Applied and Computational Mathematics MS Program Scholarly Goals

1. Knowledge and Scholarly Formation
   Demonstrate knowledge of core disciplines and specialization in a field of concentration
   a. Graduates demonstrate proficiency across core disciplines—linear algebra, abstract algebra, real analysis, probability [comprehensive examination]
   b. Graduates demonstrate specialized proficiency in a field of concentration [successful completion of courses in selected concentration subjects, thesis or project, final examination]

2. Research and Methodological Skills
   Conduct scholarly research in field
   a. Graduates will have conducted effective research demonstrating proficiency in application of appropriate research methods [completed thesis/project]
   b. Graduates will have demonstrated proficiency in use of appropriate methods and computational tools relevant to research task [coursework in relevant subjects]
   c. Graduates will have conducted research in ethical manner [responsible use of data, proper citation and attribution of used sources]

3. Communication Skills
   Communicate expertise across multiple constituencies
   a. Graduates will have effectively communicated results and methods to experts in the field [presentations in courses and seminars, presentation of thesis/project at final examination; committee and audience will complete a short anonymized questionnaire]
   b. Graduates will have effectively communicated methods and tools to broader audiences and non-experts [presentation of summer research report to first year students; DGS and audience will complete a short anonymized questionnaire]
   c. Graduates will have demonstrated writing and editing skills sufficient for creation and acceptance of professional papers and reports in the field [thesis/project, summer research report, journal publications; committee will complete a short anonymized questionnaire]
4. Management and planning skills

Initiative, persistence and project planning and management

a. Graduates will have demonstrated management capacity and skills in project planning and performing [thesis/project proposal, summer research report, gathering sources, thesis/project structure design; advisor will complete a short anonymized questionnaire]

b. Graduates will have demonstrated Individual initiative sufficient for successful completion of research project [identifying an advisor, finding a topic for research project, gathering relevant resources; advisor will complete a short anonymized questionnaire]

c. Graduates will have demonstrated adaptability and persistence sufficient for successful completion of research for publication [advisor’s feedback, re-writing and editing of thesis/project and final exam presentation; advisor will complete a short anonymized questionnaire]

5. Cultural Competence and Global Context Formation of the Field

Global formation of the field

a. Graduates will utilize research generated outside of the US for completion of coursework and final project