Quantitative Reasoning Fellows at Baruch College will be housed at the Center for Teaching and Learning, reporting to the director, and they will work on projects to identify and implement best practices to enhance instruction of fundamental mathematics. Their responsibilities and opportunities will include:

- research into emerging trends in mathematical instruction, including course hybridization and the integration into math instruction of open education resources (OER);
- organization of workshops for full and part-time faculty that promote innovative course and assignment design;
- assessments of specific quantitative reasoning learning goals located in different departments;
- exploration of ways to enhance the integration of numeracy into the curricula of a range of departments, including marketing, journalism, history, and the sciences;
- identification of software and hardware tools that can broaden paths to engagement with quantitative methods, and development of procedures to implement and support those tools throughout the curriculum.

About the Baruch College Center for Teaching and Learning
The Center for Teaching and Learning aims to expand faculty development opportunities at Baruch College, particularly in the areas of academic integrity and the development of online and hybrid courses. The founding director, Dr. Luke Waltzer, was appointed in August 2013 to shape the CTL’s identity and to build its programming. Baruch College has a rich tradition of faculty development, including programs that have been led by the Bernard L. Schwartz Communication Institute and the Writing Center for the last fifteen years. The CTL will build upon this tradition, experience, and body of knowledge to augment existing structures and build new ones for supporting faculty and students as the College strives to attain the goals articulated in its Strategic Plan. The Center for Teaching and Learning reports to the Office of the Associate Provost, Dennis Slavin, and is supported by an Advisory Board drawn from across the community. The Center for Teaching and Learning also works closely with the Zicklin Online Learning and Evaluation program, which is focusing explicitly on questions around online instruction within the Zicklin School of Business.
BMCC Quantitative Reasoning Fellows (QRFs) will engage in a variety of activities, among which may be:

- Research QR practices at other schools that have a well-established QR program across the curriculum. Identify desirable practices for use at BMCC and adapt them to the needs of BMCC faculty and students.

- Partner with select faculty members who are or will be going through QR professional development workshops. The first step will be to observe classroom lectures in designated QR courses in order to help identify suitable QR topics and assignments. QRFs will provide a range of support for faculty partners, including but not limited to the following:
  - Serve as a sounding board for the articulation of course goals and for assistance in redesigning QR syllabi.
  - Help faculty to refine previous QR assignments or to design new ones (both formal and informal) to accomplish specific QR learning goals.
  - Help faculty to develop new ways of presenting QR material within a lesson. Such development may include visual aids as well as electronic aids.
  - Help construct explicit criteria for evaluating student QR responses – criteria that will be communicated to students as part of the QR assignment.
  - Help to develop useful, efficient ways of responding to student QR work.

- Assist the QR coordinator in creating and implementing faculty development activities to teach faculty ways to infuse QR into course instruction.

- Develop, attend, participate in and help conduct small group, class, or campus workshops on strategies for QR instruction (overcoming QR instructional anxiety, strategies for teaching fundamental QR skills, articulating QR goals, pairing QR with writing, assessing QR, etc.)

- Attend weekly group meetings with the QR coordinator to review progress, share best practices, and set new goals. These meetings will be part professional development (QRFs will read and discuss literature on QR theory) and part work reports and discussion of focus and direction.

- Submit regular workload reports to the QR coordinator.
In 2014-15, Brooklyn College proposes to create a culture of quantitative reasoning and assessment across the campus by infusing QR planning and development activities into four targeted areas—student success initiatives in undergraduate programs, School of Education standards and assessment implementation, development of the Center for the Study of the City, and integration of QR into graduate programs in the schools of Visual, Media, and Performing Arts and Humanities and Social Sciences.

The Brooklyn College QR Fellows will be guided by a leadership council consisting of Assistant Provost Colette Wagner, Acting Associate Provost Sharona Levy, Dean Maria Conelli, Dean Kimberley Phillips, and Assistant Dean Geraldine Faria. The QR Fellows will meet regularly with the leadership council and their designated activity coordinators to ensure an integrated, team approach. Specific duties of the four QR Fellows are described below:

1. Supporting Student Success/Integrating QR into Undergraduate Programs
   - Providing direct support to students who are having trouble in QR courses, especially in general education courses, through sessions in the Brooklyn College Learning Center;
   - Designing and implementing faculty development activities to encourage and support the infusion of QR into course instruction across the disciplines, and designing authentic assessments;
   - Working in the new Team-Based Learning project to aid faculty in developing, implementing and assessing relevant QR application activities for in-class use.
   
   **Undergraduate QR Coordinator:** Niesha Ziehmke, Director of First College Year Programs/Coordinator of CUE Initiatives.

