**PROJECT SUMMARY**

**CAREER: Mathematics Instruction for English Language Learners (MI-ELL)**

In the next 40 years, the population of Hispanics in the United States is predicted to double due in part to immigration of Latin American students who will continue their education in classrooms with a large percentage of English Language Learners (ELL). Currently, significant achievement gaps in mathematics exist between ELL students and their majority counterparts. In addition, recent mathematics achievement results in the state of Texas show that districts in the southern region perform better despite the large percentage of socio-economically disadvantaged students. Therefore, I propose to investigate what teacher characteristics related to knowledge and skills contribute to Latino ELL student learning gains, and to what extent these characteristics mediate the differences between school districts.

The **intellectual merit** of the proposed study is to empirically estimate whether and which classroom factors contribute to mathematics gains of English Language Learners in Texas schools. The emphasis is on mathematical knowledge for teaching (MKT), knowledge of students as English Language Learners, academic language proficiency in English and Spanish, and the mathematical quality of instruction (MQI) in Grade 8 classrooms from Central and South Texas districts.

Connections between research and practice will be accomplished by developing professional development and instructional activities for in-service and pre-service teachers of ELL that are research-based and focus on the mathematics needed to teach ELL efficiently. Current state of research will inform the initial development of materials to be used with the participants. Results of the research study, in particular the classroom practices analyses, will be used to revise and improve the materials to produce a model for professional development and teacher education.

The research study will follow a primarily quantitative method, two-level cluster design in which students are nested within teachers. Most of the teacher characteristics and student learning gains will be captured with existing rigorously developed and validated instruments. Powerful multivariate analysis of the data such as hierarchical linear modeling will be used to measure the effects of teachers’ knowledge and skills.

The proposed study will achieve a **broader impact** through the integration of research and educational activities. It will not only expand our knowledge of a student population we know very little about, but by understanding learning processes better in a range of contexts it will also make it easier to address the pressing challenges of educating *all* children in the fast-growing population of Latino students in the United States. Additionally, the study will shed light on how best to produce *qualified* teachers in mathematics who work in bilingual contexts. Finally, the local collaboration of school districts and university educators will expand our reach into new areas of research for education of mathematic teachers of ELL. This educational experience will create a foundation for the improvement of mathematics teacher education for ELL the way other studies have impacted other aspects of teacher education in mathematics.