Computer Science Department Strategic Plan - Approved 3/15/2017

1. Promote Student-Centered and Hands-on Learning Experiences to Enable Student Success

Goal 1. Enhance undergraduate programs to produce quality graduates in a timely manner.

Action Items:

- Perform periodic critical review of all courses and degree programs.
- Offer courses in a predictable way to allow students to complete their degrees in a timely manner.
- Decrease student to faculty ratios to enhance student and faculty interaction.
- Increase the number of courses offered during the summer.
- Decompose large class size into multiple lab/recitation sections that will enable students to meet in smaller groups for hands-on learning.

Metrics:

- The number of course and curriculum assessments performed at department assessment retreats. The number of courses and programs developed.
- Create and follow permanent course offering schedules. How many courses are offered according to permanent schedules?
- Student to faculty ratios in the classroom and laboratories.
- The number of courses offered during the summer.
- The number of students on academic probation at the end of their first semester.

Goal 2. Enhance graduate studies in the department to ensure student success.

Action Items:

- Increase the number of graduate students (international and domestic) who are supported by research assistantships.
- Increase recognition of graduate students through awards (e.g., fellowships, scholarships, best research awards and best thesis award).
- Recruit students with CS background to Data Science Ph.D. program.
- Foster a greater intellectual community that includes graduate students.
- Create opportunities for students to find sources of funding through fellowships and scholarships.

Metrics:

- The number of graduate students engaged in research and thesis.
- The number of publications by graduate students.
- The number of awards to CS graduate students.
- The number of Data Science Ph.D. students with CS background.
- The number of research seminars with active faculty participation.
- The number of graduate students receiving fellowships and scholarships

Goal 3. Enhance the overall teaching effectiveness of faculty to promote student success.

Action Items:

- Acquire faculty lines to increase the number of courses offered and to decrease class size.
- Create a teaching forum to exchange ideas and strategies of teaching and learning.
- Provide training and development for faculty (including part-time) and teaching assistants (lab assistants and graders).
- Establish departmental mentoring programs for new tenured track faculty and request additional faculty lines in areas in need of improved instructional focus.
- Increase support for faculty for professional development, in particular in deploying new proven successful pedagogical models and technologies to enhance student learning.
- Encourage applications of faculty awards for faculty who exemplify excellence in research and teaching.

Metrics:

- The number of full-time faculty comparable to peer and aspirant universities.
- The number of course offerings and students in each course.
- The activities of teaching forum.
- The number of training courses for new faculty and teaching assistants.
- The number of mentor-mentee pairs.
- The number of online courses offered.
- The number of course innovations that involve the use of computer technology.
- The number of faculty awards.

Goal 4. Improve and innovate curriculum.

Action Items:

- Update each course offered in response to CS IAB comments.
- Continue enhancing each program/course offered.
- Create new courses according to IEEE/ACM CS curriculum recommendation.
- Start new programs to reflect demands from job markets.

Metrics:

- The number of courses reviewed in department assessment retreats.
- The number of programs/courses revised.
- The number of new courses created.
- The number of new programs created.

Goal 5. Improve student advising and mentoring by faculty.

Action Items:

- Support the CCSE advising center to ensure that every student, including freshman prospective CS/ACS majors, receives individualized and well-informed attention.
- Assign each graduate student a faculty advisor.
- Create learning community program and connect freshman via social networks.
- Enhance tutoring services available for students.

Metrics:

- The number of meetings between departmental/program faculty and number of visits to the CCSE advising center.
- Student to advisor ratio.
- The number of faculty who mentor undergraduate students.
- The number of learning communities and posts in social networks.
- The number and quality of tutoring services available.

Goal 6. Enhance student organizations for students to polish communication skills.

Action Items:

- Encourage forming student organizations/clubs/Facebook/Line/forums within CS.
- Increase faculty involvement in the student organizations.
- Facilitate communication between students and the computing communities in Atlanta and its surrounding areas.

Metrics:

- The number of student organizations/clubs/Facebook/Line/forums.
- The number of faculty involved in student group meetings.
- The number of opportunities available for students in the computing communities

2. Serving Society through Creativity, Expanded Research, and Innovation

Goal 1. Attract top quality research-oriented students.

Action Items:

- Provide an enriching research environment for students at all levels.
- Increase the number and amount of scholarships available for students conducting research under faculty supervision.
- Establish outreach programs to identify and encourage research-oriented students, including minority and female students.
- Increase the number of programs or certificates.

