

Evaluation of the 2008 Quantitative Training of Underrepresented Groups (QTUG) Conference

A Report by The Measurement Group LLC

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Program Background

The Quantitative Training of Underrepresented Groups (QTUG) program was initiated in 2004 by members of the Society of Multivariate Experimental Psychology (SMEP) to enhance the diversity of both the organization and the field of quantitative science in general. The program targets students (typically graduate students) from minority backgrounds and is designed to increase interest in quantitative psychology, provide an introduction to basic and advanced statistical modeling techniques and their application, provide practical skills in research career development, and help students form networks of professionals who are at different stages in their careers. Each year, the program conducts a two- to three-day quantitative training pre-conference before the American Psychological Association (APA) Conference. The timing of the conference was chosen so that conference attendees could also attend the APA meetings. Scholarships are provided to cover travel to the conference and APA Convention registration fees. Free dormitory housing is also provided during both the QTUG Conference and APA. Previous QTUG Conferences have been held in Atlanta, Georgia (2004 Conference); Washington D.C. (2005 Conference); Baton Rouge, Louisiana (2006 Conference) and Berkeley, California (2007 Conference) under SMEP sponsorship, with in-kind contributions from the American Psychological Association to cover attendance fees. This year's QTUG conference was held August 11-13, 2008 at Northeastern University in Boston, Massachusetts and funded

primarily by a National Science Foundation grant and support from APA, with additional administrative support from SMEP.

Logistics of 2008 QTUG Conference

Outreach and Participant Selection

To recruit participants for the 2008 Conference, QTUG conference staff widely disseminated notices about the training and its application process to both individual faculty members and several academic organizations. Additionally, contact was made with individuals at organizations related to underrepresented groups to advertise the training. The original pool of 100 applications was initially narrowed to 70 by the Project Investigator (PI) based on applicant interest, underrepresented category and location (with priority given to students in the Northeast). Then, each applicant was independently rated on a scale of 1 to 3 by three faculty members, with a 3 indicating “probably invite”, 2 meaning “possibly invite,” and 1 signifying “probably not invite.” Similar to the initial applicant screening, these ratings were made based on the applicant’s statement of interest, benefit, underrepresented background, and regional location.

Of the 60 applicants offered an invitation, 58 accepted. In addition to having the opportunity to attend the QTUG and American Psychological Association Conferences, participants received financial assistance with travel expenses and were provided free housing in the dormitories at Northeastern University.

Conference Facilities

The 2008 QTUG conference was held immediately prior to the 2008 APA Convention on August 11-13, 2008 at Northeastern University in Boston, Massachusetts. Northeastern’s campus provided excellent physical facilities for the conference, with large conference rooms and dormitories for the participants to reside in during both QTUG and the APA Conferences. The dormitories were located within two blocks of the QTUG meeting rooms and provided easy access via public transportation or walking to the conference facilities used for the American Psychological Association Conference.

Agenda and Speakers

Many renowned faculty in the field of quantitative psychology were invited to speak at 2008 QTUG Conference. An agenda of the sessions and presenters at the conference can be found in Table 1.

Table 1. 2008 QTUG Conference Agenda

Day 1: Monday, August 11, 2008	
9:00-9:30am	<i>Welcome from NEU Vice Provost for Faculty and Graduate Education by Luis Falcon</i>
9:45-11:00am	<i>Community-Based Research in Real Practice Settings: Examples from Addictions Treatment by Dr. Hortensia Amaro</i>
11:00-11:15am	Break
11:15-12:30pm	<i>Mediation and Moderated Mediation using SPSS by Dr. A. Nayena Blankson</i>
12:30-1:45pm	Lunch
2:00-3:15pm	<i>Perspectives on Racial Phenotypicality Bias by Dr. Keith B. Maddox</i>
3:15-3:30pm	Break
3:30-4:45pm	<i>Brief Evaluation Update by Dr. George Huba Participant Introductions</i>