2. Implementing a Coordinated Standards and Assessment Program in the School of Education
   - Participate in QR faculty Development Activities to teach faculty ways to infuse QR into course instruction.
   - Assist in the training, implementation, and maintenance of the TK20 data management system.
   - Assist in training faculty and staff on implementing edTPA requirements.
   - Monitor inclusion of Common Core State Standards into the teacher preparation programs’ curricula.
   - Partner with Department Chairs and faculty on developing or revising assessment tools to meet Specialized Professional Association (SPA) standards.
   - Support team efforts with individual department point persons to meet NCATE, SPA, and State Education Department requirements involving quantitative data analyses.
   - Meet biweekly with QR coordinator to review progress, learn together, and set new goals.

   **SOE Quantitative Reasoning Coordinator:** Assistant Dean Geraldine Faria, NCATE Coordinator and Coordinator of TK20 Assessment Implementation.

3. Developing a Center for the Study of the City
   - Work with faculty to design and develop the infusion of QR content into course instruction across the disciplines related to studies of cities;
   - Design and develop workshops to help bring QR methods to civic engagement and collaborative student/faculty/community projects
   - Work with the Dean of Humanities and Social Sciences and the faculty in the Center to incorporate QR into emerging graduate and undergraduate curricula in the humanities;
• Work with the Dean of Humanities and Social Sciences and faculty in and associated with the Center to create assessment tools

**HSS Coordinators:** Dean Kimberley L. Phillips and Professor Tammy Lewis, Sociology

4. **Integrating QR into Graduate Programs in the Schools of Visual, Media and Performing Arts and Humanities and Social Sciences**

• Work with the Dean of Visual, Media, and Performing Arts and assigned faculty to incorporate QR into emerging graduate curricula in film and music

• Work with the Dean of Visual, Media, and Performing Arts and assigned faculty to incorporate QR into the existing Art History graduate program and the advanced certificate in Museum Education program.

• Work with the Dean of Visual, Media, and Performing Arts and the Dean of Humanities and Social Sciences and assigned faculty to incorporate QR into existing graduate curricula in media and creative arts (e.g., journalism, multimedia).

• Work with the Deans and assigned faculty to create a set of recommendations regarding the role of QR content in graduate programs that will be incorporated into the college’s Graduate Program Review, which will be published and submitted to Middle States as part of the college’s Periodic Review Report due on 6/1/14.

• Collaborate with other BC QR Fellows and Center for Teaching to provide faculty development workshops in support of incorporation of QR into selected graduate programs.

**HSS/VMPA Graduate Coordinators:** Dean Kimberley Phillips and Dean Maria Conelli
In 2014 Bronx Community College will engage in several activities to infuse quantitative reasoning across the curriculum in selected disciplines with the support of Quantitative Reasoning Fellows (QRFs). The college will develop and implement a plan to infuse Quantitative Reasoning in the curriculum in the Spring 2014 semester to conduct QR enhanced courses in the Fall 2014 semester. QR fellows will be engaged to assist the coordinator and selected faculty in drafting the plan and coordinating with campus resources such as the Center for Teaching and Learning with Technology (CTLT) and the Assessment Office for the following:

- Work with the QR coordinator to create a faculty development program to promote the infusion of QR activities into courses.
- Develop assessment tools (assignment instruments and rubrics) for QR student learning outcomes in collaboration with the College Assessment Manager.
- Attend weekly group meetings with QR coordinator to review progress, share best practices and set new goals.
- Observing classroom lectures of courses which may be designated for QR instruction.
- Conduct a professional development program for faculty recruited to embed Quantitative Reasoning in their courses.

In the Fall 2014 semester QR Fellows will engage in the following activities:

- Partner with selected faculty members who are or will be going through QR professional development workshops. The collaboration will include the following:
  - Assistance in redesigning syllabi of selected courses to embed QR student learning objectives.
  - Helping faculty in designing new or redesigning previous QR assignments to accomplish QR student learning outcomes.
  - Helping faculty in developing presentation strategies of QR materials in the classroom.
  - Assisting faculty in developing and implementing assessment of QR student learning outcomes.
  - Helping to guide norming sessions with faculty to assess student work.
  - Assisting students through tutoring session in the completion of QR assignments.
  - Develop and deliver small group, class, or campus workshops in strategies for QR learning.
- Attend periodic meetings of faculty mentors with new faculty embedding QR in their courses.
- Attend quarterly meetings of faculty teaching QR courses with the coordinator to assess progress of QR instruction and discuss improvements.
- Submit regular workload reports to the QR coordinator.

