SERVE • LEARN • SUSTAIN

QUALITY ENHANCEMENT PLAN

MARCH 9-12, 2015

Georgia Institute of Technology

Georgia Institute of Technology
Office of the President

December 4, 2014

Dr. Belle S. Wheelan
President
Commission on Colleges
Southern Association of Colleges and Schools
1866 Southern Lane
Decatur, GA 30033

Dear President Wheelan:

On behalf of Georgia Tech, we are pleased to submit our Quality Enhancement Plan, "Serve•Learn•Sustain," as a key component of our 2015 SACSCOC reaffirmation.

The final proposal is the result of a rigorous and representative process, fundamentally aligned with the aspirations of our current strategic vision. The dual themes of sustainability and community engagement in this proposal represent our desire to matriculate undergraduates who, motivated by large societal challenges and pressing social needs, are prepared to apply what they have learned, working collaboratively to create solutions that value both the environmental and social conditions of diverse communities. In so doing, they bring renewed meaning to the Institute motto of Progress and Service.

The Institute is proud of and committed to this five-year Quality Enhancement Plan as outlined in the proposal. We believe the learning outcomes build upon our existing disciplinary excellence, providing students with the kind of experiential education opportunities that will differentiate Georgia Tech graduates from their peers.

We look forward to the visit of the Reaffirmation Committee on March 9-12, 2015, and benefiting from their thoughts and advice.

Sincerely,

G. P. "Bud" Peterson
President

Georgia Institute of Technology
Atlanta, Georgia 30332-0325 U.S.A.
PHONE 404-894-5051
FAX 404-894-1277

TABLE OF CONTENTS

EXECUTIVE SUMMARY

The Serve•Learn•Sustain Quality Enhancement Plan (QEP) aims to equip Georgia Institute of Technology (Georgia Tech) students with the knowledge and capabilities to effectively address sustainability challenges and inter-related community-level societal needs in their professions and their civic lives. To achieve these outcomes, the Serve•Learn•Sustain Plan focuses on the theme "creating sustainable communities" and emphasizes community engagement and service learning as its central pedagogical approach.

The Serve•Learn•Sustain Plan addresses educational *needs* clearly voiced by our graduates, enhances long-held Georgia Tech *values* and directly responds to Georgia Tech's *strategic plan.*

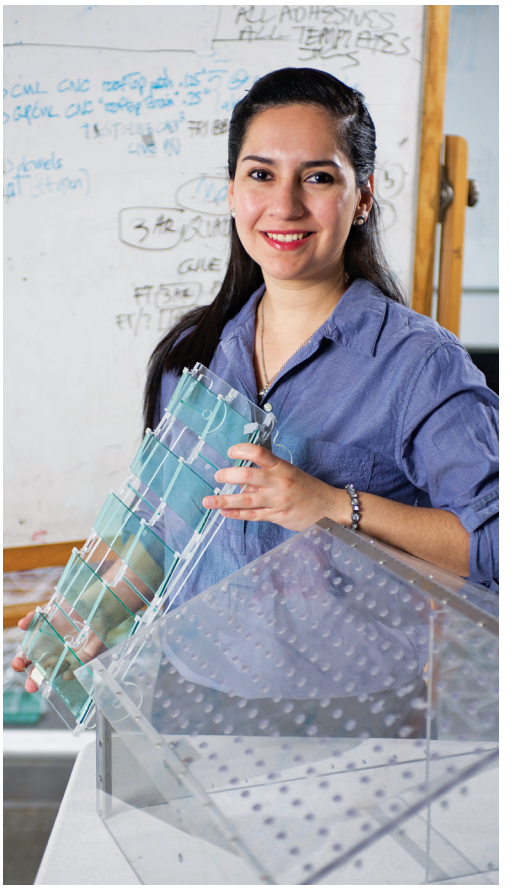
Needs. Georgia Tech is well-known for its disciplinary excellence. Not surprisingly, post-graduation surveys of our students reveal that they are very satisfied with how well Georgia Tech has prepared them for the practice of their discipline. Yet the same students rate their Georgia Tech education significantly lower with regard to understanding the environmental, social, and cultural impact of their profession and working effectively in diverse teams. The Serve•Learn•Sustain Plan aims to close this gap.

Values. As reflected in its motto, "Progress and Service," Georgia Tech has long valued positive engagement with communities near and far. Along with this institutional commitment, we are witnessing a sea change in student and faculty interest in making a real difference in the world, as well as societal expectations that investments in higher education pay back to society in tangible ways. The Serve•Learn•Sustain Plan seeks to institutionalize this culture change, making it a core value upon which Georgia Tech faculty and students systematically act.

Strategic Plan. Georgia Tech's vision and mission statements call for Georgia Tech to be a leader in "influencing major technological, social, and policy decisions that address critical global challenges" and in "improving the human condition in Georgia, the United States, and around the globe." The sustainable communities focus is responsive to global challenges in critical areas of energy, environment, water resources, food security, and in global health. These global challenges will shape not only the human condition, but also our graduates' professional and civic lives over the next century. The Serve•Learn•Sustain Plan aims to create the opportunity for all Georgia Tech graduates to exemplify Georgia Tech's vision and mission throughout their lives.

Georgia Tech's strategic plan calls for an educated workforce developed through classroom instruction and experiential learning. The Serve•Learn•Sustain Plan operationalizes this approach by introducing select courses tailored to achieve the plan's learning outcomes, adding QEP-themed content and methods to existing courses, developing a unified set of service learning and community engagement opportunities in the QEP focus area, and increasing the availability of scope-relevant co-curricular and extra-curricular experiences.

THE SERVE•LEARN•SUSTAIN PLAN FOCUSES ON THE THEME "CREATING SUSTAINABLE COMMUNITIES" AND EMPHASIZES COMMUNITY ENGAGEMENT AND SERVICE LEARNING AS ITS CENTRAL PEDAGOGICAL APPROACH.



Solar Panel System in the Digital Fabrication Lab

LIST OF ACRONYMS

AAC&U	American Association of Colleges and Universities
AAU	Association of American Universities
ABET	Accreditation Board for Engineering and Technology
BEVI	Beliefs, Events and Values Inventory
CAS	Center for Academic Success
C2D2	Center for Career Discovery and Development
CETL	Center for the Enhancement of Teaching and Learning
CFAT	Carnegie Foundation for the Advancement of Teaching
CIOS	Course Instructor Opinion Survey
DSA	Division of Student Affairs
EPICS	Engineering Projects in Community Service
FASET	Familiarization and Adaptation to the Surroundings and Environs of Tech
GTAB	Georgia Tech Advisory Board
IC	Institute Communications
IT	Information Technology
LLC	Living Learning Community
NSSE	National Survey of Student Engagement
OA	Office of Assessment
QEP	Quality Enhancement Plan
SACSCOC	Southern Association for Colleges and Schools Commission on Colleges
SC	Sustainable Communities
SCEIO	Sustainable Communities Educational Initiatives Office
SGA	Student Government Association
SLO	Student Learning Outcome
VALUE	Valid Assessment of Learning in Undergraduate Education
VIP	Vertically Integrated Projects
VPUE	Vice Provost for Undergraduate Education

I. PROCESS USED TO DEVELOP THE QEP

Founded in 1885 and opened in 1888, the Georgia Institute of Technology, also known as Georgia Tech, is one of the nation's leading research universities, providing a focused, technologically based education to approximately 14,600 undergraduate and 7,000 graduate students. Our mission states, "Technological change is fundamental to the advancement of the human condition. The Georgia Tech community – students, staff, faculty, and alumni – will realize our motto of "Progress and Service" through effectiveness and innovation in teaching and learning, our research advances, and entrepreneurship in all sectors of society. We will be leaders in improving the human condition in Georgia, the United States, and around the globe." Georgia Tech has many nationally and internationally recognized degree programs, all top-ranked by peers and publications alike. Georgia Tech serves the state of Georgia, the southeast region, the nation, and the world by offering degrees at the bachelor's, master's, professional, and doctoral levels through the Colleges of Architecture, Engineering, Sciences, Computing, the Ernest Scheller Jr. College of Business, and the Ivan Allen College of Liberal Arts. As a leading technological research university, Georgia Tech has more than 200 research centers and laboratories that consistently contribute vital research and innovation to America's government, industry, and business.

