Lehman College
Division of Education
Department of Early Childhood and Childhood Education
Program Title: Childhood Education, Grades 1 through 6 (program 2) with Mathematics Teaching Specialization
5th-year program of BS or BA in a Liberal Art or Science and an MSED in Childhood Education
Anticipated Date for Implementation: Fall 2011
Approved by Department: April 12, 2010
Approved by Lehman College Senate on XXXX
Overview

This letter of intent proposes to create a new 5th-year BA or BS/MSED 44-48-credit program, over four semesters of study at the graduate level to prepare Childhood Education Teachers with specialized expertise in mathematics and to meet the needs of bilingual/English language learners (ELL) and special education students. The program is needed to fulfill the proposal of a United States Department of Education-funded program to transform teacher education programs with clinically rich, school-based focus in teacher preparation.

Purpose and Goals

In April 2010 the Division of Education at Lehman College was one of twelve teacher preparation institutions in the nation to receive over 7.6 million dollars of federal funding under the Teacher Quality Partnership (TQP), a part of the American Recovery and Reinvestment Act (ARRA). The grant entitled The MATH-UP initiative: Mathematics Achievement with Teachers of High-need Urban Populations is a partnership among Lehman College, the New York City Department of Education (NYCDOE), the Educational Testing Service, Research for Better Schools, and BronxNet.

The over-arching purpose and objectives of the MATH-UP 5th-year program are designed to meet the intent and spirit of the TQP and to achieve the goal of increasing mathematics achievement (and reducing the achievement gap) by increasing the number of childhood educators who are:

- **Diverse** and representative of the communities in the Bronx by recruitment, rigorous selections and preparation to enter teaching of 125 Hispanic, African-American and other students from under-represented groups who are Bronx resident undergraduates.
- **Content strong** in Mathematics and Literacy by developing an innovative and replicable model of teacher preparation in a 5th-year program that is content-enriched, school-focused, needs-based, and integrates with professional development and induction along a continuum of teacher learning.
- **Datawise** and prepared to differentiate instruction for students who speak languages other than English and who have special learning needs by integrating assessment knowledge and skills from complementary resources in teacher preparation, professional development, induction, and sustained through the development of video cases.
• Highly Qualified in both childhood education and bilingual/ELL methods of instruction to impact student achievement with a math-rich, assessment-focused BA or BS/MSED program that includes courses in meeting the needs of and differentiating instruction for students who are bilingual/ELL.

• Inspired to make a long-term commitment to remain in teaching to meet the needs of the urban populations in Bronx schools by teaching in the communities where they live.

Needs and Justification

There are national needs to focus on early mathematics education and the rigorous preparation and retention of prospective teachers as raised in the 2001 report of the National Academy of Science. In the executive summary of the report, entitled Adding it up: Helping children learn mathematics, the authors state, “…too few students in our elementary and middle schools are successfully acquiring the mathematical knowledge, the skill, and the confidence they need to use the mathematics they have learned” (2001, p. 1). Furthermore, the report claims that “The preparation of U. S. preschool to middle school teachers often falls far short of equipping them with the knowledge they need for helping students develop mathematical proficiency. Many students in grades pre-K to 8 continue to be taught by teachers… who have at best a shaky grasp of mathematics” (p. 4). The McKinsey report (2009), entitled The economic impact of the achievement gap in America’s schools, summarizes the impact of ineffective early instruction in maintaining the achievement gap, “…while early test scores are important indicators of a student’s life chances….the period between third grade and eighth grade can be critical….students who improve their performance between third and eighth grade are much more likely to graduate with honors…” (p. 19).

In the Bronx (population: 1.3 million), where this MATH-UP teacher preparation program will be implemented, the urgency and depth of the need is brought into full focus. Over 80% of incoming ninth graders fail to meet state standards in mathematics, demonstrating that Bronx students in grades K through 8 are failing to be adequately prepared for high school mathematics. Fourth- and 8th-grade state tests reveal that fewer than half of Bronx students in grades 3 through 8 score at or above proficiency in mathematics, demonstrating that inadequate mathematical preparation begins early and persists into high school. The McKinsey report (2009), again, notes that “…lagging achievement evidenced as early as fourth grade appears to
be a powerful predictor of rates of high school and college graduation, as well as lifetime earnings” (2009, p. 5).

Exacerbating this achievement crisis are the complex and complicating factors of race and income, noted earlier by the Mathematic Advisory Council, that underlie disparities in mathematics achievement. In its study of achievement gap in America’s schools, the McKinsey report (2009) points out that there is a **racial gap** where Latino students are roughly two to three years behind white students of the same age, a **top gap** where Latinos are overrepresented among low-scoring students and underrepresented at the top with less than three percent of Latino children at the advanced level of mathematics achievement, and a **poverty gap** in which impoverished students, as defined by eligibility for free lunch, are two years of learning behind better-off students of the same age (2009, pp. 9-12). This “perfect storm” of contributors to the achievement gap is nowhere more evident than in the Bronx where:

- Over 50% of school-age children come from families where languages other than English are spoken.
- The greatest proportion (nearly 25%) of people in extreme poverty (50% below the poverty line) resides in the South Bronx.
- The child poverty rate in the Bronx is over 58% (the highest in the US outside of Puerto Rico).