Day 2: Tuesday, August 12, 2008	
9:00-9:15am	<i>Opening Remarks</i> by Dr. Lisa Harlow
9:15-10:30am	<i>A Fluid Intelligence Test that Tries to Cope with Fairness Issues</i> by Dr. Herbert Eber
10:30-10:45am	Break
10:45-12:00pm	<i>Fairness in Testing: Role of Methodology</i> by Dr. Gwyneth Boodoo
12:15-1:30pm	Lunch
1:45-3:00pm	<i>Mathematical and Statistical Modeling in Psychology: Why try, why bother?</i> by Dr. Richard Gonzalez
3:00-3:15pm	Break
3:15-4:30pm	<i>Applied Longitudinal Data Analysis</i> by Dr. Judith Singer & Dr. John Willett
6:00-9:00pm	Banquet provided by QTUG
Day 3: Wednesday, August 13, 2008	
9:00-9:15am	<i>Opening Remarks</i> by Dr. Lisa Harlow
9:15-10:30am	<i>Participant Presentations</i>
10:30-10:45am	Break
10:45-12:15pm	<i>Roundtable Discussions</i> <i>Discussion A: Applying for Grants and Fellowships</i> by Dr. Courtney Ferrell & Dr. A. Nayena Blankson <i>Discussion B: Statistical Analyses</i> by Dr. Herbert Eber & Dr. Lesa Hoffman <i>Discussion C: Publishing Research</i> by Dr. Wayne Velicer & Dr. Abigail Panter
2:00-4:00pm	<i>Reunion Reception with Previous and Current QTUG/SMEP Participants and Guests</i>
4:00-4:30pm	Conference Evaluations
5:00pm	QTUG Ends

Design of the Evaluation: There were four evaluation components of the QTUG program evaluation. Table 2 contains an overview of these four components. Detailed results from each wave of data collection, as well as copies of the evaluation instruments used, can be found in the Appendices to this report.

Table 2. Data Collection Overview

Data Collection Stage	Methods	Number Received	Goals of Data Collection Stage	Representative Variables	Detailed Results Location
Pre-Conference Survey	Electronic pdf surveys disseminated by email in late July	56 out of 56 surveys were received. ¹	Capture the quantitative and academic backgrounds of the participants; gather information about their expectations and reasons for attending.	Course background in quantitative methods; Interest and self-efficacy in using quantitative methods; Connected to advisors and mentors; Expected outcome(s) of going to QTUG.	Appendices A + B
Conference Evaluation	Paper survey completed by participants at the end of the Conference	54 out of 54 surveys were received. ²	Obtain feedback about the QTUG Conference and program as a whole immediately after the conference.	Ratings of session familiarity, quality and usefulness; Conference quality, usefulness, value	Appendix C
Post-Conference Survey	Electronic pdf surveys disseminated by email in late September	53 out of 54 surveys were received.	Capture participants' reflections about the QTUG program after the training; gather information about participants' experience at the APA Convention.	2008 QTUG Conference experience; Experience at previous QTUG Conferences (if applicable); 2008 APA Convention experience (if applicable).	Appendix D
Scholar Interviews	In October and November, lead evaluator conducted 15-30 minute phone interviews with a representative group of participants	12 scholars were interviewed.	Allow the evaluator to speak informally with the scholars about their Conference experience; uses of information from the conference in their work; and possible impact of the Conference (if any) on their career plans and professional identity.	Common themes discussed include: experience at and outcomes of attending QTUG; comparisons between 2008 QTUG Conference and prior QTUGs attended; experience at 2008 APA Convention	Appendix F

¹ Two participants who initially accepted the invitation to attend the Conference had to withdraw their acceptance before the first wave of data collection.

² Two participants who completed the pre-conference survey did not attend the QTUG Conference.

Primary Results from Each Major Data Source

The following sections summarize the findings from each wave of data collection. Frequency distributions and other displays of data are given in the corresponding Appendices to this report.

Participant Demographics

The demographic characteristics of the participants were collected on each of the data forms. Although all forms were “matched” in that they were submitted with the name of the participant attached, there were minor inconsistencies between demographic characteristics for a few respondents. Some of these inconsistencies were expected, such as changing educational status or being awarded a higher degree between the Summer of 2008 and the Fall of 2008. In other cases there may have been a check-box error or a slight change in how the participant characterized him- or herself in racial-ethnic group categories. We looked at all of the evidence on the different forms and reconciled the differences. The overall statistics on Participant Demographics are given in Appendix A. The following bullets present highlights.

- 70 percent of the participants in the conference were women.
- The female participants were slightly younger, with a median age of 26 years, as opposed to a median age of 30.5 years for the male participants.
- 51 percent of the female participants were African American/Black and 19 percent were Hispanic/Latina. This contrasts to the fact that 31 percent of the male participants were African American/Black and 31 percent were Hispanic/Latino. Overall, 45 percent of the participants were African American/Black, 23 percent were Hispanic/Latino, 15 percent were multi-racial/multi-ethnic, 11 percent were Asian/Pacific Islander, and 6 percent were White (including Middle Eastern and North African).
- As of July 1, 2008, overall, 53 percent of the participants were advanced graduate students (with 3 or more years of graduate study) and 34 percent were beginning graduate students (with 1 or 2 years of graduate study).
- As of July 1, 2008, 51 percent of the participants had a Masters Degree, while 42 percent had a Bachelors Degree.
- 79 percent of the participants were studying in the field of Psychology.
- On average, the participants had taken 5.3 courses in quantitative methods.
- Most of the courses taken in quantitative methods were at the undergraduate or beginning graduate level. However, 49 percent had taken a course in Graduate Research Designs/Methods, 30 percent had taken a course in General Linear Models, 23 percent had taken a course in Graduate Psychometrics, and 19 percent had taken a course in Latent Variable Analysis.
- On average, the participants had taken 3.2 courses in leadership skills.
- 91 percent of the participants had experience using SPSS and 30 percent had experience using SAS.
- Virtually none of the participants had any experience using a qualitative analysis program.
- Six of the participants (11 percent) had attended a prior QTUG conference.
- 47 percent of the participants had attended at least one prior American Psychological Association Convention.
- **We conclude that the sample of respondents was moderately experienced in quantitative methods and (obviously) motivated to obtain even more expertise. This was not a group of individuals who were largely inexperienced in the use of**