Metrics:

- The number of publications with students as co-authors.
- The number of high school interns.

- The number of master/Ph.D. degrees awarded.
- The number of graduate students that are minority and/or female.
- The number of graduate students with one full year of support
- The number of newly established programs or certificates.

Goal 2. Recruit and retain highly visible and productive faculty.

Action Items:
- Recruit and retain high potential junior faculty and senior faculty with leadership abilities.
- Provide highly competitive start-up packages for new faculty
- Proactively address the salary compression issue to retain successful faculty

Metrics:
- The aggregate rate of publications in high quality journals and conferences.
- The number of faculty serving on grant review panels and on editorial boards of journals.
- The number and effectiveness of start-up packages offered to new faculty.
- The number of research intensive faculty retained.

Goal 3. Increase the level of research support to faculty and students.

Action Items:
- Adjust workloads to encourage quality research.
- Encourage grant awarded faculty to assist in proposal preparation and administration of sponsored research projects.
- Increase faculty interests in external grant programs through "brown bag lunch" or "off-campus working lunch."
- Increase funding to support research
- Mentor, train and support junior faculty in writing grant proposals and managing funded projects.
- Increase infrastructure support for research.
- Increase interdisciplinary research.

Metrics:
- The number of course loads per year.
- The number of external grant proposals.
- The number of staff attending "brown bag lunch" or "off-campus working lunch."
- The number and amount of research grants and contracts submitted and funded.
- The number of support staff, amount of research space, and number of research facilities
- The number of joint grant submissions between departments.

Goal 4. Increase research collaborations within and beyond campus.

Action Items:
- Reach out well-known researchers to establish collaboration.
- Hold seminars or colloquia with high-profile researchers.

- Enhance laboratory infrastructure in targeted areas so that faculty are better positioned to collaborate with other faculty at research universities.
- Encourage collaborations in various disciplines.
- Hosting visiting scholars strongly committed on research.

Metrics:
- The number of collaborative publications, projects, and proposals.
- The amount of external funding supporting the collaborations.
- The number of multi-university and multi-institutional grants.
- The number of visiting scholars.

Goal 5. Increase development, protection and commercialization of intellectual property generated by faculty and students.

Action Items:
- Encourage faculty to seek commercialization of their work via IgniteHQ.
- Give weight to relevant patents when evaluating faculty performance.
- Promote novel exploratory research projects.
- Encourage NSF SBIR/STTR applications.

Metrics:
- The number of patents generated.
- The number of start-up companies based on the CS intellectual property.
- The number of SBIR and STTR applications awarded.

3. Promoting Accessibility and Affordability

Goal 1. Provide high quality graduate programs to actively recruit a wide variety of students.

Action Items:
- Establish a rigorous recruitment program at the graduate level with proactive faculty involvement.
- Provide a strong staff support for recruitment activities, including outreach to HBCU or minority institutions, community colleges, and universities.
- Increase diversity of student body.

Metrics:
- Quality of student admissions.
- GRE Scores.
- GPA.
- The number of students with diverse backgrounds.

Goal 2. Provide high quality education with affordable tuition.

Action Items:

- Review and improve curriculum and programs continuously.
- Examine lab or other fees associated with courses and eliminate them whenever appropriate.
- Develop programs with a lower tuition option.

Metrics:

- Tuition.
- The number of course with extra fees.
- The number of programs with low tuition.

Goal 3. Encourage collaboration with K-12 schools, community colleges, and the local community that promotes an environment of research, teaching and service.

Action Items:

- Continue and enhance outreach efforts to schools.
- Provide interns for high school magnet program students.
- Involve STEM programs such as FTC/FRC/FLL for interaction with K-12 students and teachers.

Metrics:

- The number of institutions and organizations with ties to the CS.
- The number of high school interns.
- Feedback from partners or program coordinators.

Goal 4. Promote programs that assist all students, especially women and underrepresented minority students, in receiving a quality education filled with opportunities for learning and research.

Action Items:

- Increase donated funds/endowments for scholarships.
- Recruit applicants for scholarships.
- Continue to support federal program grants that fund education and research for women and underrepresented minorities in science.

Metrics:

- The amount of donated funds/endowments.
- The number of applicants for scholarships.
- The number of minority program grants funded.

4. Serving the Public through Community Engagement

Goal 1. Promote interactions with K-12 schools and community colleges to provide a pipeline for future computer science students.