The need in the Bronx is equally urgent for the preparation and retention of effective teachers. Forty-four percent of Bronx teachers have less than three years experience, where five to seven years of teaching experience is the period during which a teacher is instructionally most effective at increasing student achievement. In addition, another 27% of Bronx teachers leave teaching in less than five years. A recent study of equity issues in mathematics by the Association of Mathematics Teacher Educators (2008) suggests that “Effective teachers…infuse this instruction with culturally relevant and engaging mathematics tasks that are rigorous, yet accessible.” However, fewer than 50% of Bronx teachers are culturally and linguistically representative of the Bronx community. As a result, these high teacher attrition rates, low levels of teaching experience, and cultural and linguistic mismatches among students and teachers persistently subject Bronx students to novice instructional practices unconnected to their lives and the communities where they live.
The mission of Lehman College is to serve “…the Bronx and surrounding region as an intellectual, economic, and cultural center. Lehman College provides undergraduate and graduate studies in the liberal arts and sciences and professional education within a dynamic research environment, while embracing diversity and actively engaging students in their academic, personal, and professional development.” The proposed program will serve the Bronx in preparing teachers to teach in the Bronx, will provide an undergraduate and graduate experience, will launch a dynamic and research strong professional preparation program, and will engage students in their academic development.

The early childhood and childhood education teacher preparation programs of Lehman College, although nationally recognized and accredited, are in need of innovation in key areas. Designed primarily in keeping with state regulations that are input heavy and field experience “light,” existing programs are generic, course-based, and lack responsiveness to the local context of need and urgency to recruit, retain, and prepare Bronx teachers for Bronx schools. In addition, current preparation programs need strengthening to prepare teachers to effectively teach to the on-going issues of a mathematics achievement gap and to effectively meet the needs of English language learners and students with special needs. Capacity and commitment are clearly evident in the Division of Education at Lehman College. However, the proposed, federally supported BA or BS/MSED program with a renewed rigor and focus is necessary, if not urgent, to model how partnership with the local schools can address and impact critical concerns of student achievement as well as teacher quality and retention.

**Student Interest/Enrollment**

Our current pool of undergraduate minors in education will be interested in this program for the following reasons:

- The program’s focus on shortage areas of mathematics, bilingual/ELL and special needs ensures that program participants with this specialized preparation and the year-long clinical experience are uniquely ready to assume jobs that are scarce in childhood education.
- South Bronx partner schools with high turnover rates will be the clinical placement sites for project participants.
• Partnership with NYCDOE and the Teaching learning collaborative provides students with additional training and the benefits of being at the “head of the line” when jobs openings are announced
• Students will receive a living wage stipend during their clinical preparation year.
• Students will receive federal TEACH grant funding to pay for their graduate education.
• Students will receive netbooks to access data.
• Students will be participating in special project events and added value experiences throughout the model program.

Recruiting highly qualified, minority individuals into the teaching force is one of the four core purposes of the TQP funds. In each of the five years of grant funding, the MATH-UP initiative will recruit cohorts of 25 Bronx-resident, Hispanic, African American, and students from other underrepresented groups who have the interest, demonstrated achievement in, and affinity for learning to teach mathematics to elementary children, grades 1 through 6. Highly qualified individuals will be recruited from all of the following four contexts:

1) From the 900 or more undergraduate students who currently elect to “minor” in childhood education at Lehman College.

2) From the Black Male Initiative (BMI) program, particularly Teachers as Leaders Project (TALP) scholars who are primarily Hispanic and Black men interested in teaching in New York City schools.

3) From students who transfer into Lehman College from local community colleges with whom the division of education has articulation agreements for childhood education, including Bronx Community College and Hostos Community College.

4) From students who transfer into Lehman College from other colleges and/or community colleges without articulation agreements.

Interest, demonstrated achievement in, and affinity for mathematics will be determined by having:

• Achieved proficiency on the CUNY Mathematics placement examination.
• Passing algebra in high school with a B or better.
• A minimum of nine semester hours of mathematics study prior to certification with an average GPA of 3.0 or higher.
Graduation in the top third of their high school class.

Students will apply to the program at various points. The following entry points are available to undergraduates:

- at the end of their sophomore years to enter as seniors,
- during their junior years to enter as seniors, or
- during the first semester of their senior years to enter in the second semester.

Admissions requirements are as follows:

- A grade point average of 3.25 for all undergraduate coursework,
- Two letters of recommendation,
- An interview with MATH-UP program personnel and an interview in Spanish for students who will be taking the bilingual extension, and
- An on-site writing sample and a Spanish writing sample for students who will be taking the bilingual extension.

In order to be eligible for TEACH grant funding to pay tuition and fees, additional admission criteria also apply as follows:

1. A cumulative Lehman College GPA of at least 3.25 or submit proof of scoring at or above the 75\textsuperscript{th} percentile on a national college admissions test.
2. Complete a four (4) year service obligation within eight (8) years of finishing teacher training.