quantitative methods. The group was diverse in the desired ways of gender and racial-ethnic groups.

Pre-Conference Survey

As noted above in Table 2, the Pre-Conference Survey was conducted to determine the quantitative and academic backgrounds of the participants and gather information about their expectations and reasons for attending QTUG. The survey was administered by email using an Adobe PDF based form. Responses were obtained from all of the program participants through a very active system of participant tracking and reminders over a period of about a month. More detailed results are presented in Appendix B.

- Prior to the conference, 34 percent of the participants characterized themselves as “beginners,” while 53 percent characterized themselves as “advanced beginners.”
- 43 percent of the participants said they were extremely likely to pursue a career in a field that requires the extensive use of quantitative methods, while 30 percent said it was likely that they would.
- 51 percent of the participants said that they were well linked to advisors and mentors.
- 59 percent said that they felt empowered and able to control their own careers.
- The four most endorsed reasons for coming to the QTUG Conference primarily focused on receiving mentoring and learning advanced methods. 81 percent said they hoped to learn specialized information about selected quantitative methods. 81 percent said they hoped to network with other minority faculty and students. 62 percent said they wished to attend the combination of the QTUG and APA Conferences. 59 percent said they hoped to find a faculty or senior student mentor.
- 57 percent of the participants said that they viewed the recruitment process for the QTUG Conference as “good,” while 38 percent said it was “excellent.”
- 70 percent of the participants said they were very interested in quantitative methods.
- 34 percent responded “very supported” and 34 percent responded “supported” when asked if they felt supported in pursuing and obtaining quantitative skills.
- Very few participants (7 percent) felt very connected to a network of similar researchers or students who use quantitative methods.
- 45 percent of the participants said they were sometimes scared of statistics or math and another 11 said they definitely were.

In general, before the conference the participants were extremely interested in learning more about select quantitative methods. They were also extremely interested in networking with similar students and faculty who could serve as mentors or peer support. To some degree, the participants admitted some anxiety about statistical methods and mathematics. Most of the participants said they were likely to pursue a career in an area that required the use of quantitative methods.

In the words of the participants ...

- “I hope to gain a larger breadth of knowledge on different quantitative methods that may be applicable to my research.”
- “The most important thing that I would like to come out of this experience would be a mentorship. I am currently in a PhD program that runs on a non-mentorship model,

which means that aside from faculty teaching courses, students have limited career or professional advice.”

- “I am terrified of statistical applications and I need to get a stronger foundation and gain resources in building on this deficiency.”
- “...I want to know how to help individuals less advanced than me (e.g. undergraduates) to get good training in quantitative methods.”

Conference Evaluation

The Conference Evaluation form was given to the participants during the conference with instructions to complete it throughout the conference and return the form at the end of the training. After the conference, we found that 7 individuals had not turned in forms, primarily because they left the conference early. Each of these individuals was contacted by email and/or telephone and a complete set of conference evaluations was obtained. Detailed feedback for each of the sessions at the conference is presented in Appendix C.

- With the exception of one presentation which was virtually unanimously rated as exceptionally valuable and of the highest possible quality, individual sessions tended to be rated as valuable by about 80 percent of the attendees and relevant by about the same percentage.
- Across all presentations, an average of 82.3 percent (median of 80.9 percent) of the participants rated the sessions as having either excellent or very good quality.
- Across all presentations, an average of 65.8 percent (median of 64.8 percent) of the participants rated the sessions as being either very useful or extremely useful.
- In most cases, individual participants rated sessions as of reasonably good quality but less found the sessions to actually be useful for their planned careers.

In the words of the participants ...

