BRIDGING SCHOOLS & UNIVERSITIES TO IMPROVE MATH AND SCIENCE

Dr. Mary Little, PhD
Dr. Suzanne Martin, PhD
Dr. Martha Lue-Stuart, PhD
Dr. Jo Smith, PhD

Advisory Panel and Focus Group
BUILDING A BRIDGE TO SUPPORT HIGHLY QUALIFIED MATH AND SCIENCE MIDDLE SCHOOL TEACHERS OF STUDENTS WITH HIGH INCIDENCE DISABILITIES

Principal Investigators:

Mary Little, PhD
Martha Lue-Stewart, PhD
Suzanne Martin, PhD
Advance Organizer

- OVERVIEW: Goals and Objectives
- TEACHER EDUCATION: Issues and Solutions
- LOGIC MODEL: Action Planning Solutions across Goals
- OPPORTUNITIES FOR COLLABORATION:
  - University and Coursework
    - Recruitment
    - Program and Syllabi Revisions
      - Course Content and Delivery
      - IRIS Modules
      - Content Additions: Math and Science
      - School-based Learning/Internships
  - Induction/Mentoring
- FEEDBACK
“NEVER DOUBT THAT A SMALL GROUP OF THOUGHTFUL COMMITTED PEOPLE CAN CHANGE THE WORLD: INDEED IT IS THE ONLY THING THAT EVER HAS.”

- Margaret Mead
INTRODUCTIONS
Advance Organizer

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- FEEDBACK
- Almost 98% of nation’s school districts report shortages of ESE teachers (Sheperd & Brown, 2003).

- Between 135,000 and 200,000 new ESE teachers will be needed in next ten years (Bureau of Labor Statistics, 2008).

- Almost 50,000 ESE teachers did not have proper certification for teaching positions (USDOE, 2003)

- Single most critical component of educational achievement is well-prepared teacher (Darling-Hammond, 2003; O’Shea, Hammitte, Mainzer & Crutchfield, 2000).

- Preparation for effective teachers includes: content, pedagogy, and intensive field experiences (Brownell et al., 2005; Darling-Hammond & Sykes, 2003).
325 T PROGRAM ENHANCEMENT GRANTS

- Second year of federal awards
- Clearly articulated components to address
- Monthly updates and collaborative discussions across sites and among grant recipients to share research, procedures, and activities.
- Collaboration across stakeholders (colleges, departments, school district and state personnel)
- Year 1: Program revision; continued funding based upon approval of program enhancements for duration of five years, if continued.
Purpose of Project

To enhance existing, approved initial certification programs to prepare highly-qualified teachers of students with high incidence disabilities (HID) within the Masters program. The major content focus will be math and science instruction for students with HID, including CLD students, in co-taught and resource settings within urban middle school that have not met AYP targets.
325T PROJECT GOALS

- Improve recruitment to increase the number of highly qualified teachers in ESE, especially from diverse backgrounds;
- Enhance and implement an effective preparation program focusing on math and science content instruction at the middle school level within the ESE Masters and certification to assure HQT status and skills to successfully teach in urban settings;
- Improve mentoring and induction;
- Implement technology to support overall program effectively.
“Building Bridges”
Recruitment, Program Enhancement, Mentoring, and Technology
Advance Organizer

- OVERVIEW: Goals, Objectives, and Interests

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- FEEDBACK
“If the quality of novice special educators’ practices is to be supported, the support must come in multiple forms and be distributed among all participants in the school. Finally, schools are dependent on strong leaders with the knowledge and skills about how to build teacher communities for all teachers from the outset—including the novice special educator.”

Pugach, Blanton, Correa, McLeskey & Langley, 2009, p. 67-68)
Marleen C. Pugach, Professor, University of Wisconsin at Milwaukee. Her interests include teacher preparation that links general and special education, urban school-university partnerships to support the simultaneous renewal of teaching and teacher education, building collaborative relationships between special and general education teachers, the intersection of inclusion and school reform, and qualitative research methods. She is a national and international consultant on the design and reform of teacher education programs with an emphasis on preparing teachers for inclusive schools.
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Focus Group- Previous Input from Stakeholders for our UCF Organizational Growth

- Most programs now lead to ESOL endorsement.
- Additional competencies and revised courses added.
- Additional classes developed and taught to EL ED majors.
- Endorsement programs written, approved, and external federal funding received to support teachers in these areas.
- Knowledge and skills to teach diverse students, especially CLD.
- Classroom and behavioral management skills.
- Knowledge and skills to teach ESE students in inclusive classes.
- Knowledge and skills to teach students with autism, severe and profound learning needs.
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## Recruitment, M.A. & M.Ed. Programs

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<th>Fall 2005</th>
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Advising Websites
• Improve recruitment to increase the number of highly qualified teachers in ESE, especially from diverse backgrounds;

