groups and why encouraging them into certain STEM careers was not good because of whatever cultural misconceptions this person had about that group. Some type of workshop, statement, or discussion first thing in the conference could help to set a tone for what is valued regarding the conference, especially when dealing with broadening participation.
- I learned so much about program evaluation (from knowing nothing) and came away feeling like it's valuable and constructive for developed programs to take part in this process. I loved the focus on the cultural aspects of evaluation because we have previously shied away from evaluation because we felt that "butts in seats" or who gets what degree were not reasonable metrics of success for our programming.
- I really enjoyed the conference and learned a lot about program evaluation during the tutorial and conference.
- I'm not sure I was exactly the target audience, but I learned a great deal and found the experience and networking opportunities very useful.
- I'm really glad I attended the event. Also, thanks for making all of the material available!
- It was a very helpful conference and tutorial session. Some parts felt long, especially those lectures that were more than an hour. A lot of intros to staff at NISER and the tutorial day felt a little too simple at times.
- Thank you so much, the conference and tutorial has helped me approach working with evaluators in a much more collaborative, focused and realistic way.
- The event was well-organized and responsive to the needs of participants, which was much appreciated.
- Very well organized conference.

Conference only participants

- Generally, it was great event. Meeting and working with people not in my area of expertise was professionally rewarding.
- I didn't come with many expectations, so I was not disappointed.
- I enjoyed the variety of participants and speakers at the meeting. It was really put together well and allowed me to understand how culture influences the evaluator and the evaluand.
- I like the concept, however should be advertised for expertise level, novices would find great benefit, those heavy into program evaluation this was more of a networking event.
- I'm not an elevator, so I learned a lot about the how and why, of questions we're asked and the importance of gathering much of the information that we're asked for, I have a much greater appreciation for the process now. It was a very worthwhile conference for me.
- It met my expectations because of the participants involved and the availability to discuss ideas with presenters following /preceding their talks. The presenters were very well chosen. I made many useful contacts. It also gave me more of an idea of how NSF is thinking about INCLUDES.
- It was a wonderful conference. As a novice in program evaluation, this conference provided a great introduction.
- It was very well organized. Thank you
- Overall, this was a great conference! Thank you for putting it all together. (Also, the food was fantastic!)
- Thank you for the invitation to participate. It was a very good conference.
- The events provided multiple opportunities for learning, networking and collaboration.
- Yes, in a broad sense of "I didn't previously know much about evaluation of any kind" but not in a specific sense of "now I know a lot about multi-site, multi-scale STEM program evaluation"

Appendix G Conference Feedback

Comments regarding conference meeting expectations – No responses

Tutorial/Conference participants

- I guess I would have liked it to have been more like the tutorial in nature. I found the tutorial to be much more informative and engaging.
- I think that I was expecting more guidance and instruction. However, I now have a better appreciation of how complex evaluation is, and that this may not have been a realistic expectation.
- See previous comments. It seemed like the conference was trying to be too many things, rather than focusing on one specific topic (i.e. multi-site evaluation). There is a great thirst for knowledge in this field, which the organizers have. I would have liked to have had more opportunities to see how that knowledge can be applied. Also, dinner at 5:30 PM is way to early.
- Wanted more of a focus on different approaches to evaluate collective impact.
- As previously stated, the conference did not create a continuum of knowledge-building in program evaluation. The tutorial was the most effective aspect of the three days, but was altogether too short and too rushed. In the future, having three days of program evaluation skills-building exercises/tutorial would be more effective for me personally. Also, during the conference, each of the breakouts I attended began with the expert leader saying something to effect of: "I didn't prepare anything for this session but would be happy to take your questions." How can a presenter not have prepared anything for a long breakout session? How can someone who knows little about the subject come up with questions in a way that fills the session and creates a strong learning environment? For me, personally, I was disappointed with the conference, as I had misconceptions that the three days were going to help me understand how to engage in effective program evaluation. I did, however, appreciate how wonderful the staff was and how much time and effort they placed into making the event a success. I greatly appreciated all the staff and their attention to the details that made my personal stay very comfortable and enjoyable!