- “I have a better overall understanding of how to apply the best statistical methods to the clinical research I plan to pursue in the future.”
- “My interest in mediation models was piqued and I want to learn more, as I may use this for my dissertation.”
- “I will use the resources given to me, e.g. websites, book, lecture notes.”
- “Dr. Willet gave me specific feedback on models appropriate for my research.”
- “Dr. Eber and Dr. Boodoo’s presentations will help me to be continually sensitive to groups and fairness when developing or using questionnaires in my work.”
- “Being around minorities in quantitative statistics will motivate me.”
- “The networking and socializing with colleagues of color was wonderful.”
- “It is nice to be in an environment supportive of students from underrepresented groups ...”

Participants also commented on the sessions and networking components that they would have liked or would recommend for future conferences.

- “I would have liked a session about connecting research design to the appropriate statistical analysis to use.”
- “A training on SPSS or SAS or another widely used stats package.”

- “Sessions explaining the conceptual and methodological techniques most often used by students in my program: SEM, multiple regression, and factor analysis.”
- “I would have liked to see a session on how to ‘connect’ qualitative and quantitative research.”
- “These sessions were exactly what I needed. I cannot imagine other sessions that would have been more helpful at this time.”
- “Career paths for quantitative scientists.”
- “[I would have liked a session about] learning to network.”
- “Increase interaction before the conference by sending out materials.”
- “[Have] a facebook group of each year and participants so students have a community to interact with.”

Post-Conference Survey

The Post-Conference Survey was administered between two and three months after the conference by email using an Adobe PDF based form. The form was adapted from that used for the Pre-Conference Survey. Complete findings are presented in Appendix D. The intent of this data collection was to see how participants viewed the conference after the initial “buzz” and excitement had somewhat abated and they had a more distant view on the experience.

- In retrospect, after having met the other participants, 53 percent of the participants rated the recruitment process for QTUG as “excellent” and 42 percent rated it as “good.”
- 53 percent of the participants said that the conference met their expectations “very closely,” while 43 percent said “somewhat.”
- 74 percent of the participants said they would “definitely” recommend the conference to a peer.
- 45 percent of the participants said they would rate the quality of the conference as “excellent,” while 32 percent said it was “very good.”
- 79 percent of the participants said that the content level of the sessions was “just right,” while 15 percent said it was “too advanced.”
- 49 percent of the participants said they were “very likely” to use content from the conference, while 34 percent said they were “somewhat likely” to use it.
- 40 percent of the participants said the conference was “extremely valuable” in helping them advance their personal education, while 26 percent said it was “very valuable.”
- 25 percent of the participants said the conference was “extremely useful” for increasing their quantitative research skills, while 23 percent said it was “very useful.”
- 93 percent of the participants said the number of networking opportunities was “just right.”
- 41 percent of the participants said that the networking opportunities had resulted in collaborations.
- 74 percent of the participants also attended the APA Convention. All went to formal sessions with 90 percent attending poster sessions and 82 percent attending formal paper sessions. 67 percent went to social or networking events.
- 46 percent of the APA participants attended at least 13 hours of APA Convention programming.
- 69 percent of the APA participants attended 4 hours or less of programming on quantitative methods.
- 67 percent of the APA participants said that attending the QTUG Conference prior to APA had a very positive impact on their APA Convention experience.

In the words of the participants ...

- “I will be taking more advanced level statistics next semester ...”
- “I have reconstructed my research questions and am looking at a different design as a result of the conference.”
- “Thinking about statistics in terms of mathematical models rather than overfocusing on statistics. Make understanding more intuitive.”
- “I received emails from other participants regarding a question I had about use of MPLUS for analyses.”
- “After the conference, I felt more confident in preparing for my upcoming comprehensive exam in statistics and I passed my exam a few weeks after the conference.”
- “Information on applied research was relevant to my interests as a grad student developing a balanced scientist-practitioner professional identify.”
- “I plan on attending a health conference with three of my peers I met at QTUG. This is a common interest we have together and may facilitate possible collaboration on future topics.”
- “I met a student at the conference who connected me with his mentor who helped answer some additional questions about IRT.”
- “I have met with intelligent individuals that have given me new ideas about potential research topics.”
- “I truly have changed for the better as a result of this conference. Even my advisor noticed the change and seen its benefits in my research.”
- “I would have liked additional time focused on student research questions either one-on-one or in really small groups.”
- “Breaking the conference into beginning, intermediate, and advanced workshops for students to split up and attend would have been better.”
- “I would have liked one or two workshops on statistical techniques in SPSS.”
- “There were too many presenters and not enough time.”
- “The conference exceeded my expectations. I cannot think of a single thing I would improve.”

Targeted Scholar Interviews

In order to supplement the results from the formal questionnaires, telephone interviews were held with a small group of conference participants who were specifically selected for the differing views that they expressed in the previous phases of data collection and their differing levels of experience with quantitative methods. Interviews were conducted by the senior evaluator. More detailed results are given in Appendix F.