In seeking a topic for this QEP, Georgia Tech leadership deliberately sought a process that would directly support the institutional mission, improve student learning, and foster cross-campus collaboration to ensure impact across all majors.

Identification of the QEP Steering Committee

During the summer 2013, the Georgia Tech SACSCOC liaison formed a QEP Steering Committee composed of several campus leaders as well as finance and communication experts[1]. This committee was charged with determining an inclusive and representative process for defining a QEP topic that was tied to the institutional mission and to student learning needs.

Solicitation of QEP Concept Papers

In October 2013, the QEP Steering Committee issued an institution-wide request for "QEP concept paper proposals" describing educational initiatives. To ensure that the proposed concepts would be important and needed improvements at Georgia Tech, the call required the proposals to elaborate on or synthesize ideas, themes, and/or projects emerging from Georgia Tech's 25-year strategic plan, which was completed in 2012 following a three-year development process. In addition, each concept paper required representation from three or more of Georgia Tech's six colleges.

GEORGIA TECH'S VISION AND MISSION STATEMENTS CALL FOR GEORGIA TECH TO BE A LEADER IN "INFLUENCING MAJOR TECHNOLOGICAL, SOCIAL, AND POLICY DECISIONS THAT ADDRESS CRITICAL GLOBAL CHALLENGES" AND IN "IMPROVING THE HUMAN CONDITION IN GEORGIA, THE UNITED STATES, AND AROUND THE GLOBE."

Reading in the Community

[1] Catherine Murray-Rust (dean of Libraries, SACSCOC liaison, vice provost for Learning Excellence), Donna Llewellyn (associate vice provost for Learning Excellence), Colin Potts (vice provost for Undergraduate Education), Andrew Smith (Special Projects, Office of the Provost, past senior vice provost for Academic Affairs), Jonathan Gordon (director, Office of Assessment), Vanessa Payne (director of Business Operations, Georgia Tech Libraries) and Victor Rogers (communications officer, Institute Communications).

The cross-college requirement for concept papers encouraged the proposal of initiatives that would reach across traditional disciplinary boundaries and influence the very fabric of the student educational experience at Georgia Tech. The structural limit of five pages reflected the intention for this call to be the starting point in an evolutionary and inclusive process; the committee was not expecting, nor did it desire, fully developed proposals, as this would conflict with the committee's intention to refine and synthesize proposals based on feedback from Georgia Tech stakeholders.

Concept papers were due in early December 2013, allowing the committee time to evaluate the proposals before choosing a subset to be presented before a QEP Selection Committee. The full text of the Call for Concept Papers is included in Appendix I.

Childhood Cataract Electronic Patient Record

The Steering Committee received five concept papers, each fulfilling all of the criteria outlined in the call for proposals. Overall, more than 100 faculty members and staff from academic support units and all six colleges were represented in these proposals. The core ideas included combinations of entrepreneurship, design, Vertically Integrated Projects, first-year student issues, sustainability, and service learning. The Steering Committee then created a QEP Selection Committee (Appendix II) to identify the final QEP topic. Invitations to join the selection committee were issued to individuals across the campus, with the following guiding principles: Individuals (1) could not be on the list of collaborators of any of the concept papers (to eliminate conflict of interest), (2) must be an award-winning teacher or leader of an academic initiative (program, large lab, large grant, etc.), and (3) must represent all aspects of campus. Fifteen individuals served on the QEP Selection Committee.

Evaluation of QEP Concept Papers

The Selection Committee held a meeting during which representatives from each concept paper made a presentation, focusing on the goals of the project, expected outcomes, relevance to Georgia Tech, assessment, and cost. The committee then used a rubric (see Appendix III) to judge each proposal for its viability and fit with Georgia Tech's needs and SACSCOC QEP requirements.

During the evaluations process, it became clear that two of the concept papers – Jackets for a Sustainable Future and Service Learning and Community Engagement – scored high on the rubric and directly supported Georgia Tech's strategic plan. Importantly, both addressed the same recognized institutional need – the drive to have graduates who can address real-world problems that are grounded in critical community and societal challenges, and fulfill Georgia Tech's mission of improving the human condition in Georgia, the United States, and the world. These two teams were invited to work together to produce a joint concept paper. The resulting holistic concept was presented to the Selection Committee. With full engagement from committee members, the combined team was charged with preparing an executive summary for review by the Executive Leadership Team[2] and the campus community. This executive summary, excerpts of which were published in the faculty/staff newspaper, *The Whistle,* on March 31, 2014[3], became the basis for the Serve•Learn•Sustain QEP.

Development of the Full QEP Proposal

L. Beril Toktay, professor in the Scheller College of Business, and Ellen Zegura, professor in the School of Computer Science, became the executive co-directors for developing what would become the Serve•Learn•Sustain Plan, working closely with the QEP Steering Committee. Both of their teams' original concept papers addressed the need to

[2] G. P. "Bud" Peterson (president), Rafael L. Bras (executive vice president for Academic Affairs and provost), Stephen E. Cross (executive vice president for Research), and Steven G. Swant (executive vice president for Administration and Finance).

[3] http://www.news.gatech.edu/2014/03/31/qep-focus-sustainability-community

improve student understanding of the environmental, social, and cultural impact of their chosen fields of expertise, but there was work to be done in unifying the concepts into a single coordinated QEP effort. Furthermore, the development process needed to engage many campus constituencies and other stakeholders.

THE SUSTAINABLE COMMUNITIES FOCUS IS RESPONSIVE TO GLOBAL CHALLENGES IN CRITICAL AREAS OF ENERGY, ENVIRONMENT, WATER RESOURCES, FOOD SECURITY, AND GLOBAL HEALTH. THESE GLOBAL CHALLENGES WILL SHAPE NOT ONLY THE HUMAN CONDITION, BUT ALSO OUR GRADUATES' PROFESSIONAL AND CIVIC CONTEXT OVER THE NEXT CENTURY.

A significant milestone in the QEP development process was a presentation and work session with the Georgia Tech Advisory Board (GTAB) during its meeting hosted by the president on April 7, 2014. GTAB members were intrigued by the self-reported gap between students' disciplinary knowledge and their understanding of the environmental, social, and cultural impact of their professions. Board members overwhelmingly agreed that enhancing these skills would have long-term career value. They also saw high value in experiential service learning opportunities and community engagement.