Nikolaos Apostolakis, Chairperson of the Mathematics and Computer Science department will serve as the Quantitative Reasoning coordinator and will supervise the QR Fellows. He will be assisted by Luis Montenegro, Interim Associate Dean of Curriculum and Faculty Development, in the Office of Academic Affairs.
Quantitative Reasoning Fellows will work with faculty towards improving quantitative reasoning components for various undergraduate courses. Activities will vary, but may include:

- Assessing the effectiveness of the quantitative components of a course by providing a detailed analysis of current assignments and instruction methods. Following assessment, recommendations for improving the quantitative component of the course will be made.
- Developing supplemental materials for use by faculty and students. This may involve any of the following:
  - Designing lesson plans that will become available to faculty.
  - Designing projects or worksheets that can be used either as assignments or as supplemental study materials for students.
  - Incorporating existing resources, such as publicly available databases or software, as part of an assignment or lesson.

When possible, these materials will be integrated into existing courses.
- Develop methods for assessing a student's quantitative reasoning work and corresponding methods for providing effective feedback.
- Attend regular meetings with faculty and the QRF coordinator.
In 2014-2015, the duties of the Quantitative Reasoning Fellows (QRFs) at Guttman Community College will be selected from the following:

- Gather video and other digital resources that would be supportive of quantitative reasoning in first year experience courses. This will include meeting with faculty who have previously taught the quantitative reasoning component of the City Seminar I and II courses and finding out what they used and what they think might be helpful in the future.

- Compile list of sources for quantitative data related to first year experience courses. These courses include City Seminar I and II and Ethnographies of Work I and II.

- Develop grading rubrics that could be used for assessing student quantitative reasoning projects.

- Work with select faculty to develop and revise QR assignments and assessment items that correspond to the quantitative learning objectives in the first year experience courses.

- Work with select faculty to identify specific quantitative reasoning outcomes that would be appropriate and well integrated into existing first year experience courses or second year courses that are being developed. These outcomes will help support the more general institutional learning outcomes.

- Provide QR assistance to graduate coordinators and peer mentors by designing activities that can be used in the first year studio.

- Assist faculty in providing QR instruction in the classroom as needed (e.g. assistance with experiential activities, providing feedback on drafts of student work, etc.).

- Meet with QR faculty to review progress, learn together, and set new goals.

The QR Coordinator for Guttman Community College will be Dr. Rebecca Walker. She is an Associate Professor of Mathematics at Guttman Community College and has been the point person at Guttman Community College for implementation of courses that address the institutional learning outcomes that are related to quantitative reasoning. Dr. Walker’s research interests include high school mathematics curriculum development, student understanding of algebra, and how experiential learning impacts pre-service teacher development. She has taught mathematics and statistics at the secondary and post-secondary levels since 1985.
Hostos Community College

In the 2014-2015 academic year, the Quantitative Reasoning Fellows will be working with the faculty from designated departments on assessment of the College’s Quantitative Reasoning General Education competencies. This will include working directly with the General Education Committee as well as faculty members who want to further align their instruction and/or assessments. Other key responsibilities include:

- Work with the Center for Teaching and Learning to develop and implement faculty development workshops specific to imbedding Quantitative Reasoning competencies into course curriculum and designing authentic assessments.

- Attend regularly scheduled General Education meetings, assist with committee efforts to strengthen Quantitative Reasoning competencies.

- Collaborate with the Mathematics Department with regard to course assessment and revisions to a new Quantitative Reasoning mathematics course.

- Assist faculty in providing Quantitative Reasoning instruction in the classroom as needed.

- Meet regularly with the coordinators as needed to review progress, share best practices, and set goals.

- Provide support to students in deepening Quantitative Reasoning skills.

- Support supplemental instruction activities, including assisting with professional development of instructors and peer tutors.

Quantitative Reasoning Coordinators
Christine Mangino, Associate Dean of Academic Affairs
Cynthia Jones, Faculty Fellow, Chair of the General Education Committee, and Professor of English
In the 2014-2015 academic year, the Quantitative Reasoning Fellows will be working with faculty from selected departments on assessment of the College’s specific QR learning goals and on enhancing QR related instruction and student mentoring. The activities and responsibilities of the Fellows will vary depending upon their specifics assignments, and they may be asked to

- Develop and revise assessment materials and assignments that correspond to the College’s specific QR learning goals.
- Design and analyze QR-related class assignments and activities.
- Create and implement faculty development activities to promote the inclusion of QR activities into new and existing courses.
- Instruct tutors and peer advisors on QR related presentations a student mentoring.
- Conduct student workshops aimed at enhancing students’ math skills and assisting them with strategies for math anxiety.
- Advise and assist students on quantitative assignments and quantitative aspects of research projects and theses.

