

QUALITY EDUCATION FOR MINORITIES (QEM) NETWORK
PROFESSIONAL DEVELOPMENT WORKSHOP ON
FUNDAMENTALS OF RESEARCH IN STEM EDUCATION
EMBASSY SUITES HOTEL, NEW ORLEANS, LA
OCTOBER 26-27, 2007

DRAFT AGENDA

Note: Participants supported by QEM are expected to take advantage of the free Full Breakfast available each morning at this Hotel.

DAY ONE – RESEARCH FUNDAMENTALS

AM

8:30 *Welcome, Purpose, and Introductions*

8:45 Plenary Session: *Research in STEM Education*
(*Background and Context:* its Origins, Development, Current Standing, and
Guiding Principles: Educational Research Standards)

9:30 Plenary Session: *Research Design – Asking the Right Question*
(What is meant by Research Design? What attributes should a research question satisfy for the question to be deemed important to ask? What are some of the common forms/ types of research questions?)

10:15 *Break*

10:30 Four Concurrent Working Group Sessions: *Asking the Right Question - Case Studies*
(Participants assigned to four Working Group Tables [with Group Leader and Reporter] identify/formulate significant research question(s) for assigned case studies)

11:15 Plenary Session: Working Groups Report and Wrap-up Discussion
on *Asking the Right Question*

PM

12:15 *Lunch and Plenary Session - Methods of Educational Research*
(Most common methods in educational research; purpose and review of various methods: quantitative, qualitative, and mixed-methods; controversies and ethical considerations related to methods; and research instruments)

1:30 Four Concurrent Working Group Sessions: *Methodology*
(Working Group Tables outline methods and instruments to be used, based upon assigned Case Studies)

Table I: Quantitative Research Methods

Table II: Qualitative Research Methods

Table III: Mixed Methods

Table IV: Research Instruments

2:15 *Coffee Break*

2:30 Four Concurrent Working Group Sessions: *Methodology (Repeated)*
(Participants rotate to a second table)

- 3:15 Plenary Session: *Data Collection and Data Analysis*
- 4:15 Four Concurrent Working Group Sessions: *Utilizing Appropriate Methods*
(Working groups reconvene and identify appropriate methodology, data collection, and analytical strategies for investigating the research question(s) formulated during 10:30 am session. Must provide justification for selecting agreed-upon methodology as well as identify specific data collection concerns and ethical considerations)
- 5:00 Plenary Session: Working Groups Report on discussion of *Appropriate Methodology*
Wrap-up Summary of Day One Activities
- 6:00 *Dinner (on your own)*

DAY TWO – ISSUES IN EDUCATIONAL RESEARCH

AM

- 8:30 Plenary Session: *Research at the K-12 Level – Considerations and Challenges*
- 9:15 Plenary Session: *Implementation, Research, and Evaluation*
(Is there unavoidable tension and/or conflict? What is the role of research in implementation? What is the role of evaluation in implementation? What is the role of evaluation in research? Can one wear both hats?)
- 10:00 *Break*
- 10:15 Four Concurrent Working Group Sessions: *Implementation, Research, and Evaluation*
(Using assigned case studies from Day One, Working Groups are to develop evaluation questions and distinguish between the research and evaluation questions formulated)
- 11:00 Plenary Session: Working Groups Report and Wrap-up Discussion on *Implementation, Research, and Evaluation*

PM

- 12:30 *Lunch and Plenary Session – The Socio-cultural Context of Research in STEM Education*
- 1:45 Plenary Session: *Research in Undergraduate STEM Education*
(Student Learning, Program Intervention, and Instructional Methodologies)
- 2:30 Plenary Session: *Staying Current in the Field*
- 3:00 Plenary Session: *Dissemination of Research Findings*
(The Role of Peer Review; Getting Published)
- 3:45 *Break*
- 4:00 Plenary Session: *Potential Funding Sources*
- 4:45 Closing Plenary Session: *Observations, Lessons Learned, and Concluding Comments*
- 5:15 *Adjournment*