Conference only participants

- I would prefer a response of "partially" to the above question if the event met my expectations. I expected more focus on large scale evaluation. There was some of that but not enough. On the other hand, my expectations about meeting a diverse audience of enthusiastic engaged people was met.
- As mentioned, I was expecting more technical presentations on multi-scale evaluations and possibly some case studies. That simply did not happen. On the plus side, it was instructive to review how evaluations can go wrong.
- As stated previous, I was hoping for more discussion on evaluation at scale: multiple sites and across multiple scales, and how projects are doing this on a shoestring budget (what Includes provides) This was not an emphasis during the conference.
- I actually learned quite a bit from this event, but it was not what I was expecting. I have very little evaluation experience, so I was expecting to learn more regarding how to approach evaluation projects and how to decide what type of data to use. But this may have been my error in that I had different expectations from how the conference was advertised.
- I did learn a lot and gather some good ideas. However, I really was expecting more of a focus on us learning more about the HOW's of multi level, multi scale evaluation...to have tools/techniques to take back with us.
- I expected sophisticated presentations on multiscale multilevel evaluation. There was more focus on cultural competence and other issues - I am very knowlegable about these issues and basic evaluation, so there was not much to learn from this conference.
- I expected to be spending a lot of time exploring different aspects of program evaluation, specifically evaluation of large scale projects, and in particular delving into INCLUDES. I didn't really feel that's what happened at the conference.
- I marked 'no' only because I expected to learn about STEM program evaluation (I am a novice) and I don't think that was the focus of the conference. So if I had "reset" my expectation, maybe I could mark this as a "yes". As I said earlier, I enjoyed meeting people, I learned a lot from the speakers and the posters. Special kudos to the culinary arts program - I loved the way the head chef came out and introduced the chefs who cooked the meals. The food was great! BUT, I am not sure I came away learning a lot about the multi-scale STEM evaluation, which is what I expected to learn from the conference!
- I think I should have attended the pre-conference tutorial session but wasn't aware that this was an option. I was looking for more of a hands-on, entry level conference on evaluation.

Comments regarding conference meeting expectations – No responses

Conference only participants

- I have shared my thoughts on p. 1. Some additional comments. I liked the presentations on cultural context and some of the other presentations but I didn't feel they came together for me. I left feeling I have not gained any new perspectives or techniques or directions to advance my understanding. Because we mostly talked to people we happened to be sitting with - I found I was mostly with those who were at the very beginning stages of evaluation and they were thinking of single site projects. So I did not benefit from that interaction. I felt I was giving more than gaining - which is ok. But organizers could help facilitate networking by placing us in groups where we might also be among those who are ready for multi-scale multi-site evaluations. We need both mixed groups and groups among those of a certain level of understanding. We are not able to tell who those might be on our own in such a short time. In one of the workshops I attended, the facilitator actually decided unilaterally that she was NOT going to talk about multi-scale. She just wanted to talk about multi-site and admitted that was because she was interested in that. I was rather disappointed that a facilitator would only focus on her own personal agenda. It is probably not necessary to have panelists "answer" questions. I enjoyed hearing from the experiences of participants and their answers.
- I really don't think the conference delivered on the promised topics. We did discuss diversity, but we did not discuss multi-scale evaluation or what alternatives to evaluation might be. Also, I went to the breakout session on report writing, and I got the impression that the speaker didn't prepare at all. I felt like she was so busy with the rest of the conference that she decided to do her presentation off the cuff and try to "play it off" as molding the session to what the audience wanted.
- I think it was a valuable event. However, I was expecting more advice for the "feet on the ground" for example resources, connections to methodologies that evaluation experts use, or tips on how to find people who could implement evaluation if it is beyond the scope of our team to do. Instead, it was quite theoretical and address the larger issues surrounding evaluation. This was useful, but didn't leave me with a feeling that I would know what to do next. I hope this is helpful.
- I think overall it was a valuable experience, but it was very different from what I expected.
- I thoroughly enjoyed the conference. As noted earlier, I thought there would be sessions addressing specific strategies to standardize evaluation across projects.
- I thought it would be more tactical in focus. The breakouts were useful but there could have been more time devoted to them. However the keynotes were also interesting. How to decide??
- I was expecting more hand-on actual evaluation experience - working through how to evaluation programs.
- I was very disappointed. I'm not sure who the target audience was, but it felt like evaluation 101. The venue and logistics were great, I met some interesting researchers but didn't learn much that I couldn't have googled. The multi-site evaluation promise wasn't delivered and I thought NISER would have great things to share, like resources or tools, but nada. I kept thinking of the amount of money it took NSF to sponsor that workshop and wish it had been invested better, especially because the INCLUDES goals are so lofty and (seemed) exciting/cutting edge.
- I'm not sure I felt that the presentations had much to add to my knowledge of any of the topics listed. Even in the case of cultural context, which I believe the presentation was very effective (and I have some experience with this), the presentation was more about why it is important than how to implement it.
- Sadly, no. I really thought there would be more about evaluation.
- See previous comments from "what would you have changed."
- The first day of the meeting was too basic, and offered few opportunities for networking and discussion. The second day was much more interactive and productive.
- Too basic for a relatively experienced evaluator.
- While I definitely enjoyed the event, I did not find much information available about multi-scale or multi-site evaluation which was my main reason for attending. It felt like we never really got there. The one session I attended whose title directly addressed those topics was poor, the presenter was not well prepared and/or just did not have depth of knowledge on the topic unfortunately.
- While the conference was extremely organized and well done, it billed itself as an evaluation conference but almost every presentation was on a different topic. There were two very useful full-group sessions but the others were off topic. I was really hoping to leave the conference with some additional evaluation tools under my belt. However, I did leave with some wonderful networking connections.