The QEP executive co-directors next met with deans and/or associate deans in each of Georgia Tech's six colleges to solicit input on potential QEP-related areas of synergy, opportunities, and challenges within their respective colleges. They met with students in a QEP Student Think Tank, many of whom were from the Student Government Association (SGA). These meetings yielded a number of actionable suggestions that were incorporated into either the planning or high-level structure of the QEP proposal.

Many other important constituencies were consulted in subsequent months regarding content and implementation, notably the leadership of the GT Innovation and Design Collaborative, the Energy Systems Minor, the Institute for Sustainable Systems, the Strategic Energy Institute, Vertically Integrated Projects, Facilities and Campus Operations, Grand Challenges Program, Energy Club, Office of the Vice Provost for Graduate Studies, Graduate Research Ethics Program, Westside Communities Alliance, Distance Learning and Continuing Education, the Honors Program, the Office of Leadership and Civic Engagement, the Office of Government and Community Relations, and the Center for Academic Enrichment. The QEP co-directors also participated in the May 2014 vice provosts' meeting and sought periodic input from the QEP Steering Committee. Lori Critz, head of the Faculty Engagement Department in the Georgia Tech Library, led a team in identifying and synthesizing the most relevant literature on sustainability, community engagement, and service learning pedagogy and programs.

The QEP executive co-directors used the collective input from the above process to prepare an initial draft of the QEP document (September 12, 2014, v1), which was presented to academic, administrative, and student advisory committees (Appendix IV) on September 15, 2014. By design, the draft was mature in sections dealing with the need, rationale, and high-level aims of the QEP; the learning outcomes structure; and the literature review. Subsequent sections presented the overall structure and elements while leaving much opportunity for change and refinement. The advisory committees were charged with providing constructive and specific feedback on the whole document, but especially on the sections related to activities, goals, resources, organizational structure, and assessment. They were invited to do so not only as individual representatives of their schools, colleges, majors, or departments, but also based on input they would actively seek from relevant individuals and groups.

Input was solicited from the advisory committees via a second set of meetings on September 30, 2014, and via a shared online project site that was available until mid-October 2014. Further input was sought at the October 2014 meeting of deans and vice provosts. The draft was additionally distributed to previously involved or consulted constituencies for feedback.

The final version reflects input from students, staff, faculty, and academic leadership, which was received via formal and informal means at in-person, one-on-one and group meetings, and at the November 2014 vice provosts' retreat. The major elements of the final version were presented at the November 18, 2014, meeting of the Academic Faculty Senate and received strong support. In sum, the process ensured input from many relevant constituencies in developing the plan and created the foundation for the direct involvement of these constituencies in its implementation.

II. IDENTIFICATION OF THE TOPIC

The Serve•Learn•Sustain Plan aims to equip Georgia Tech students with the knowledge and capabilities to effectively address sustainability challenges and inter-related community-level societal needs in their professions and their civic lives. To achieve these outcomes, the plan focuses on the theme "creating sustainable communities" and emphasizes community engagement and service learning as its central pedagogical approach. The term "sustainable communities" refers to "places where people want to live and work, now and in the future. They meet the diverse needs of existing and future residents, are sensitive to their environment, and contribute to a high quality of life."[4] The places range from neighborhoods to watersheds to cities to multi-state regions[5], grounding our students' academic experience in a context to which they can relate.

A Theme That Exemplifies Georgia Tech's Mission

The selected theme addresses educational *needs* clearly voiced by our graduates, enhances long-held Georgia Tech *values,* and directly responds to Georgia Tech's *strategic plan.*

Needs. Georgia Tech is well-known for its disciplinary excellence. Georgia Tech graduates overwhelmingly agree, as evidenced by their responses in the Baccalaureate Alumni Survey. The survey asks students a series of questions regarding how well they believe Georgia Tech prepared them along a number of dimensions. The possible responses are 1 (not prepared), 2 (somewhat prepared), 3 (prepared), 4 (well prepared), and 5 (very well prepared).

The table presented here identifies a disparity in student assessment of preparedness. More than 75 percent of Georgia Tech graduates rate their disciplinary skill preparation high (4 or 5). Yet significantly fewer give their "interskill" preparation a high rating with regard to effective work in a team or understanding the environmental, social, and cultural impact of their professional practice. This disparity provides the motivation for (though it does not uniquely prescribe) the selected QEP topic.

Values. As reflected in its motto, "Progress and Service," Georgia Tech has long valued positive engagement with communities, a value shared by an ever-increasing number of students. The proportion of first-year Georgia Tech students who indicated they participated in community-based projects in high school doubled from 2003 to 2011. Furthermore, over the past 25 years, Georgia Tech freshmen have reported an increase in the amount of time they spent volunteering

Statement: To what extent did Georgia Tech prepare you to	% saying well or very well prepared
(disciplinary skills)	
Identify, formulate, and solve problems in your discipline	87.6%
Use techniques, skills, and tools needed for the practice of your discipline	76.8%
Seek out new information needed for the practice of your discipline	75.5%
(interskills)	
Function on multi-disciplinary or cross-functional teams	68.6%
Effectively resolve interpersonal conflict within a group or team	51.7%
Understand the social and cultural impact of your professional practice	44.3%
Understand the environmental impact of your professional practice	40.4%

Source: 2012 Baccalaureate Alumni Survey

[4] The National Archives: webarchive.nationalarchives.gov.uk/20120919132719/http://www.communities.gov.uk/index.asp?id=1139866
[5] Taking Sustainable Cities Seriously: A Comparative Analysis of Twenty-Three U.S. Cities http://seg.fsu.edu/Library/portney-taking-sustainability-seriously-in-cities.pdf

in their last year of high school (Cooperative Institutional Research Program (CIRP) Freshman Survey Report and National Survey of Student Engagement 2011 Institute Report).

However, according to data from the 2014 National Survey of Student Engagement (NSSE), less than 35 percent of Georgia Tech first-year students and approximately 40 percent of our seniors reported that they "very often or often" connected their learning to societal problems or issues, while 50 percent of first-year students and 58 percent of seniors at Association of American Universities (AAU) institutions reported the same. In the area of learning pedagogy that supports connection between classroom learning and societal challenges, 32 percent of Georgia Tech first-year students and 37 percent of seniors reported taking "at least some" courses with service-learning components, compared to 43 percent and 46 percent of their AAU peers, respectively.

Strategic Plan. Georgia Tech's vision and mission statements call for Georgia Tech to be a leader in "influencing major technological, social, and policy decisions that address critical global challenges" and in "improving the human condition in Georgia, the United States, and around the globe."[6] The sustainable communities focus area is responsive to global challenges in critical areas of energy, environment, water resources, food security, and global health.[7] These global challenges will shape not only the human condition, but also our graduates' professional and civic context over the next century. This QEP aims to create the opportunity for all Georgia Tech graduates to exemplify Georgia Tech's vision and mission throughout their lives.

We thus find an opportunity at the intersection of Georgia Tech's history and aspirations, student skills assessment, and incoming student interest. *That opportunity is to extend disciplinary excellence to equip students with the knowledge and capabilities to effectively address complex, real-world challenges.* We choose *sustainability,* defined below, as the domain for those challenges. We additionally focus on the interaction of sustainability challenges with community-level considerations, using *community engagement and service learning pedagogy* to create the link. This QEP topic is directly responsive to the skills assessment disparity identified above because it focuses on discipline-relevant projects that require students to integrate environmental, social, and cultural considerations with their disciplinary expertise and to work in diverse teams to address complex issues.