- 7 of the 10 participants who discussed their career plans said that they expected to have a career in a content field informed by quantitative methods rather than a career specifically in a quantitative field.
- Participants had a variety of reasons for attending the QTUG Conference, possibly as diverse as the number of participants.
 - “I think that quantitative methodology is a lynchpin of success as a researcher, and it is something I take very seriously...I thought that I could spend only two days and benefit for the rest of my life.”

- “The statistics and research part of my program is the part that I feel less confident about. I felt that a summer program might help boost some of that confidence I am looking for.”
- A number of those interviewed made comments about how the conference was advertised, such as being surprised that peers who would benefit from the QTUG Conference were not aware that the opportunity was available.
 - “I was really grateful that a fellow graduate student [who I] am good friends [with] but goes to a different program kind of brought my attention to it, because I really did not even know it was out there.”
 - “It just amazes me how many people I know who are really into statistics and do not know about it [QTUG]. I only found out about it through APA ...”
 - “In the advertising of the workshop, I think I was under the impression that it was going to be more training, more sort of nuts and bolts, ‘let us learn about statistics from beginning to end’ so to speak.”
- Those interviewed were greatly split as to whether the conference was too simple or too advanced for them.
 - “I actually spoke with people who were actually majoring in statistics... So I think for people that are hardcore statistics people, it was probably more review.”
 - “There were some talks that were definitely above my head. I remember some other doctoral students had said, ‘Oh, that was kind of above my head, too.’ So I was happy to know that I was not the only one that was a little bit lost.”
 - “There were some presentations that certainly, I might have been like, ‘Wow, this is really, really over my head a little bit,’ but the key part was I walked away feeling like, ‘But, you know, I am really interested in that. I would like to understand what that all is about.’ ”
- Several participants were asked how relevant the Conference sessions were for them. In general, the observation was that the sessions were more relevant for participants in substantive fields than they were for participants who are more interested in methods.
- Many of those interviewed made fairly specific comments about individual sessions at the Conference. Those comments are summarized in Appendix F, Table F7.
- Categorically, we found that the major outcomes of the conference fit within the categories of: a) building a supportive network; b) establishing mentoring relationships; c) developing greater confidence using quantitative methods; d) achieving a greater understanding of selected quantitative methods; e) general career development; f) being better equipped to be a leader in the field; and g) having a better appreciation of the field.
- For those interviewed, while there were many specific suggestions for improving the conference (see Appendix F, Table F9), the ideas tended to fall into the two major categories of providing greater networking opportunities in a way that would provide lasting support, and developing sessions that were better matched to the differing technical expertise levels of the participants.

Longitudinal Data Results

Quantitative Results

Nineteen questions were asked in more than one stage of the data collection process in an attempt to capture how the feelings of the participants may have changed over time with regard to quantitative methods, being “supported” in learning quantitative methods and obtaining career advice, and perceptions of the conference. For questions that appeared in all three surveys, a one-way analysis of variance was conducted on the mean score of the question for each of the surveys. Only the scores of participants who answered the question in all three of the surveys were included in this analysis. Table 3 shows the mean scores for these questions.³

Table 3 shows the mean levels on the indicators collected on three occasions: Pre-Conference, at the Conference, and Post-Conference. With one exception (“How connected are you to a network of similar researchers or students who use quantitative methods?”), none of the indicators changed over time. For the one indicator that did change significantly, the mean scores show that the participants systematically felt more connected to a network of researchers or students who use quantitative methods each time they were asked.

For questions that only appeared in two of the surveys (either the pre-conference and the post-conference survey or the conference survey and the post-conference survey), a t-test was conducted on the mean score of the question from both surveys. Only the scores of participants who answered the question in both surveys were included in this analysis. Table 4 shows the mean scores for the questions appearing in both the pre-conference and the post-conference surveys. One of the three t-tests was statistically significant (“How would you categorize your knowledge of leadership techniques within your chosen academic field?”). Participants were more likely to see themselves as leaders when this question was asked after the conference.

Again, for questions that appeared in the Conference and Post-Conference Surveys, a t-test was used to assess the difference in the means on the repeated items in both surveys. Table 5 shows the means scores appearing in both surveys. Three of these tests were different at a level beyond chance. Answers to the question “How would you categorize your knowledge of leadership techniques within your chosen academic field?” suggest that the participants thought that they were more likely to use the information from the Conference immediately after seeing the sessions than they were after time had passed. Responses to the question “How valuable was the overall conference in helping you advance your personal education?” again suggest that the participants thought that the conference was valuable immediately after the sessions than after some time had passed. Finally, responses to the question “How useful was the overall conference in helping you increase your quantitative research skills?” again suggest that participants looked more favorably toward the conference immediately after the sessions they did after some time had passed.