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Program Revisions
## Exceptional Student Education: Infusion of IRIS Modules into Masters Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>When Course is Offered</th>
<th>IRIS Modules</th>
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<tbody>
<tr>
<td>EEX4070 - Teaching Exceptional Students</td>
<td>Fall, Spring</td>
<td>Accessing the General Education Curriculum: Inclusion Considerations for Students With Disabilities (McLaughlin/Nolet)</td>
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<td>Accommodations to the Physical Environment: Setting up a Classroom for Students with Visual Disabilities (Corn; revised by Naimy)</td>
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<td>Effective Room Arrangement: Setting up a Classroom for Students with Visual Disabilities (Corn; revised by Naimy)</td>
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<td>Instructional Accommodations: Making the Learning Environment Accessible to Students with Visual Disabilities (Corn; revised by Naimy)</td>
</tr>
<tr>
<td>EEX5051 - Exceptional Children in the Schools</td>
<td>Fall and Spring</td>
<td>A Vision for Victory: Strategies for Including Students with Visual Disabilities in the Classroom (Grand Challenge) (Anne Corn)</td>
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<td>Content Standards: Connecting Standards-based Curriculum to Instructional Planning (Zina Yzquierdo)</td>
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<td>Effective Room Arrangement: Setting up a Classroom for Students with Visual Disabilities (Corn; revised by Naimy)</td>
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<td>Guiding the School Counselor: An Overview of Roles and Responsibilities (Amy Milson)</td>
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<td>School Nurses: Roles and Responsibilities in the School Setting</td>
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<td>What Do You See? Perceptions of Disability (Smith/Yzquierdo)</td>
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<td>Working With Your School Nurse: What General Education Teachers Should Do to Promote Educational Success for Students with Health Needs (Mueller/Hessler)</td>
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<td>Algebra (Part 2): Applying Learning Strategies to Intermediate Algebra (Kim Paulsen)</td>
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<td>Content Standards: Connecting Standards-based Curriculum to Instructional Planning (Zina Yzquierdo)</td>
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<td>Transition of Students With Disabilities: High School to Work or Post-Secondary Education (Blasich/Potton)</td>
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<td>Using Learning Strategies: Instruction to Enhance Learning (Reid/Graham/Harris)</td>
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<td>EEX6061 - Instructional Strategies PreK-6</td>
<td>Spring</td>
<td>Early Reading (Sayeski/Paulsen)</td>
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<td>Norms and Expectations (Everson/Poole)</td>
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<td>Providing Instructional Supports: Facilitating Mastery of New Skills (Bob Reid)</td>
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<td>RTI (Part 1): An Overview (Fuchs/Fuchs/Vaughn/Woodruff)</td>
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To be authentic, conversations must take place in great depth, accompanied by serious joint reflection on the practice of teacher education. If the conversation between teacher educators is not directed at the most difficult issues—e.g., issues of equity or fundamental shifts in curriculum and instruction—collaborative efforts will be surface-level and short-term. To be enduring, the most pressing needs of children and youth must drive our efforts.”

(Griffin & Pugach, 2007)
Advance Organizer

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The Basic Flow

**Inputs**
This is what we need – personnel, facilities, funds, board members, conditions, etc.

**Activities**
This is what we will do – actions taken to deliver the products and services

**Outputs**
This is what we will deliver – tangible work products or services

**Outcomes**
These are the results we expect – derived from the delivery of outputs to clients

**Impacts**
This is the ultimate goal behind the outcomes – Sustain growth or improvement of society
Bridges Logic Model

Resources

- UCF Faculty, Bridges Program Staff & UCF Students
- Middle/High schools-Districts
- HQ/NBCT Teachers, Students, Counselors
- Parents
- Community Partners – CEC, NMTE, NSTE, Industry, Volunteers
- USDOE Cooperative Funding & Resources
- UCF Technology -Lab facilities & equipment
- ATEN
Bridges Logic Model

Activities

- Establish Bridge Program Team
- Review and Revise ESE Graduate Curriculum – Integrate New Technologies
- Assemble Stakeholders & Solicit Input
- Recruit ESE Graduate Students & Gather Baseline Data
- Establish data collection system to analyze/revise program
- Develop Virtual Activities – Mentoring, Instruction, Collaboration
Bridges Logic Model

Outputs

- Model Exceptional Education Graduate Program
- Curriculum modules aligned with state/federal standards for HQT
- UCF ESE Students prepared to teach ESE students in Math/Science
- UCF ESE Students prepared to use technology in classroom
- Virtual Classroom Instruction, Peer-Coaching/Mentoring
- Dissemination & Presentations
Bridges Logic Model

Outcomes

- Increase in teachers’ confidence integrating technology in the classroom
- Increase in teachers’ understanding of math/science concepts
- Improved Mentoring and Induction Activities
- Increased knowledge of math/science content
- Effective use of technology to support overall program effectively
Bridges Logic Model

Impact

- Increase in the number of SES HQT knowledgeable of best practices
- Increase in the retention rate of SES HQT in education
- Increase the placement of highly qualified SES teachers into schools
- Increase in the technology proficiency of ESE HQT teachers
At the heart of a learning organization is a shift of mind—from seeing ourselves as separate from the world to connected. A learning organization is a place where people continually discover how they create their reality and how they can change it. (Senge, 1990)
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This work can be enriched immeasurably through partnerships. These partnerships can constitute a natural, on-the-job form of faculty development, which ultimately can serve the goal of shared responsibility for teaching. By joining forces in this manner, we can begin to provide answers to a new generation of questions about how best to achieve the goal of delivering instruction of the highest quality to all students.” (Pugach, 2007, p. 578)
Sincere thanks for leading these educational changes with us!!!

We are honored and humbled to continue our collaboration with each of you!