Construction for the Solar Decathlon

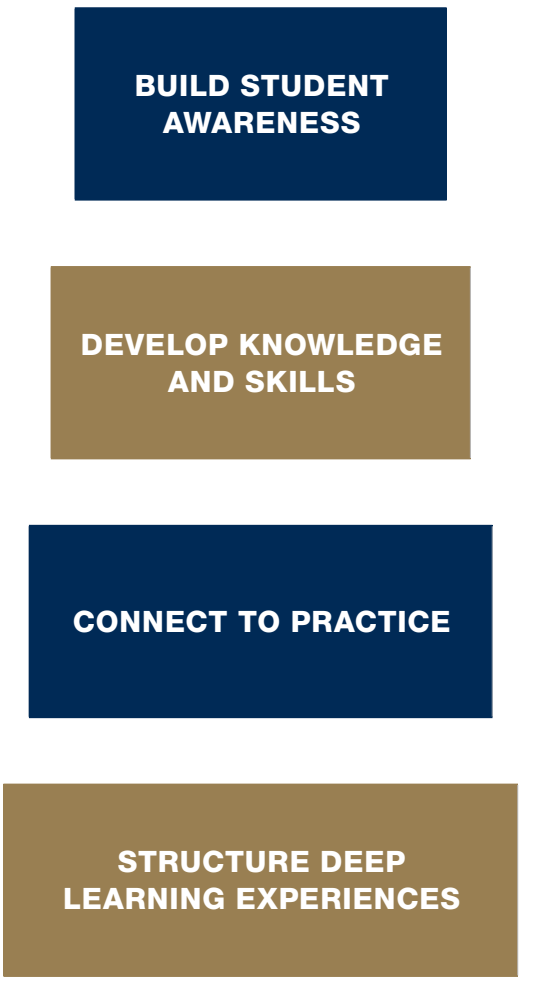
We use the following definition of sustainability: "transforming our ways of living to maximize the chances that environmental and social conditions will indefinitely support human security, wellbeing, and health" (McMichael, Butler & Folke, 2003). This definition was chosen because it is explicit about not only environmental considerations but also community-level social considerations such as human security, well-being, and health, considerations that provide a practical and meaningful context for our students. It also captures the essence of the "classic" Brundtland definition of "meeting the needs of the present without compromising the ability of future generations to meet their own needs." (World Commission on Environment and Development, 1987, p. 43)

Accomplishing the goals of the QEP will provide different levels of exposure to sustainability and community engagement fundamentals, as well as a rich set of opportunities for students to engage with communities in addressing the needs of those communities. Achieving this at an institution the size of Georgia Tech, with its strong technical foundations, could have a profound impact on the communities with which it is engaged. This would enable Georgia Tech to translate its already strong research programs in sustainability into impactful community sustainability. Direct community engagement will further serve to infuse new research topics into those research programs. This synergy will allow students to demonstrate Georgia Tech's motto of "Progress and Service" in tangible ways that are unprecedented in Georgia Tech's history.

[6] Georgia Institute of Technology Strategic Plan: Designing the Future. A Strategic Vision and Plan. http://www.strategicvision.gatech.edu/sites/strategicvision.gatech.edu/files/Georgia_Tech_Strategic_Plan.pdf, page 8.
[7] http://sites.nationalacademies.org/International/international_052200

III. DESIRED STUDENT LEARNING OUTCOMES

This QEP aims to equip our students with the knowledge and capabilities to effectively address sustainability challenges and inter-related community-level societal needs in their professions and civic lives. We develop student learning outcomes and a strategy to achieve them via a four-tiered approach for learning and participation: (1) exposure to the issues and awareness of the Serve•Learn•Sustain Plan, (2) the development of foundational knowledge and skills, (3) the connection of knowledge and skills to professional practice, and (4) the creation of deep learning experiences. The QEP includes two additional goals that address sustained attitude change by students and the infrastructure to successfully implement the plan. The four-tiered approach is informed by the literature on progressive models for integrating real-world learning into the undergraduate experience (e.g., Brundiers, Wiek & Redman (2010)).



QEP GOAL 1: Build Student Awareness of Issues and Opportunities

Maximizing the impact of the Serve•Learn•Sustain Plan on the campus requires exposing students early and often to the issues, and to the opportunities available via the plan. Ideally, we will begin to build students' awareness of these opportunities before they arrive on campus. We do not associate a specific student learning outcome with this goal, but we will propose activities intended to meet this goal and assess participation against target outcomes.

QEP GOAL 2: Develop Knowledge and Skills

To anchor the development of learning outcomes for knowledge and skills, consider a sustainability challenge with a strong element of community participation and impact: water usage. Individuals, communities, governments, and companies all play a role in the use and quality of water supplies. Households make decisions about water usage on a daily basis. Individuals influence the production of water-intensive food and other products through their consumer behavior, often unknowingly. Individuals and companies contribute to water pollution. Local and regional governments establish water policies, such as banning outdoor watering during dry seasons or imposing fines on individuals and companies for polluting waterways. State governments make decisions about water sharing with neighboring states.

This example clearly demonstrates that the decisions of multiple constituencies and entities determine whether a given system or community is on a sustainable trajectory. It also illustrates that complex issues have no simple or globally optimal solution; choices have different impacts on different stakeholders. Our second goal is therefore to provide the foundational knowledge and skills for students to effectively address community-level sustainability challenges.

Both concepts – sustainability and community engagement – have rich content and methodological skill components. Both have, at their core, choices made by individuals and organizations that have varied impacts. Our first four student learning outcomes (SLOs) express knowledge and skill development:

Student Learning Outcome 1. Students will be able to identify relationships among ecological, social, and economic systems.

Student Learning Outcome 2. Students will be able to describe how sustainability and community engagement relate to their civic lives and values, and how their actions impact issues of sustainability.

Student Learning Outcome 3. Students will develop the skills necessary to work in a community different from their own, in cooperative and diverse teams, with appreciation for varied cultural and life circumstances.

Student Learning Outcome 4. Students will be able to analyze the impact of choices on different constituencies, entities, and at different scales, including communities and the planet.

QEP GOAL 3: Connect to Practice

Our next goal is to enable students to connect the knowledge and skills they develop in the university to experiences of practice. This is particularly critical to our ambition that students be equipped to address challenges in their civic *and* professional lives; the baccalaureate survey indicates that connection of inter-skills to practice is currently challenging for students. Our next two learning outcomes capture this.

Student Learning Outcome 5. Students will be able to describe how sustainability relates to their professional practice.

Student Learning Outcome 6. Students will be able to describe the social and cultural impact of their professional practice.

QEP GOAL 4: Structure Deep Learning Experiences

To produce students who can effectively address sustainability challenges in community contexts requires structuring opportunities for them to practice and learn from authentic engagement and to communicate proposed solutions outside the university. Our last set of learning outcomes focuses on deep learning experiences.

Student Learning Outcome 7. Students will be able to create and evaluate approaches to sustainability challenges in the context of community-level needs.