The Quantitative Reasoning Fellows will be expected to attend regularly scheduled meetings with QR coordinators to discuss and review their progress, share best practices, and establish outcomes for their projects. Fellows will attend and participate in professional development opportunities aimed at enhancing QR related teaching skills and knowledge.

**Quantitative Reasoning Coordinators**

Barbara Barone is Director of the Dolciani Mathematics Learning Center and Professor and Adjunct Lecturer in the Department of Mathematics and Statistics at Hunter College.

Rebecca Huselid is an Associate Professor in the Department of Psychology at Hunter College.

Purvi Sevak is an Associate Professor in the Department of Economics at Hunter College and the Graduate Center City University of New York.
Quantitative Reasoning Coordinator

DANTE ABDUL-LATEEF TAWFEEQ is an associate professor in the Department of Mathematics and Computer Science at John Jay College of the City University of New York (CUNY). His research interests include the preparedness of African/Black American and Latina/o students for the learning of mathematics at the collegiate level, project/inquiry based learning of calculus, and the intellectual identity of African/Black American male students.

Job Description Summary

Quantitative Reasoning Fellows (QRFs) help create and assess the implementation of innovative quantitative reasoning material in John Jay College’s developmental mathematics courses (College Algebra, Liberal Arts Mathematics, Finite Mathematics, and Pre-Calculus). This is the first step for John Jay in developing comprehensive, across the curriculum, quantitative reasoning teaching and learning program models.

Fellows will use their experience to help build dynamic and effective mathematics and quantitative reasoning curriculum; QRF(s) will help develop, adapt, and study innovative resources, models, or technologies; and demonstrate if, how, for whom, and why their implementation affects learning. More specifically, the QRF(s) will help to inform and provide the foundational knowledge to improve mathematics and quantitative reasoning learning and teaching at the College.

The above efforts are the general work that the QRF will take part in. Other key responsibilities include the following:

1) Attend bi-weekly meetings;
2) Work on teaching and learning projects that have departmental implications;
3) Work on smaller teaching and learning projects with adjuncts or full time faculty;
4) Participate in the development of curriculum; and
5) Assist the coordinator in research and assessment projects.

This is an excellent opportunity for someone interested in helping to create a national model for urban public serving institutions of higher education. In our continuous effort to align ourselves with the Common Core State Standards for Mathematics, and learning objectives of the National Council of Teachers of Mathematics and the Mathematical Association of America, John Jay College will rely on the QRF(s), under the direction of the Coordinator of the Math Foundations & Quantitative Reasoning Program, to help us achieve this goal.

Overview of Project Context

The following two elements are the avenues by which the instruction and learning of developmental mathematics and quantitative reasoning instruction, learning and curriculum will be improved. Principles of Inquiry Based Learning (IBL) and Project Based Learning (PBL) will be used as our guiding framework.

1) Students are engaged in inquiry based learning through:
   - Working in cooperative groups
   - Solving problems where solutions are not apparent (Non routine problems)
   - Communicating mathematically (Cognitive fluidity in mathematical discourse)
• Becoming more cognizant of and develop an appreciation for the applications of mathematics and quantitative reasoning via real world phenomena

2) Teachers are engaged in inquiry based instruction through:
• Facilitating cooperative learning groups (knowing how to manage IBL in such a class)
• Using questioning techniques as a tool for assessing learning
• Facilitating student-centered, inquiry-based performance activities
• Integrating reading and writing in the math class (journaling)

The above bullets denote domains of the teaching and learning of mathematics that could lead to improvements in the instruction and learning of mathematics and quantitative reasoning at the College. The QRF(s) will assist in improving these areas through the implementation of a multi-tiered teaching program.

We have identified two primary tiers of support, that of students, and that of instructors. For the first tier, the students, we plan to incorporate a series of inquiry based and project based learning opportunities for students. These students would be provided with the necessary curricular and instructional support to facilitate an engaging, yet rigorous learning experience in STEM areas.

For the second tier, the teachers, we would also like to implement a form of professional development based on the Japanese Lesson Study Model for professional development. This inquiry based form of professional development was designed to empower teachers to engage in better understanding of issues of curriculum, instruction, and student learning through the collaborative development of IBL and IPL lessons, and the investigation of student thinking through these lessons. Under this model, the teachers follow a sequence of inquiry based activities in which they (1) formulate long term goals for student learning; (2) plan, conduct, and observe a “research lesson” based on the goals; (3) carefully observe student learning, engagement, and behavior during the lesson: and (4) discuss and revise the lesson and approach to instruction based on these observations (Lewis, 2002 in Takahashi and Yoshida, 2004).