³ Were there more participants, it would be appropriate to use multivariate analyses of variance to determine whether the variables, considered collectively are different beyond the level of chance. The small sample size makes this not practical. Hence, while the individual statistical tests should be considered, it should be realized that the variables which show significant change could be explained by the simple fact that multiple univariate tests were conducted. Thus, the results should be considered to be suggestive rather than more definitive, especially given the small sample sizes.

Table 3. Mean Ratings Across Three Waves of Data Collection: Pre-Conference, At-Conference, and Post Conference

Question	Scale	N	Pre-Conference Mean	Conference Mean	Post-Conference Mean	F	P
How likely is it that you will pursue a career in a field that requires the extensive use of quantitative methods?	1 = Extremely Unlikely 2 = Unlikely 3 = Somewhat Unlikely 4 = Somewhat Likely 5 = Likely 6 = Extremely Likely	52	5.10	5.04	4.94	.547	.582
How well-linked are you to advisors and mentors who can help you with advice and support?	1 = Unlinked; Career Advice/Support is Not Available 2 = Poorly Linked; Career Advice/Support is Rarely Available 3 = Somewhat Linked; Able to Get Career Advice/Support at Times 4 = Well-Linked; Able to Get Career Advice/Support When Needed	53	3.36	3.23	3.34	.917	.406
How would you categorize your feelings of empowerment and self efficacy about being able to control your own career?	1 = Unempowered; Unable to Control Own Career 2 = Somewhat Unempowered 3 = Somewhat Empowered 4 = Empowered; Able to Control Own Career	53	3.54	3.54	3.50	.253	.777
How do you perceive the recruitment process for the QTUG conference and program?	1 = Poor 2 = Fair 3 = Good 4 = Excellent	53	3.32	3.38	3.47	1.640	.204
How interested are you in quantitative methods?	1 = Very Disinterested 2 = Disinterested 3 = Interested 4 = Very Interested	51	3.71	3.65	3.73	.796	.457
How supported do you feel in being able to pursue and obtain quantitative skills that are important to you?	1 = Unsupported 2 = Minimally Supported 3 = Supported 4 = Very Supported	52	3.02	3.19	3.08	.914	.407

How connected are you to a network of similar researchers or students who use quantitative methods?	1 = Unconnected 2 = Minimally Connected 3 = Connected 4 = Very Connected	52	2.56	2.81	3.00	8.540	.001
How connected is your current institution to a network of other institutions that teach or promote quantitative methods?	1 = Unconnected 2 = Minimally Connected 3 = Connected 4 = Very Connected	51	2.94	2.80	2.88	.776	.466
Are you "scared" of statistics or math?	1 = Definitely Yes 2 = Sometimes 3 = Usually Not 4 = Not at All	52	2.60	2.62	2.65	.292	.748

Table 4. Mean Ratings Across Two Waves of Data Collection: Pre-Conference and Post Conference

Question	Scale	N	Pre-Conference Mean	Post-Conference Mean	T	P
How would you categorize your level of quantitative knowledge within your chosen field?	1 = Novice 2 = Beginner 3 = Advanced Beginner 4 = Advanced 5 = Expert	53	2.74	2.85	1.231	.224
How would you categorize your knowledge of leadership techniques within your chosen academic field?	1 = Novice 2 = Beginner 3 = Advanced Beginner 4 = Advanced 5 = Expert	48	2.27	3.04	5.370	.000
How confident are you about learning and working with quantitative methods?	1 = Not at All Confident 2 = Slightly Confident 3 = Pretty Much Confident 4 = Extremely Confident	53	2.85	2.91	.622	.537

Table 5. Mean Ratings Across Two Waves of Data Collection: At-Conference and Post Conference

Question	Scale	N	At-Conference Mean	Post-Conference Mean	T	P
How well did the conference match your expectations?	1 = Not at All 2 = Somewhat 3 = Very Closely	50	2.62	2.52	-1.400	.168
Would you recommend this or a similar conference to a peer?	1 = Definitely Not 2 = Probably Not 3 = Not Sure 4 = Probably 5 = Definitely	52	4.73	4.65	-1.428	.159
How would you rate the overall conference quality?	1 = Poor 2 = Fair 3 = Good 4 = Very Good 5 = Excellent	52	4.35	4.19	-1.829	.073
How likely are you to use the information from the conference?	1 = Very Unlikely 2 = Somewhat Unlikely 3 = Not Sure 4 = Somewhat Likely 5 = Very Likely	52	4.71	4.23	-4.448	.000
How valuable was the overall conference in helping you advance your personal education?	1 = Not at All Valuable 2 = Slightly Valuable 3 = Moderately Valuable 4 = Very Valuable 5 = Extremely Valuable	51	4.18	3.84	-2.832	.007
How useful was the overall conference in helping you increase your quantitative research skills?	1 = Not at All Useful 2 = Slightly Useful 3 = Moderately Useful 4 = Very Useful 5 = Extremely Useful	50	3.86	3.32	-3.841	.000