Appendix G Conference Feedback

Comments from participants regarding the conference experience

- This was a great opportunity for learning and knowledge sharing. More events like this should be to build upon the knowledge dissemination that occurred during this conference.
- It was particularly helpful to have the conference call the week before.
- Covered all bases...(and even anticipated possible "bases"...and covered them)
- Communications were timely, instructions clear, and planning comprehensive
- An excellent experience, in terms of both the organizers and participants. I would certainly do it again if invited.

Additional Comments

- Overall, it was a great conference and networking opportunity.
- Overall, it was a very nice conference as it was organized well and it was great to network with others. The biggest issue was that the topics did not align with the title that was given and some of the presenters although very engaging were off-topic or did not seem to really know the details of the topic (for example, the qualitative research). Further, it was too lecture-based for the audience. Last, it would have been wonderful if there was time set aside to explore Knoxville (even for an hour or two) or just some time to unwind a bit as Thursday was very long (12 hours).
- Thanks for all you did to make this meeting a success! I know how much work it takes to organize and implement such a large conference.
- It was certainly a worthwhile conference, but not strongly targeted at INCLUDES projects -- ongoing or future. Shouldn't there be consideration of how to evaluate the Collective Impact model that NSF is recommending? Not much mention of Common Agendas, Shared Metrics, etc. There were only 5 or 6 INCLUDES projects that participated. Everyone there was very friendly and serious, so I enjoyed that a lot. The venue was great and I am grateful to the conference sponsors for all of their work and dedication.
- I do appreciate the opportunity to attend, it just did not meet my expectations. While all of the presentation were well done and certainly timely and important topics, most were not related to practical aspects of evaluation.
- Thanks for the opportunity to participate in this event!
- Well worth my time. The financial support was much appreciated. Am eager to see the slides from some of the presentations. Thank you for organizing this!!
- I thought the conference was great (even though it was different than what I expected)! I appreciated the opportunity to attend (especially not having an INCLUDES award) and look forward to other offerings of this type from NISER. You have a great team, and I valued my time getting to learn from all of you. Thanks again!
- The conference was really packed in with full days and not enough break time and mingling time. The poster session was not very useful because people were so burnt out by that time in the evening. I would have liked more time to get feedback on my program from other attendees.
- This was a very useful conference that provided the type of information that both evaluators and program administers would indeed benefit.
- The conference center amenities were excellent for this type of meeting.
- Something about the step by step process of evaluation. This was covered in a piece-wise fashion, but something that laid everything out right away could be helpful for novice evaluators.
- Again, this conference was perfect for me, because I come from an internal perspective. I learned how I can be more efficient as a program coordinator in achieving our goals. I loved being able to apply the Theory of Change model and realized how I can do this on a daily basis as the "internal evaluator". I'm already big on utilizing formative assessment data to drive programs, so this enabled me to more clearly map out our challenges, initiatives, and activities.
  The NIMBIOS/NISER staff, representatives, and presenters were very professional, welcoming, and conversational. It made the transition into working and interacting with others much easier. I also want to thank you all for the assistance in travel funds, and the delicious meals provided. Financial concerns always make going to conferences difficult, and y'all made sure this was not a problem for folks. THANK YOU!
- Generally well done!
- The whole team was just lovely, and the hospitality was exceptional.
- I really enjoyed meeting a brand new group of people who work in a similar, yet unique, space. I think there is a lot of interest in this topic, and it was nice to see that there are resources and experts who can help make evaluation relatable. Hopefully the organizers will use the feedback to host another of these workshops. I would definitely be interested in participating in future efforts.
- It was a great conference. Well focused and well organized!!
- In spite of the fact that the event only partially met my professional expectations and I was slightly disappointed, I am very glad I attended. I got a lot out of the interactions I had with people, and I have made several connections that are already being followed up on with potential collaborations. The arrangements, the food, all the logistics were excellent. Thank you.