Projected enrollment appears in the following table, with anticipated attrition indicated year to year. All students are full-time.

<table>
<thead>
<tr>
<th>Anticipated enrollment, retention and cohort progression</th>
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<tr>
<td></td>
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<tr>
<td>LC Senior:</td>
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<tr>
<td>Cohort 1</td>
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<td>Cohort 3</td>
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<td>Cohort 4</td>
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<td>Cohort 5</td>
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The enrollment numbers were based on the grant proposal and the agreement with five Bronx schools to place five interns at each site. Currently, the graduate childhood education program enrolls approximately 100 new students annually. Enrollment projections were also based on anticipated student interest in the program benefits and a percentage of the incoming graduate population that would be sustainable with our current resources. The projected attrition rate of approximately 20% was based on experience with the NSF-funded Noyce scholarship program, a BS/MSED in middle school math and science teacher preparation. The proposed program is unique, the first of its kind in CUNY and a national model of clinically rich, school-based, needs-focused teacher preparation program.

**Curriculum**

To prepare the MATH-UP pre-service teachers to meet the challenges of urban teaching in high-need schools, the 5th-year MATH-UP teacher preparation program begins in the senior year as students complete their undergraduate studies and graduate with baccalaureate degrees in one of the liberal arts and sciences. A sample 5th-year MATH-UP program, outlined below, comprises two summers and one full academic year of graduate study, resulting in an MSED in Childhood Education, as well as New York State Initial and Professional certification in childhood education (grades 1 to 6), with a possible certification extension in bilingual education. At the end of the program, students will be initially certified as Childhood Education teachers and can apply for certificate extensions in bilingual education. After teaching for three years with the completed MSED, the students are also eligible for professional certification in the same areas.

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<th>Plan of Study: MATH-UP BA or BS/MSED Program of Study</th>
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<tr>
<td><strong>LC</strong></td>
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<tr>
<td>Under-graduates:</td>
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<tr>
<td>minor courses</td>
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<tr>
<td><strong>Graduate SU-1</strong></td>
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<td></td>
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<tr>
<td><strong>Graduate</strong></td>
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</tbody>
</table>
Students who transfer into Lehman College, without having completed the undergraduate ECCE minor, will have their transcripts evaluated for equivalencies in order to have the minor courses waived.

All the proposed courses in the proposed MATH-UP program of study currently exist as part of one or more programs of study at the undergraduate or graduate levels. It is anticipated that this program will continue beyond the life of the grant and serve as a model to develop other 5th-year programs.

**Faculty**

Current faculty members who will be actively engaged in the implementation of this program:

1. Dr. Jeanne Peloso, Assistant Professor, science specialist and childhood education graduate program coordinator
2. Dr. Nancy Dubetz, Associate Professor, Professional Development School (PDS) liaison, bilingual specialist
3. Dr. Victoria Rodriguez, Associate Professor, bilingual special education specialist and graduate program coordinator
4. Dr. Cecilia Espinoza, Associate Professor, early childhood bilingual specialist and graduate program coordinator
5. Dr. Helene Silverman, Professor, early childhood/childhood mathematics specialist
6. Dr. Aliex Ross, Associate Professor, childhood education and Professional Development School liaison
7. Dr. Abigail McNamee, Professor, Chair of the Department of Early Childhood/Childhood Education

Proposed new faculty to be hired:
1. Clinical Professor of childhood/early childhood mathematics education (new line paid through the MATH-UP grant)
2. Assistant Professor of childhood mathematics education (new line to be requested through tax levy funding)
3. Assistant Professor of childhood special education or childhood bilingual/ELL education (new line to be requested through tax levy funding)

**Cost Assessment**

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<tr>
<th>Expenditure</th>
<th>Revenue (+)</th>
<th>Cost (-)</th>
<th>Source</th>
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<tbody>
<tr>
<td>2 New tenure-track Faculty (if approved)</td>
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<td>65,000 X 2 = 130,000 (for each of 5 years plus fringe)</td>
<td>Tax levy</td>
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<tr>
<td>1 Clinical faculty</td>
<td></td>
<td>70,000 (for each of 5 years plus fringe)</td>
<td>MATH-UP grant</td>
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<tr>
<td>Program administrative and support personnel</td>
<td></td>
<td>2,787,509 (total over five years)</td>
<td>MATH-UP grant</td>
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<tr>
<td>Equipment, supplies</td>
<td></td>
<td>950,000 (total over five years)</td>
<td>MATH-UP grant</td>
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<tr>
<td>Contractual</td>
<td></td>
<td>3,071,419 (total over five years)</td>
<td>MATH-UP grant</td>
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<td>125 students x tuition for a 48 credit program with 12 credits as undergrads and 36 credits as grads</td>
<td>$15,410 x 125 = $1,926,250.00 (over five years)</td>
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<td>Tuition from students and/or financial aid</td>
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*Note: The funds will remain available because the funds have already been fully allocated to the program by the federal government.*

**References:**