Design by Alex Godwin

Student Learning Outcome 8. Students will be able to communicate effectively with diverse audiences around issues in creating sustainable communities and approaches to address them.

QEP GOAL 5: Build Long-Lasting Values and Beliefs

The Serve•Learn•Sustain Plan aims to create the opportunity for all Georgia Tech graduates to contribute to Georgia Tech's vision and mission throughout their lives. That is, we see the QEP experience as preparation for professional and civic life far beyond the students' time on campus. Our last learning outcome is affective and speaks to the goal of enabling students to apply characteristics encouraged by the QEP throughout their lives.

Student Learning Outcome 9. Students will develop and manifest personal values and beliefs consistent with their roles as responsible members of local, national, international, and/or professional communities.

QEP GOAL 6: Create Supporting Institutional Infrastructure

The QEP will put in place the elements necessary to support these learning outcomes, as called for in the literature and analysis of best practices (see Section IV). The QEP will further provide for the coherent, efficient, and effective institutional support needed to ensure sustainability and scaling of efforts. This support will include an office dedicated to sustainable communities educational initiatives, significant faculty involvement in developing and offering opportunities, and strong connections to student and other campus organizations (see Section V). The effort will be housed within the Office of the Vice Provost of Undergraduate Education, enabling integration into current and new programs (see Section VI).

IV. LITERATURE REVIEW AND BEST PRACTICES

The intention of this literature review is to provide a description of the current landscape of community engagement and service learning in sustainability; establish what researchers and practitioners say about the relative efficacy of pedagogical approaches that emphasize community engagement through sustainability; and delineate the challenges and strategies for creating effective learning experiences for students within a framework of both community engagement and sustainability education. The information and best practices collected here informed the Serve•Learn•Sustain Plan and its assessment, and will be invaluable during the implementation phase.

Overview of Sustainability-focused Community Engagement and Service Learning Initiatives

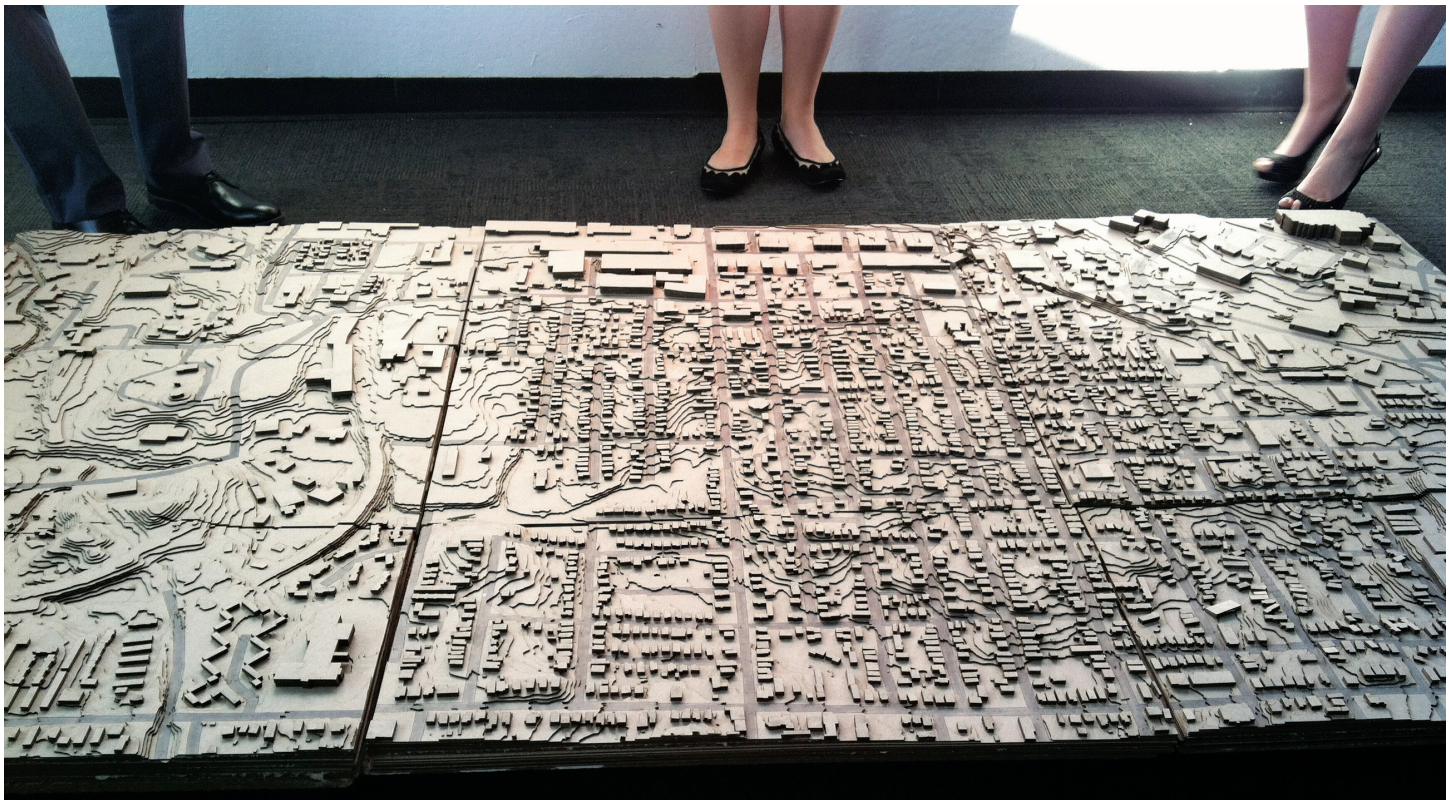
The literature focused on community engagement for sustainability education in higher education points to numerous models that have yielded positive outcomes.

The EPICS (Engineering Projects in Community Service) Program, initiated at Purdue University, was an early foray into community engagement-based education focusing on societal issues, including sustainability. The use of team-based, multiple-year design projects, with multi-disciplinary teams composed of student members across all levels from entering freshmen to graduate students, has been highly successful in identifying community partners, defining the needed projects, and functioning in a real-world client-firm model (Coyle, Jamieson, & Oakes, 2005; Coyle, Jamieson, & Oakes, 2006). Positive outcomes include the development of communication and teamwork skills along with technical expertise, long-term relationships with community stakeholders, and a sustained commitment to the project from both partners. Edward Coyle co-founded the EPICS Program and now directs a similar program, Vertically Integrated Projects (VIP), at Georgia Tech.

The University of Nebraska's Partners in Pollution Prevention Program (P3) offers a community engagement-based sustainability course that integrates a robust two-week (2 credit hour) classroom experience emphasizing both sustainability concepts and professional reporting skills with a 10-week internship with businesses and industries (Dvorak, Stewart, Hosni, Hawkney, & Nelson, 2011). Projects focus on identifying source reduction of waste streams and other sustainability issues. The internship culminates in a management report to the community partner/business and a final comprehensive report for the class and instructor. The combination of coursework and on-site internship increases the likelihood of implementing similar processes in subsequent situations (e.g., jobs) and is "consistent with the hypothesis that an intensive sustainability course with both a lecture and a service learning component can have a transformational impact on students, resulting in long-term changes in workplace behavior, including championing the relatively new concept of sustainability" (p. 118).