Project Based Learning

The QRF(s) will assist this project-based-approach in moving students beyond the learning of mathematics for the sake of doing mathematics to the learning of mathematics for the sake of application and conceptualizations of quantitative ideas. From a rote procedural perspective, students' learning can be generally regulated to skills based exercises; three to four step exercises; and computational manipulation. This seems to be the case with most instruction in the country (Stigler, 1999). The projects-centered learning opportunities that are designed to facilitate the intellectual autonomy that students need to develop in order to be successful in postsecondary education STEM experiences. This approach, done correctly, will place the student in the center of learning and prevent the teacher from interfering with that learning. If anything, this approach promotes a partnership between the student and the teacher.

Framework of QRF Responsibilities

Many mathematics classes are dominated with the monologue of the teacher; direction of the conversation is towards the students. Figure 1, provides a framework that depicts a shift of dialogue in the mathematics classroom, or classroom conversation in which the discursive nature between teacher and student are fluid and shift based on the role that the students and teachers have in the conversation:
1. Teacher to Student (teacher starting and carrying the conversation with the student; which is the lowest level discourse);
2. Teacher to Student (Teacher starting the conversation with student; that student responsible maintaining fraction of conversation);
3. Student to Student (students conversing about mathematical ideas); and
4. Student to Teacher (student starting conversation with teacher; both equally responsible for keeping the conversation going; which is the highest level of discourse) (Tawfeeq, 2009).

**Figure 1.** Directional and bidirectional discourse
Kingsborough Community College

In 2013-2014, KCC will be piloting a group of learning communities intended to help students as they encounter and struggle with quantitative reasoning (QR) across the curriculum. In the context of Nursing, Culinary Arts, Tourism and Hospitality, Community Health, Physical Sciences and Theater Arts—to begin—QR seminars will be offered to supplement specific courses. The KCC Quantitative Reasoning Fellows (QRFs) will assist with this effort, as well as other QR interventions at KCC. QRFs will develop resources with and for faculty, plan and run workshops, and assist in classroom settings.

Specifically, Quantitative Reasoning Fellows will engage in a variety of activities, including:

- Research successful and promising contextualized QR practices, helping to adapt desirable practices to the needs of students and faculty.
- Help develop and deliver QR workshops to students in various disciplines who are struggling with course-specific quantitative skills.
- Build a library of course-customized contextualized QR resources that offers assignments, content presentation ideas, and solution videos, for the benefit of both faculty and students.
- Develop and deliver small group, class, or campus workshops on strategies for QR (overcoming QR anxiety, strategies for applying fundamental QR skills across the curriculum, articulating QR challenges, responding to feedback, etc.)
- Partner with learning community faculty members who are developing contextualized QR curricula, providing a range of support for faculty partners, including but not limited to:
  - Helping faculty to articulate their particular QR goals and SLOs
  - Helping faculty to design contextualized QR assignments (both formal and informal)—including pairing QR with writing, assessing QR, etc.—to support students’ achievement of desired SLOs
  - Helping to construct explicit criteria for evaluating students’ grasp of curriculum-specific QR skills and SLOs
  - Helping to develop useful, effective ways of responding to student work
  - Being a dependable, resourceful presence in the classroom
- Attend weekly group meetings with the QRF coordinator to review progress, share best practices, and set new goals. These meetings will be part professional development (QRFs will read and discuss literature on QR theory and concrete skills application) and part work reports and discussion of focus and direction.
  - Submit regular workload reports to the QR coordinator.

Candidates must be interested in teaching and learning, including working in a classroom setting. They must be comfortable with the KCC mission and student population. The position requires 12-15 hours on campus per week, starting in late August 2013, with flexibility to accommodate KCC class schedules.
Since 2010/11, the LaGuardia Center for Teaching and Learning has offered both semester and year-long professional development seminars to small groups of faculty who have created and adapted assignments that help students develop quantitative reasoning skills. A rubric for evaluating students’ quantitative reasoning skills has been written, tested, and revised by faculty; the rubric has been used for the last three years to examine students’ progress in terms of LaGuardia’s general education Quantitative Reasoning competency.