Question	Scale	N	At-Conference Mean	Post-Conference Mean	T	P
How appropriate was the number of networking opportunities provided with peers and presenters?	1 = Not Enough 2 = Just Right 3 = Too Many	49	1.94	1.98	-1.000	.322

Qualitative Results

For each participant, the expected outcomes of attending the QTUG Conference from the pre-conference survey were compared with the actual outcomes of attending that they provided in the post-conference survey. Table 6 contains exemplars of the expected and actual outcomes of attending QTUG provided by select scholars.

Table 6. Expected and Actual Outcomes of Attending QTUG.

Domain	Expected Outcome (from Pre-Conference Survey)	Actual Outcome (from Post-Conference Survey)
Greater understanding of quantitative methods	"I expect to gain valuable information regarding research, statistics, and methodology with regard to research."	"The QTUG conference was an outstanding experience. Since returning, I have been completely motivated regarding quantitative research techniques, enhancing current research projects and strengthening the principles regarding newly formed proposals...The conference provided an epiphany for me regarding the relevance of sound research techniques."
Build a supportive network	"I would ideally like to make several contacts in the field with current quantitative psychologists, but also with students who are in quantitative PhD programs."	"I met students and professors who (through discussion and my many questions!) gave me a better idea of whether or not to pursue the Quantitative PhD. I also met wonderful students from around the country that I am still in touch with, some quantitative experts in the making, others with specialties in other areas. Also, I feel if there are questions that I have about quantitative methods in various projects, I have a network of professionals that I can reach out to."
Greater confidence using quantitative methods	"I would like to feel more confident about my skills and therefore be more confident about my career goals."	"The most important thing is the conference's ability to lift my sense of self-efficacy and create both an excitement and sense of motivation towards quantitative methods."

Evaluation Director Observations

The lead evaluator for the project – Dr. George J. Huba – has had more than 30 years of post-doctoral experience evaluating programs, including those intended to expand and train the professional workforce. Among the issues with which he has specialized in are the development of services for disenfranchised and traditionally underserved groups (ethnic-racial minorities, drug and alcohol abusers, those with serious mental illness, HIV/AIDS patients, victims of domestic violence, those subject to elder abuse, immigrants, and groups who do not speak English) as well as expanding and training the professionals who provide these services. The purpose of QTUG is, at its most abstract level, to develop a cadre of quantitative scientists from traditionally underrepresented groups who can contribute to both applied research about how to provide better services to all and/or to basic scientific issues. The following observations are those of Dr. Huba from attending the conference, designing and reviewing all of the survey results, and conducting interviews. Dr. Huba has also evaluated, in collaboration with Dr. Lisa A. Melchior, several dozen key training programs comparable to QTUG over the past 20 years.

- QTUG selected a group of generally highly-motivated individuals from underrepresented groups. The motivation of these individuals was clear from their attentiveness to the presentations, the fact that most attended all sessions, and Dr. Huba's direct observation that the discussions after the individual presentations among the participants focused much more on the content of what they had just heard than the more social issues that often come up among participants at conferences. Quantitative social science has traditionally been a field almost entirely comprised of white males. A cadre of 54 individuals from underrepresented groups who can bring a new perspective into their fields of social science and train others represents a significant contribution, especially when these individuals have been carefully selected. An appropriate group of individuals who can potentially emerge as leaders in the use of quantitative methods was selected for participation at the conference.
- There was a huge amount of diversity in training and sophistication among the attendees. The individuals at the conference ranged from those with three years of highly technical training and advisors who were prominent methodologists to those who had one or two introductory statistics courses and whose home institution did not have any specialists in quantitative methods on the faculty. As might be expected, the more advanced students tended to dominate question and discussion sessions and the speakers were understandably drawn toward answering higher level questions. What was not done by most speakers was to orient the participants to what the topic was about at a general level or why the topic was important or what the common applications were of the topic. While half of the meeting participants could understand the presentations without such context, about half had difficulty understanding the importance – at its most abstract level – of many of the topics.
- While most of the presentations were highly-rated by the participants, it seemed clear that at least a minority of the students did not quite “get” these generally academic presentations and would have felt more comfortable with an alternate method of presentation such as break-out groups covering different topics (some abstract and mathematical; some workshops on how to run a computer program; some roundtables discussing the methodological issues of the participant's research program). These preferences came out on the various evaluation forms but were even more pronounced as topics of conversation among the participants at the conference.
- The direct observation of Dr. Huba was that almost all of the presentations were “too academic” and would have been more appropriately presented at professional conferences or in colloquia than at a training conference. The “what I did” aspect of the author's work was well presented, although not always at exactly the correct level for the average participant. What was missing in most of the presentations was an extended discussion of “why I did it” and “how I did it.” That is, a discussion of the practical aspects of the quantitative research which often cannot be presented at a professional conference was largely missing in many of the individual presentations.
- The various presenters were highly accessible to the participants. Immediately after their own presentations, but also throughout the conference, presenters were surrounded by participants, many seeking answers to issues that came up in their own research. The presenters were observed to be attentive to the students, empathic, and to provide useful information that also served to motivate the students to further work in the area. This accessibility extended beyond the conference, as several participants indicated