Additional comments – cont'd

- Thanks!
- Thank you for being incredible hosts and organizing and informative and useful conference. One suggestion is that the days were extremely long, and there may need to be more informal "down time" to allow for networking.
- I want to thank the staff again for all of their efforts to make my personal experience very pleasant and comfortable. The idea of having the culinary school provide the lunches was very creative and resulted in amazing culinary experiences! The selection of the hotel was great, despite the dinners at the hotel being banal. The attention to every detail in the planning and execution was exceptional. Thank you for the opportunity to attend. I hope to be a part of other more extensive program evaluation skills-building sessions in the future.
- Thank you for the opportunity. I liked that the NSF evaluators were also there. I would like to hear other INCLUDES awardees on what they are discussing and doing for evaluation. I would like to see folks from the collective impact community - e.g. the originators of the concept help us walk through evaluation and give us examples of how collective impact approaches made a difference. More hands-on less lecture. Thank you again.
- Not having tables to work at was very problematic - a lot of people lined the walls on the floor so they could better manage their computers. Having the conference stick to the advertised content would have been good. Having an experienced evaluator manage the conference would have been more respectful to experienced professional evaluators.
- Overall, I learned a lot at this conference. Great exposure to program evaluation. The food was awesome!
- I loved it. I loved the content and the feel of being a beginner in area.
- Without going into great detail, there was a very uncomfortable conversation that occurred at the table I sat at during the Welcome Dinner. A conference participant (and presenter) expressed concerning opinions such as why are we pushing minority students and disadvantaged students into STEM when there are no jobs there. The person continued with statements such as due to a lack of jobs, these students may be better off helping their families by working on the farm; why are we giving them false hope. There were minority women sitting at this table including myself. A couple people at the table questioned her statements or interjected facts that countered her argument. She would typically 4 with their counter-argument and re-direct her opinions to a different minority group that perhaps they didn't know as well. It's really not worth re-telling all the events of the conversation but I found it very disturbing that someone who is a well known evaluator, evaluating programs that address STEM education and broadening participation would have personal views and opinions that seemed in contrast to the work she is evaluating. It made me question, how can she objectively evaluate these programs and truly understand the participants she is writing about when her logic is heavily skewed.
  After this incident, I was pleased to hear Melvin Hall's talk on the importance of culture and context in evaluation. However, I wonder how many evaluators really take note of their implicit biases and consider how these biases can affect their work.
- I think overall, the conference was very well organized. The speakers were knowledgeable and entertaining! Some of the discussions among the participants were illuminating. There was some time for networking. However, as I pointed out earlier, the title of the conference was misleading. I was hoping to LEARN about multi-scale evaluation. I think, from the organizers perspective, the goal was somewhat different? I learned a lot through interactions with the folks there, the speakers were inspiring! All in all, it was a good conference - it did influence some of my perspectives on evaluation and made me think about it. But it was a significant time for me to be away from my classroom and I was a bit surprised that the conference really did not ADDRESS multi-scale evaluation. Or if it did, it was not obvious to me! Thank you for all the hard work you put into the conference - it was very well done!