With the help of CUNY Quantitative Reasoning Fellows, in 2013/14, LaGuardia will expand on our work in this area, endeavoring to build a stronger and more pervasive understanding of the importance of Quantitative Reasoning skills not only in terms of academic and career success, but also as crucial to understanding and participating in an increasingly data-driven society. Fellows will be involved in the following activities:

- Researching “best practices” with regard to Quantitative Reasoning Across the Curriculum approaches both within and outside of CUNY and evaluating their potential for LaGuardia faculty and students;
- Researching, reading, summarizing, and evaluating the literature on Quantitative Reasoning, including curricular resources and assignments available online;
- Adapting “best practices” and curricular resources to ensure usefulness for LaGuardia faculty and students;
- Participating in CUNY-wide conferences, presentations, etc. focused on the Quantitative Reasoning efforts occurring across the university, and sharing lessons learned with the Quantitative Reasoning team and, as appropriate, with the LaGuardia community;
- Helping to lead semester and/or year-long Quantitative Reasoning faculty development seminars;
- Creating and offering a series of short-term workshops and discussion sessions that will help both math and non-math faculty to better understand the importance of Quantitative Reasoning, and their role in helping students develop Quantitative Reasoning skills;
- Collaborating with math faculty to create classroom and lab assignments that teach math and computation skills utilizing a Quantitative Reasoning context;
- Working with LaGuardia’s Learning Communities team, explore possibilities for paired math and non-math courses in which students apply skills learned in math classes to authentic disciplinary questions and problems (for example, Statistics and Sociology, Basic Math and Accounting I, etc.).
- Working with faculty teaching in Learning Communities to create integrated assignments that promote the utilization of math and Quantitative Reasoning skills and concepts in disciplinary contexts
- Working with advisors to promote registration in paired math and non-math courses;
- Consulting with faculty developing and implementing assignments and providing ideas, suggestions, and feedback with regard to Quantitative Reasoning components;
• Helping to guide norming sessions in which faculty use LaGuardia’s Quantitative Reasoning rubric to evaluate student work;
• Working with LaGuardia’s Marketing Department to create engaging materials (posters, videos, social networking sites, etc.) designed to promote a culture of Quantitative Reasoning at LaGuardia, and facilitate the sharing of materials, approaches, curricula, etc.
• Attending regularly scheduled meetings with the Quantitative Reasoning Coordinator to establish achievable and measurable goals, report on progress, discuss challenges, refine goals, etc.

Roslyn Orgel, the LaGuardia Center for Teaching and Learning’s Associate Director for Campus Programs, who has guided our FIPSE-funded Project Quantum Leap and now facilitates our Strengthening Core Learning seminar (which addresses QR and other key General Education competencies), will serve as Quantitative Reasoning Coordinator and supervise the QR Fellows.
In 2014-2015, Lehman Quantitative Reasoning Fellows (QRFs) will participate in most, and possibly all, of the following tasks:

- Attend and fully participate in Lehman’s QR faculty development program (and other related faculty development programs) and assist faculty in developing instructional materials as needed (the fellows will also develop their own instructional materials).
- Work with select faculty to develop and revise QR assignments and assessment materials that correspond to specific QR learning goals that have been articulated.
- Provide QR assistance to students by attending classes, offering tutorials and/or holding office hours.
- Assist faculty in providing QR instruction in the classroom as needed (e.g., assistance with QR labs, providing feedback on drafts of student work, etc.).
- Conduct small group, class, or campus workshops on strategies for QR instruction (overcoming QR instructional anxiety, strategies for teaching fundamental QR skills, articulating QR goals, blending QR with writing, assessing QR, etc.).
- Input, analyze, and report on QR assessment data (including from faculty development workshops and student work).
- Undertake administrative tasks as needed (e.g., distributing and proctoring QR assessment tests, scheduling rooms, editing/reviewing QR materials, copying materials, doing literature searches, assisting with grant preparation, etc.).
- Providing web and/or Blackboard support to faculty participating in the QR Program, including assistant with technological problems. (Depending on qualifications, we also may also solicit help in website creation/maintenance.)
- Work in the Academic Center for Excellent (ACE), Lehman’s tutoring center, or select quantitative courses to assist students in quantitative disciplines as needed.
- Meet biweekly with the QR coordinators to review progress, learn together, and set new goals.

Quantitative Reasoning Coordinators

**Esther Wilder** is a professor in the Department of Sociology at Lehman whose research has used the lens of social stratification to identify factors that account for inequality in a variety of domains (including health, disability, ethnicity and educational attainment). She is currently the PI on an NSF-funded project to teach faculty throughout CUNY how to infuse QR throughout the curriculum and has co-directed Lehman’s QR initiative since its inception in 2010 [office: CA-B61; phone: 718-960-1128; email: Esther.Wilder@lehman.cuny.edu].

**Dene Hurley** is an associate professor in the Department of Economics and Business whose research interests cover applied statistical and econometric work in international finance and trade, focusing primarily on Asia. Since 2010 she has served as the co-director of Lehman’s Quantitative Reasoning (QR) initiative and she is currently a co-PI on an NSF-funded project to teach faculty throughout CUNY how to infuse QR throughout the curriculum [office: CA-370; phone: 718-960-8389; email: dthurley@optonline.net].