they were in touch with the presenters after the conference to discuss methodology questions or questions about their own research.

- Sitting with various participants throughout the conference and having brief conversations in the hallways and lounge, suggested that immediately after a session, a significant percentage of the participants were discussing the “why” and “how” of the presentation.
- The audio-visual materials at the conference were of variable quality. In virtually all cases, however, the slides presented were more appropriate for formal colloquia or professional conference sessions than they were for a training session. Again, the practical aspects of “how” and “why” the research was conducted were rarely emphasized, or even explained, and when there were limited verbal discussions of these practical issues, rarely were there supporting audiovisual materials to reinforce these points.
- Meeting accommodations, meal options, and the general set-up of the room exceeded that of most similar conferences. Coffee and other beverage service, whether provided at no cost, or through an honor system of payment, would have been desirable as many adults “require” the minor stimulation of caffeine to remain maximally attentive during extended presentations.
- The two elements of the conference that were missing were some type of formal training sessions (in a specific method or a specific computer program) and a limited number of break-out sessions where participants could sort themselves into more introductory or advanced training sessions, potentially organized around a discussion of specific methods or an introduction to specific computer programs and discussions of advanced mathematical and programming topics. In most similar conferences we have evaluated, break-out sessions are provided and serve to provide an alternative to a conference in which all of the sessions have a similar format and are conducted in the same large room.
- A slight expansion in the scope of the topics presented at the conference would possibly prove to be valuable. The sessions were a little too much like one another in approximate content and style of presentation. A broader range of topics and styles of presentation would have served to make the participants more attentive and somewhat more engaged.

Conclusions and Recommendations

1. The majority of the data converge to show that a diverse group of members of underrepresented groups had a significant professional experience consisting of obtaining information about the importance of quantitative methods in their current and future research, some introduction to various quantitative techniques and areas for quantitative study, opportunities to network with other members of underrepresented groups with similar interests in quantitative analysis, and to become motivated to continue to educate themselves in the applications of these tools in their own research.

2. The participants ranged from those just being exposed to the field of quantitative methods to those who might be considered fairly advanced and capable of independent research on quantitative methods. Such diversity calls for a somewhat different approach to the conference. Among the alternatives would be to recruit or select participants in a more focused way, to provide break-out sessions with opportunities for training at different levels, and to potentially formally “track” as much as half of the conference. We recommend that these alternatives be considered and that at least one be tried in future conferences.
3. As noted earlier, about half of the presentations appeared to be more appropriate for presentation at professional conferences or as colloquia than as training sessions. In some cases, however, the presentations were also more of the tone that would be used in a full-semester course rather than a session of one hour that was intended both to provide an introduction and to motivate individuals to pursue more training in the area. We recommend that presenters meet by telephone conference calls before the conference and that an attempt is made to orient more of the presenters to the format of a training conference and the importance of motivating participants to continue to learn about many of the conference topics. Each of the presenters is obviously capable of presenting an excellent training session, but in some cases, the presentations were more a compendium of the “best of” established researchers’ professional slides than materials prepared for the purposes of a compressed training session.
4. It should be noted that after the QTUG Conference, participants go back to their home institutions and may choose to use the materials from the conference or not and to continue their relationships with their peers or not. A more proactive approach to bolstering the knowledge and networking connections of the participants could prove beneficial. Such a proactive approach could include listservs for participants and for participants and senior quantitative professionals, a formalized one-on-one online mentoring program through email or an online course format, or formalized opportunities for periodic telephone consulting either through a one-on-one methodology or continuing conference calls. We recommend that these methods be explored.
5. Overall, this was an exceptional conference that was well-received, and whose contents appear to be “career-changing” or “career-enhancing” for many of the participants. The conference should be continued in future years in a slightly modified form. The primary changes required are the types of “fine-tuning” modifications typical of continuing professional training programs.