Action Items:

- Increase interactions with local schools, including both K-12 and community colleges.
- Increase the number of faculty participating in outreach programs.
- Increase funding through grants to support outreach programs.
- Increase the number as well as competence of K-12 science and mathematics teachers participating in summer teacher certificate programs.
- Increase hosting international/national conferences or workshops.

Metrics:

- The number of correspondences/meetings a year of K-12 science teachers and community college science teachers.
- The number of faculty participating in outreach programs.
- The funding of outreach grants and proposals.
- The number of future science and mathematics teachers attending summer teacher certificate programs.
- The number of conferences and workshops held at KSU.

Goal 2. Provide students with opportunities to explore careers in industry within the computing community.

Action Items:

- Establish bi-annual conference of computing intensive companies via IAB
- Enhance internship programs for undergraduate and Master's students with local computing technology firms.

Metrics:

- The number of attendees and companies represented at the bi-annual IAB meetings.
- The number of students participating in internships.

Goal 3. Increase visibility of the Computer Science Department in the local computing community and general public by demonstrating how the department responds to community needs.

Action Items:

- Advertise CS in digital media.
- Highlight CS projects in newspapers, radio stations, TV, or social networks.
- Work with local newspapers and other media to generate more news items.
- Establish a local radio show highlighting CS's accomplishments.
- Highlight community service provided by the CS faculty.

- Increase visibility of CS at the Robotics or programming competitions.

Metrics:
- The number of news items about CS's accomplishments.
- The amount of public awareness of CS as measured by local polls.
- The number of applications from Robotics or programming participants.

Goal 4. Promote international collaborations for faculty research and recruit research-oriented students in graduate programs.

Action Items:
- Increase partnerships with foreign universities
- Establish faculty and student exchange programs
- Promote international collaborations
- Increase scholarships for research-oriented students in graduate programs.
- Visit collaborative universities regularly to actively recruit quality students.

Metrics:
- The number of partnerships
- The number of students and faculty participating in exchange programs
- The number of international collaborations
- The number of graduate students writing theses
- The number of graduate students recruited.

Goal 6. Increase faculty involvement in national and international professional organizations

Action Items:
- Encourage faculty to join IEEE, ACM, or other professional organizations
- Increase participation in conference/workshop organization/steering committees
- Increase paper reviews for journal, conference, or workshop publications
- Increase leadership in conference/workshop via conference chairs or program chairs.
- Promote faculty in giving invited talks, keynotes, and showcases

Metrics:
- The number of faculty memberships
- The number of students and faculty participating in conference/workshop organization/steering committees
- The number of paper reviews
- The number of conference/workshop chairs.
- The number of invited talks, keynotes, and showcases

5. Expanding Resources and Infrastructure

Goal 1. Improve efficient interactions between faculty and administrators within the department.

Action Items:

- Automate or semi-automate all administrative processes where possible
- Provide efficient streamlining of administrative tasks to faculty through smart process design
- Increase open communication between faculty and the administrators
- Facilitate the ability of faculty to pursue external funding
- Maximize the effectiveness of faculty involvement in committee meetings

Metrics:

- Happiness of faculty with administrative processes as measured by surveys
- The number of person-hours spent on administrative tasks
- The number of research grants submitted by faculty
- The number of person-hours spent in committee meetings

Goal 2. Enhance interactions between students and administrators within each program in the department.

Action Items:

- Prompt reply all communication technologies with regard to student questions
- Enhance communication on social networking such as LinkedIn or Facebook
- Increase open communication between students and the program directors

Metrics:

- Average time to reply student's inquiry email
- The number of posts on social networking applications
- The number of students visits to program directors' offices

Goal 3. Increase information technology support to facilitate faculty research and teaching.

Action Items:

- Provide access to specialized hardware and software.
- Provide software support for all operating systems
- Provide D2L and other teaching tools training workshops

Metrics:

- The number of machines supported by faculty versus system administrators
- The number of external references and hits on the Departmental website

Goal 4. Increase non-traditional classrooms and reorganize classroom and teaching laboratory space with the latest hardware/software.

Action Items:

- Work with classroom scheduling personnel to incorporate more space into classroom availability
- Restructure laboratories in order to maximize current space
- Redistribute laboratory space to accommodate more laboratory courses

Metrics:

- Increased space utilization and greater class offering with current resources
- The number of laboratory courses offered during a semester
- The number of students taking laboratory courses within 4 years