**Elin Waring** is a professor in the Department of Sociology at Lehman where she currently serves as chair. Her research has focused on criminology, especially white-collar crime, and she has played a leadership role in efforts to infuse both quantitative reasoning and writing across the curriculum. She is currently a Research Associate on an NSF-funded project to infuse QR throughout the curriculum at CUNY [office: CA-B65; phone: 718-960-7820; email: elin.waring@gmail.com].
Medgar Evers College (MEC) Quantitative Reasoning Fellows (QRFs) will engage in a variety of activities and programs designed to enhance curriculum, QR related instruction, student mentoring, and faculty professional development initiatives. The QRF will report directly to the Writing Center (WC) Director and will coordinate efforts with faculty, staff, and the center’s other Fellows to initiate QR strategies across all disciplines.

The MEC QRFs duties will include, but are not limited to the following:

- Researching QR related practices at other schools that have well-established QR programs
- Identifying desirable QR related practices for use at MEC and adapting them to the needs of MEC faculty and students
- Forging strong alliances with deans, chairs, and faculty to promote QR related curriculum development initiatives
- Observing classroom lectures in courses to develop suitable QR assignments and topics for class discussion
- Providing support to faculty by helping them to revamp course goals, syllabi, and curriculum
- Helping faculty to construct definitive criteria for evaluating and assessing student QR responses to assignments
- Conducting workshops designed to help faculty to develop new ways of presenting QR material within lessons and lectures. Workshops should also help instructors teach fundamental QR skills, articulate QR goals, pair QR with writing assignments, etc.
- Assisting the WC director in designing and implementing the aforementioned faculty development workshops
- Attending weekly meetings with the WC director and WC Fellows to review projects, assess reports, share best-practices, and set new goals
New York City College of Technology

In the 2014-2015 Academic Year, several important initiatives will coincide at New York City College of Technology:

- A new BS program in Mathematics Education will begin its first full year. The program has a special focus on applications of mathematics in career areas.
- For the first time, students majoring in non-STEM areas will enroll in a new quantitative reasoning course.
- City Tech’s new general education requirements, incorporating CUNY Pathways, will go into effect, including a requirement that all baccalaureate students take at least one interdisciplinary course.

City Tech’s Quantitative Reasoning Fellows will participate in one or more of these initiatives, as well as in some of the College’s long-standing efforts, including peer-assisted learning, learning communities linking math and career majors, and laboratory improvement, all of which are dedicated to improving both students’ competence in mathematics and their ability to apply mathematical concepts and skills across the curriculum and in their major areas of study. Specific activities may include:

- Assist the faculty teaching the new QR course to develop and pilot course assignments and classroom activities that will engage students in strengthening their quantitative reasoning and applying QR to their majors and other subjects.
- Collaborate with faculty teaching in learning communities, or who are gen ed fellows in the Title V Living Lab project, or designing case studies as part of the NSF I cubed grant to develop and pilot interdisciplinary instructional materials.
- Support the development of upper-level interdisciplinary courses in areas such as sustainability, demographics, or economics, as well as strengthening the mathematical applications in upper-level research methods courses in the major.
- Work with the Director of the Math Ed baccalaureate program and the Director of the peer-assisted learning program to develop a training program for student mentors.
- Working with the Office of Assessment and Institutional Research, assist the Assessment Committee in implementing assessment of quantitative reasoning across the curriculum, with the goal of advising departments on designing and implementing strategies for strengthening student achievement.
- QR Fellows will participate in regular meetings with the coordinator.
Queens College

The Quantitative Reasoning Fellowship at Queens College will focus on the support of faculty to develop effective teaching materials to improve current instruction and to incorporate quantitative literacy skills across the curriculum as an essential component of critical thinking. QR Fellows will be assigned specific activities working with faculty and meet as a group with the QR coordinator to discuss approaches to instruction and particular initiatives. Job responsibilities include:

- Work with the QR coordinator to increase awareness of the QR initiative on campus and support of faculty development activities within departments.
- Participate in QR faculty development and assist in conducting small group, class, or campus workshops on strategies for QR instruction under the auspices of the Center for Teaching and Learning (CTL)
- Work with faculty in select courses to develop and revise QR assignments and assignment materials that correspond to specific QR learning goals.
- Attend regular meetings with the QR coordinator to review progress, share relevant pedagogies, articulate relevant goals, assess progress and development evaluation plans.
- Participate in regular meetings under the guidance of the QR coordinator to engage in professional development (the literature and theory of QR, best practices)
- Work with the coordinator to develop online resources for faculty and students, including links to videos, text, chat groups, etc.
- Work with the QR coordinator to assess the effectiveness of teaching/learning strategies through tests, surveys, and portfolios.