WE THUS FIND AN OPPORTUNITY AT THE INTERSECTION OF GEORGIA TECH'S HISTORY AND ASPIRATIONS, STUDENT SKILLS ASSESSMENT, AND INCOMING STUDENT INTEREST. THAT OPPORTUNITY IS TO EXTEND DISCIPLINARY EXCELLENCE TO EQUIP STUDENTS WITH THE KNOWLEDGE AND CAPABILITIES TO EFFECTIVELY ADDRESS COMPLEX, REAL-WORLD CHALLENGES.

e-Democracy Vertically Integrated Project



College of Architecture Model of Westside Atlanta

Brundiers, Wiek, and Redman (2010) advocated for a progressive model for integrating, in a coordinated and stepped manner, real-world learning opportunities across the undergraduate experience – beginning with an introductory first-year class and progressing to community-engaged learning in advanced level classes and capstones. The Arizona State University School of Sustainability infuses these real-world experiences, beginning with the freshman year, by investigating real sustainability issues in the classroom and builds expertise across all courses. This culminates in true community engagement, peer mentoring and reflection in research, and internship or collaborative projects in the third and fourth years. Self-management is cultivated, and "as students build competencies, the role of instructors in designing and facilitating real-world learning in the classroom decreases, while the level of interaction between students and community project partners increases" (p. 314). Butin (2010) sets forth criteria needed to institutionalize service learning or campus engagement programs and advocates for a progressive approach as well. The criteria include requiring an introductory course that provides some of the theoretical framework and goals of the program, some field experience, capstone courses, and a comprehensive account of the criteria for the engagement.

Portland State University offers a well-received, university-wide, and centrally organized/supported Pathways to Sustainable Careers Initiative that fosters strong community engagement practices (Allen, Beaudoin, Lloyd-Pool, & Sherman, 2014). The initiative includes a graduate sustainability certificate, a social entrepreneurship certificate, undergraduate sustainability and energy certificates (under development), sustainability-related internships, young professionals programs for graduate students, and selected capstone courses. The Solutions Generator, a competitive process that helps fund student sustainability project teams, is also a critical component of the initiative.

As part of the NSF Department Level Reform grant, the civil and environmental engineering programs at the University of Vermont integrated a service learning approach to sustainability projects in required courses across all levels (Hayden, Rizzo, Dewoolkar, Oka, & Neumann, 2011). The program addresses "real-world open-ended problems and emphasizes academic and intellectual development, civic engagement, and personal/interpersonal skills for the student while providing a meaningful service to the community partner" (2011).

Community engagement integration with sustainability education is, at times, more focused on specific components in the curriculum, including senior-level capstones, first-year courses, or mid-career classes.

Incorporating service learning and sustainability education into engineering capstone courses/projects has occurred at institutions as diverse as Michigan Technological University, Duke University, South Dakota State University, the University of Colorado at Boulder, and the University of Vermont (Bielefeldt, Dewoolkar, Caves, Berdanier, & Paterson, 2011). Each institution employs team-based projects (on issues such as water management or treatment, sanitation, site remediation, waste water treatment, disability devices), community partners (ranging from schools to non-profit organizations or private groups to municipalities), and client interactions to provide opportunities for real-world project management experience. In general, the capstone projects do not reach the construction phase; implementation of the project design usually occurs outside the project timeframe. Student reflection is a critical component and at times differentiates the service learning offerings from more traditional capstones. Reflection components are often integrated throughout the courses and, without exception, serve as a crucial element at the close of the projects.

Building Sustainable Communities, a 3-credit capstone at Texas Woman's University (TWU), blends a seminar format with a community project focusing on sustainability and includes a public presentation of findings and recommendations (Robb, Rylander, & Maguire, 2011). The course is a critical component of TWU's Science, Society, and Sustainability Certificate, developed to allow students to "enhance their academic majors by developing their ability to make thoughtful life choices and address problems from multiple perspectives" (p. 63).

The School of Sustainability at Arizona State University embraces a problem- and project-based learning (PPBL) curriculum that includes a required senior capstone course that teams students and community collaborators to develop recommendations and solutions to previously identified issues such as ground water recharge and establishing a community garden (Wiek, Xiong, Brundiers, and van der Leeuw, 2014). The collaborative projects or research utilize community liaisons and feedback, and shared coordination.

At Virginia Tech, the emphasis on first-year engineering students is integral to the ROXIE (Real Outreach eXperiences in Engineering) Program (Goff et al., 2010). Along with traditional classroom activities and hands-on weekly workshops, community engagement projects pair student teams with non-profit organizations (e.g., Boy Scouts, Humane Society, March of Dimes), with the goal of identifying a design problem and proposing and reporting on a viable solution. Reflecting on the experience and lessons learned is a crucial component as well. The problems focus on, or include a component on, sustainability-related issues. Project-end reflections generally indicated positive impacts on students' understanding of the design process and personal satisfaction with their engagement with community partners and projects.

First-year service projects can also provide a different perspective on the sustainability education – service learning association. The *Introduction to Engineering Design* course at Northeastern University provides an opportunity to impact more than 500 students each year (Freeman, Whalen, Jaeger, & Forman, 2012). To determine the efficacy of community engagement or service learning in the course, a decision was made to implement theoretical service-oriented projects (in contrast to experiential, service-learning projects) with both local and global implications and assess the impact. Surveys indicated a positive impact on attitude toward engagement and on the sense of civic responsibility for students in both the service-oriented and experiential service-learning classes, as compared to students in class sections with no service component.

Programs targeted to students during the mid-curriculum years tie more advanced content delivery with the community engagement component. At Loyola University, the Biodiesel Program offers three undergraduate and graduate STEP (Solutions to Environmental Problems) courses along with a continuing education option and internships (Lishawa, Schubel, Varty, & Tuchman, 2010). The three courses all include a service learning component; are interdisciplinary in terms of content, students, and faculty; and focus on biodiesel production issues and enhancing community awareness of associated environmental challenges. At Florida Gulf Coast University (FGCU), sustainability education is woven throughout the university curriculum, and the service learning integration occurs in several mid-level courses, including *Environmental Humanities,* a second-year general education class, and Environmental Literature, an elective course in the English and communication programs (Otto, & Wohlpart, 2014), offering a reflective, ecologically-directed community project.

Benefits of Community Engagement and Service Learning in Sustainability

Coupling community engagement and service learning with sustainability education in the curriculum has benefits for the students, for the faculty teaching them, and for the institution and community that supports both.

RESEARCH INDICATES THAT THE APPLICATION OF SERVICE LEARNING IN THIS CONTEXT GARNERS A "HIGHLY POSITIVE EDUCATIONAL OUTCOME IN TERMS OF DEEPER PROFESSIONAL KNOWLEDGE, IMPROVED LIFE SKILLS, AND A BETTER DEVELOPED SENSE OF SOCIAL AND CIVIC RESPONSIBILITY OF THE STUDENTS INVOLVED."

