

1. Proposed internship. Research assistant for I.M.P.A.C.T. (Improving Mathematical Practices via Algebraic Connections & Technology) summer institute in August 2010. Leaders of this project are Dr. Jennifer Suh and Dr. Padhu Seshaiyer. The purpose of the project is the development of mathematical teaching knowledge through a collaborative network of pre-service and in-service teachers who “collaboratively plan lessons, exchange best instructional practices and effective uses of tech-knowledgey tools to design instructional tasks that promote algebraic conceptual thinking. Teacher collaboration enhances their professional practice which then affects students' learning.”

I will attend the institute for one week as a research assistant doing qualitative and quantitative data collection through observations, pretest and posttest scores of content knowledge, and surveys of teacher attitudes, confidence levels, anxiety, self-efficacy, etc. I am registered for EDRS 812 for the summer term and will complete the course on 28 July. I expect to apply my newly-gained knowledge of qualitative research in this internship. I am especially interested in seeing how qualitative methods can be applied in teacher professional learning.

My learning objectives are to: gain experience with a real research study; learn how to collect and analyze data; learn how to conduct observations and record findings; and, learn how to validly draw conclusions. So far, these ideas have been discussed in classes but I have no experience being actually involved in research. I will work under the guidance of the experienced educational researchers who are conducting the study. And, I want to know that I am competent to design, conduct and evaluate an educational research study on my own and to be able to draw valid conclusions. Ultimately, of course, I want to contribute to the body of knowledge by publishing my research.

2. Activities/duties to be performed.

- During the week prior to the professional development study, I will meet daily with my supervisors to develop the research plan including a determination of what data will be collected, how it will be collected, and how it will be analyzed. I also intend to observe several of Dr. Seshaiyer's undergraduate classes for mathematics majors. I hope to compare and contrast my observations of mathematics majors with my observations of pre-service and in-service elementary school math teachers.
- During the week of the study, I will arrive before each session to make any needed preparations. I will attend every session and collect the research data and record my observations as instructed by Dr. Suh and Dr. Seshaiyer. At the end of each day, I will report on my daily work and receive a critique, constructive criticism and further instructions from my supervisors, including instructions for the following day. Regular meetings with my supervisors will emphasize my development and practice of research and my evaluation skills. I expect our interaction to be an ongoing daily process, not merely meetings at the start and end of each day.

For the study participants, pre and post assessments of teacher content knowledge in algebra will be administered before and after the summer institute and following the final follow up meeting. The Stages of Concern Questionnaire will be administered at the beginning and again at the end of the institute to assess teachers' use of mathematics tools and technology. I will be involved in administering these assessments as well as in summarizing and evaluating this data.

Qualitative and quantitative data will be collected from surveys, teaching artifacts, pre and post assessments, and, observational data, including my observations. Participants will complete the Attitudes and Practices to Teaching Math survey prior to the first

course session and after grades have been submitted at the conclusion of the course. I will also be involved in the data collection and evaluation of these assessments.

- During the week after the study, I will again meet with my supervisors daily to participate in execution of the evaluation plan. Being involved in the process of project evaluation is a critical learning goal for me. The evaluation plan consists of the following:
 - 1) The extent to which teachers'/school leaders' content knowledge improved in math as a result of IMPACT project activities;
 - 2) The extent to which the quality of instruction in math improved as a result of IMPACT project activities (e.g., teachers' use of research-based instructional strategies in the classroom, mathematics tools, and technology);
 - 3) The extent to which student achievement in math improved as a result of IMPACT project activities in targeted schools; and,
 - 4) The quality and implementation of IMPACT project activities and Collaborative Mentoring Model.

3. On-site supervisor role. Dr. Suh and Dr. Seshaiyer are my on-site supervisors. They will meet with me as described above. And, during the week of the study, they will provide instruction, including corrective instruction, as needed. I will communicate with them frequently to ensure my data collection and observations are being correctly executed.

4. Paper(s)/report(s)/other product(s) to be developed or produced. Following the third week of the internship, I will author a research paper which describes the study, the knowledge I have gained from the study and how the internship meshes with my previous course work. The paper will also describe my findings on the value of the internship to my educational goals and the

furtherance of my understanding of educational research. Dr. Suh will evaluate the paper, ensuring that all required elements of a research paper are present.

5. On-site working schedule.

- During the week preceding the study: 8 a.m. – 3 p.m., Monday-Friday (35 hours)
- During the week of the study: 8 a.m. – 5 p.m., Monday- Friday (45 hours)
- During the week after the study: 8 a.m. – 3 p.m., Monday- Friday (35 hours)

6. Evaluation procedures. Dr. Suh will provide me daily guidance and feedback. She will note any areas which may need attention or improvement. I will be evaluated on my development and application of usable observational skills and translation of these data into qualitative measures; the clarity of my oral and written communication; the educational research competencies which I learn; my ability to apply the concepts of EDRS 812 to the research; and, the depth of my professional growth.