Professor Joanne Miller serves as the QR Coordinator. She teaches statistics and data analysis in the Sociology Department. She previously served as Chair of the Sociology Department and Director of the MA Program in Applied Research. She came to CUNY from the National Science Foundation and the NIMH intramural research program.
The QR Fellows will be working closely with faculty in the Engineering Technology and Business Departments at Queensborough Community College. These departments oversee several programs in which quantitative reasoning is essential for student success.

The QR Fellows will:

- Research QR pedagogies and work with the QR coordinator to infuse methods that have been proven effective into classes at Queensborough.
- Consult with faculty, individually and in groups, to help develop, implement, and test QR pedagogies.
- Participate in QR related professional development workshops for faculty in collaboration with the Center for Excellence in Teaching and Learning (CETL).
- Assist faculty in the classroom as necessary to assist with the implementation of QR modules and assignments.
- Help the learning centers at the college coordinate with faculty involved in QR instruction.
- Develop and implement an evaluation plan for QR related activities at the college in collaboration with the Office of Institutional Research and Assessment. Assist faculty in developing assessment instruments for QR to supplement departmental assessment.
- Meet weekly with QR coordinators to review relevant data, and report to the administration as necessary.

Quantitative Reasoning Coordinators and Duties:

Dr. Ed Volchok will be the QR coordinator for the Business Department. He is an Associate Professor and is currently doing research on the effects of QR on student success in a college business program.

Jeffrey Schwartz will be the coordinator for the Engineering Technology programs. He is involved in several educational initiatives at the college.
In 2014-15, SPS Quantitative Reasoning Fellows will be (1) assisting SPS academic directors, faculty and staff in developing and supporting QR-related courses and course components for our online degree programs, 2) working directly with students on QR related problems, and (3) designing faculty training materials and student resources related to quantitative reasoning. The QR Fellow must be available to work at least one day or two half days on site at our offices at 119 West 31st St., with the remainder of time working online. Reporting to the SPS QR Fellows Coordinator, Susan Ko, who is also the Director of Faculty Development and Instructional Technology for SPS, they will work closely with academic directors, students, and select faculty, engaging in a number of projects and tasks, including:

- Assisting in the development of new and redesigned instructional and assessment materials for (1) selected research methods courses in business and social sciences offered online in which QR is an important element and (2) other courses, e.g. those in history, science, politics, in which quantitative reasoning activities could appropriately be integrated.

- Reviewing the research on quantitative reasoning and on best practices in developing students’ quantitative reasoning skills in a variety of discipline-specific curricula.

- Contributing to a curated website for SPS of QR resources for students and faculty on the CUNY Academic Commons.

- Holding in person tutoring sessions with students at scheduled times on selected evenings during the semester at our offices at 119 West 31st St.

- Working with students referred by programs or student services to the Fellow for help, using email, phone, Skype or face-to-face.

- Working with faculty individually or in faculty development workshops to introduce effective QR instructional and assessment strategies, refine or design individual assignments involving QR, and to suggest ways to present QR content within Blackboard or through the use of other technologies.

- Meeting regularly with the QR Fellows Coordinator and academic directors as needed to review progress, share best practices and set goals.

Submit biweekly project logs to the Coordinator and also regularly update academic directors with whose programs they are working; keep an ongoing record of interactions with students; record interactions with faculty into the faculty development log.
York College

The York College (YC) Quantitative Reasoning (QR) Initiative will be spearheaded by the QR coordinator and involve QR fellows. The YC QR group will:

a) Plan, organize, and host a faculty development program to introduce QR across the curriculum beginning with key getaway courses.

b) Organize college wide QR reasoning lectures and demonstrations to introduce the general college community to the initiative.

c) Recruit and support faculty volunteers from key getaway courses to design appropriate QR instructional modules for their courses.

d) Introduce QR instructional modules to courses

e) Through the professional development program and related activities develop across the curriculum QR learning objectives and competencies.

f) Assist faculty and departments in developing discipline and course specific QR learning objectives and competencies.

g) Observe classes to ensure QR instructional modules, learning objectives and competencies introduction, integration and implementation.

h) Promote the integration of QR learning objectives and competencies in course syllabi.

i) Work with the YC assessment committee to design, develop and implement a QR assessment program to gauge the impact of the project.

The QR initiative will be supported by the YC QR committee, will support, plan, and organize program activities, working with the QR fellows. It will be led by Coordinator Adefemi Sunmonu (Mathematics and Computer Science), and involve Tania Levey (Social Sciences), Lawrence Preiser (Behavioral Sciences), Ivica Arsov (Biology), Sundeep Bisla (English), Deborah Swoboda (Behavioral Sciences), and Wayne Forrester (Business and Economics).