South Georgia Farmworker Health Project

Students

As a pedagogical tool, service learning not only delivers content and lessons learned in lectures and readings, but also provides students a real-world experience to develop skills in communication, critical thinking, reflective learning, project management, systems thinking, collaborative/team work, relating empathetically with others, and more (Bielefeldt, Dewoolkar, Caves, Berdanier, & Paterson, 2011; Brain & Thomas, 2013; Chen, Vanasupa, London, & Savage, 2006; Christensen & Yurttas, 2009; Clevenger & Ozbek, 2013; Dieleman & Huisingh, 2006; Habron, 2012; Pierrakos, Pappas, Nagel, & Nagel, 2012; Robb, Rylander, & Maguire, 2013; Salter, Murray, Davison, Fallon, & Towle, 2013; Schneider, Lucena, & Leydens, 2009; VanWynsberghe & Andruske, 2007). O'Connor, Lynch, and Owen consider the "role of student-community engagement in ensuring relevance of higher education to civil, social, economic, and moral issues" (2011, p. 100), and others indicate that one direct benefit for the students is an increase in their awareness of socio-political realities (Beavis & Beckmann, 2012; Bielefeldt, Dewoolkar, Caves, Berdanier, & Paterson, 2011; Chen, Vanasupa, London, & Savage, 2006; Clevenger & Ozbek, 2013; Goff et al., 2010).

Service learning has been shown to be an effective pedagogical approach for sustainability education (Christensen & Yurttas, 2009; Brundiers, Weik, & Redman, 2010) and the development of key competencies. Wiggins, McCormick, Bielefeldt, Swan, and Paterson define service learning, when integrated with sustainability education, as a variety of experiential learning "that brings students in contact with real-world situations, thereby providing an opportunity to learn about sustainability by focusing on human needs and accounting for real-world constraints" (2011). Research indicates that the application of service learning in this context garners a "highly positive educational outcome in terms of deeper professional knowledge, improved life skills, and a better developed sense of social and civic responsibility of the students involved" (Bodorkos & Pataki, 2009, p. 1130). Others have postulated that "community-based design projects may provide an opportunity to achieve higher level cognitive and affective sustainability learning outcomes among students" (Bielefeldt, 2013, p. 4493) and allow for dynamic interaction between the technical, environmental, socio-economic, and legal aspects of an engineering curriculum.

By mapping recommended sustainability outcomes (based on both the American Society of Civil Engineers Body of Knowledge for the 21st Century/ASCE BOK2 and the American Academy of Environmental Engineers Body of Knowledge/AAEE BOK) for civil and environmental engineering majors, Bielefeldt (2013) was able to correlate these outcomes with teaching methods often employed in these programs. The project-based service learning methodology mapped to "design of systems" outcomes for both Body of Knowledge comparisons. Correlation to ABET's (Accreditation Board for Engineering and Technology) requirements for problem-solving and design skills under real-world limitations, including sustainability, has been noted as well (Chen, Vanasupa, London, & Savage, 2006; Mintz, Talesnick, Amadei, & Tal, 2104). Satisfying ABET criteria at the departmental program level has been documented; one example points to a chemical engineering program outcome directed at engaging in life-long

learning, and the associated performance criteria that include student engagement in public education activities, which can be fulfilled through service learning and the resultant community partnerships (Christensen & Yurttas, 2009).

Faculty

Beavis and Beckman found that service learning projects allowed for better assessment of student strengths and weaknesses and for improved advising for the students during the course and that, moreover, faculty research may also be better informed (2012). Communities can provide valuable and actionable feedback on student performance to professors, and many stakeholders report positive contributions by the students (Beavis & Beckmann, 2012).

The faculty members may also find that new avenues open in their own research (Bodorkos & Pataki, 2009), and as students become more engaged, the faculty is likely to "catch" the enthusiasm as well (Bielefeldt, Dewoolkar, Caves, Berdanier, & Paterson, 2011). Oakes concludes that service learning experiences can be "a powerful tool in curriculum reform" (2009, p. 13) and may help lead to systemic changes in pedagogical approaches.

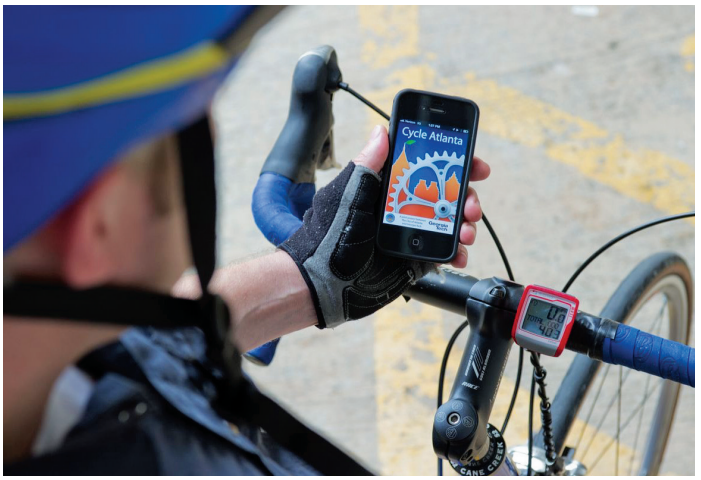
Institute

The benefits to the institution that offers service learning opportunities coupled with sustainability curricula are substantial. Universities prepare students to work and live in the world and to address sustainability issues of global significance. Fitzgerald points to improved relationships between "town and gown" arising from community partnerships (2012).

Well-documented difficulties exist in attracting women and minority students to the STEM fields, and a side effect of sustainability and service learning curricular components is that they seem to attract more women and minorities (Goff et al., 2010; Nieusma, 2009; Coyle, Jamieson, & Oakes, 2006). Bodorkos and Pataki also suggest that sustainability topics and programs can improve the overall research capacity of the institution (2009).

Communities/Stakeholders

Communities and stakeholders are often the recipients of increased resources, including time, money, innovative ideas, and manpower, when partnering with community-based service learning project groups (Oakes, 2009). Even if the communities or organizations do not implement suggested changes right away, they often report that the suggestions were valuable and that they plan to implement them at some point (Beavis & Beckmann, 2012).



Cycle Atlanta Mobile Application

Flammia sums up the benefits to the community:

> Beyond the specific contributions made by individual and group projects, however, a focus on a global issue like sustainability within … curriculum can have the larger benefit of raising awareness of the issue across campus and within the community. Awareness of global issues is a necessary first step for addressing them. Beyond that first step, an important second step is to give students the preparation they need for becoming active global citizens who know how to take meaningful action to effect social change both within and outside of their working lives (2011).

Strategies for Implementation

Creating a Supporting Infrastructure

Portland State University's Pathways to Sustainable Careers Initiative points to a need to integrate or organize myriad programs and efforts on a campus to provide a "more intentional, cohesive, and easily navigable set of pathways that will better provide students with the academic knowledge, leadership skills, and real-world experiences needed to solve complex problems" (Allen, Beaudoin, Lloyd-Pool, & Sherman, 2014, p. 48) in preparation for a sustainability-related career. Without a coordinating framework or structure, it is problematic for students to find appropriate/relevant opportunities, and challenging for the university to recognize obstacles for the students as they navigate the system. When there is a campus-level structure, collective and complementary learning outcomes and goals development, shared assessment or evaluation (e.g., initiative-wide e-portfolios), and mapped pathways to developing competencies happen more directly and effectively.

The experience with the EPICS program at Purdue University also points to the need for a supportive structure and campus champions and indicates that the "most critical elements in the success of an EPICS program are leadership of the program by one or more faculty members and support by the appropriate departmental and college administrators" (Coyle, Jamieson, & Oakes, 2005, p. 148).

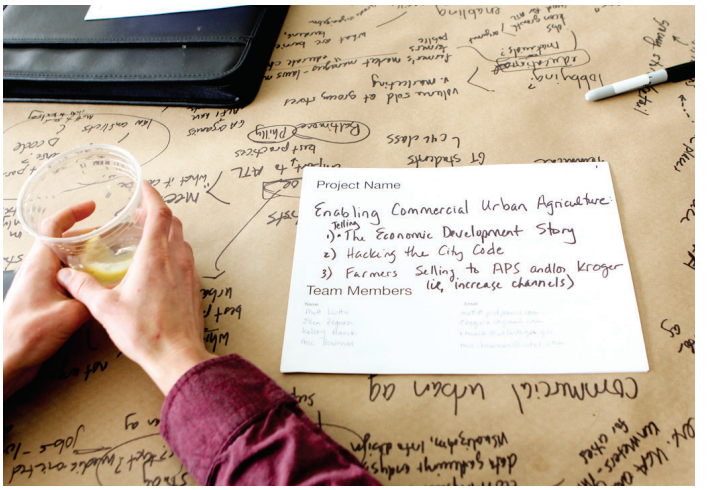
Setting Realistic Expectations

Bielefeldt, Dewoolker, Caves, Berdanier, and Paterson (2011) indicated that for community-based service learning projects, potential partners can overestimate the capabilities or expertise of the students and/or the scope of the project and intended outcomes. Recommendations to overcome improbable expectations include open communication channels, establishing relationships with the community stakeholders prior to initiation of the actual project, and providing information on what students can and cannot accomplish within the parameters of the project. At the School of Sustainability at Arizona State, community partners, on occasion, expressed discontent with lack of follow-through on projects, and the program leadership has determined that "intermittent interactions, student turnover, and the limitations of the academic schedule have been issues that can only be dealt with through careful relationship building, planning, and impact orientation" (Wiek, Xiong, Brundiers, & van der Leeuw, 2014, p. 15).

Reactions from students can be mixed. Christensen & Yurttas (2009) found that most chemical engineering students involved in a service learning course at their institution valued the content knowledge, the project management skills, and the experience with teams and in leadership roles. However, some did not feel they had sufficient avenues for originality or creativity and did not see the project as meeting a real community need. This may be a function of the major itself and/or the content of the particular course, but indicates that, in certain content areas, meaningful "projects are not visibly available, and finding them requires searching and initiation of dialog with the community organizations" (p. 11).

Training Faculty and Recognizing Their Contributions

Concerns about the faculty time and effort required to provide robust service learning components in sustainability-themed classes have been expressed across the spectrum of courses offered (Bodorkos & Pataki, 2009). As O'Brien and Sarkis note, "the process of managing the teams and organizing client partners for the student groups is not trivial" (2013, p. 56). However, the work needed to teach a robust, industry-sponsored capstone can be equivalent to



Food Data Hack Workshop

a service learning approach (Bielefeldt, Dewoolker, Caves, Berdanier, & Paterson, 2011), though the time expenditure for establishing community partnerships prior to the actual class, and the project reviews, particularly if community stakeholders are included, can be substantial for a service learning project. Utilizing non-profit organizations (e.g., Engineers without Borders) to facilitate locating appropriate partnerships can mitigate the frontloaded time commitment (Bielefeldt, Dewoolker, Caves, Berdanier, & Paterson, 2011).

Brundiers, Wiek, and Kay (2013) recommend utilizing well-trained students or staff to help with administrative and logistical duties, communication with community partners, and preparation of materials and activities, therefore allowing faculty added time to focus on other matters. Arizona State University endorses the development of training programs for both faculty and graduate students (Wiek, Xiong, Brundiers, & van der Leeuw, 2014) and recommends that graduate students "be encouraged to seek out projects and project partners that correspond to the research topics of their Master or PhD theses" (p. 17).

Brundiers, Wiek, and Redman (2010) noted that incentives for faculty willing and able to lead real-world learning experiences is an effective strategy for continued participation. Flexible schedules to allow for advanced preparation, a high level of input and ownership in curriculum design, and positive input for the promotion/tenure process can be effective incentives. Awareness of a different paradigm in teaching may be warranted, and colleges and universities, according to Fitzgerald, need "to examine existing promotion and tenure practices to enhance the perception of usefulness of community engagement" (2012, p. 104).

To address issues of preparedness, engineering faculty at Colorado State University-Pueblo obtained a PROPEL grant to focus on sustainability, service learning, and instructional technology (Fraser et al., 2013). They developed a four-day workshop, utilizing a cross-training approach, to develop expertise in these arenas and to develop plans for implementing ideas into course offerings. More general training opportunities, not restricted to one institution, have also been successful in helping to prepare faculty to integrate sustainability into the curriculum and addressed issues of teaching methodologies and lack of resources (Zhang, Vanasupa, Mihelcic, Zimmerman, & Platukyte, 2012). Potential means to address faculty training challenges included standardization of sustainability competencies and instituting more "low barrier" training opportunities.

Achieving Institutional Alignment

The New England Resource Center for Higher Education (NERCHE) administers the Carnegie Community Engagement Classification, a voluntary designation that colleges and universities can apply for through an evidence-based documentation process.[8] According to the Classification Documentation Framework, institutional identity and culture benchmarks include:

- Prioritization of community engagement in the institution's mission or vision statement,
- Formal recognition of community engagement through campus-wide awards and celebrations,
- Systematic assessment of community perceptions of engagement,
- Inclusion of engagement activities or programs in institutional marketing materials, and
- Explicit promotion by executive leadership.

Institutional commitment for community engagement is demonstrated by factors such as:

- A campus-wide infrastructure for coordination and support,
- Internal budgetary allocations, external funding, fundraising, and other financial resources committed to institutional engagement,
- Inclusion in strategic plans,
- Support for faculty and staff professional development,
- Inclusion in faculty and staff recruitment efforts and rewards structures, and
- Collaborative planning for engagement at the institutional and/or departmental level with the community.

Beere, Votruba, and Wells (2011) highlight the need to embed public engagement in the university's educational mission in order to gain full acknowledgement and acceptance by the campus. The mechanism for this alignment is unique for each university and ideally identifies leaders – at myriad levels – to advance and sustain the engagement vision (p. 81). Rosenberg and Karp (2012) also point to institutional structure and how "building a culture that supports CBL (community-based learning) requires a strong infrastructure focused on developing and promoting community partnerships" (p. 4). The infrastructure may include a centralized campus office/unit to support faculty teaching service learning or community-based learning courses; internal partners with a strong commitment to the program; a robust marketing and recruiting effort; support from the (campus) administration; support for faculty, including professional development courses (on areas such as infusing reflection throughout a course), scheduling/coordinating assistance, and technical support; and a recognition structure that includes awards for excellence in community engaged learning and research (p. 4 - 9).

The Serve•Learn•Sustain Plan will play a critical role in moving Georgia Tech toward institutional alignment and commitment to community engagement and service learning in sustainability.

What these experiences teach us about successes, challenges, and mitigation strategies has been (and will continue to be) incorporated in the actions to be implemented over time, their assessment and the organizational structure to support these actions (Sections V-VIII).

Social Media and Elections Workshop

[8] http//:nerche.org/images/stories/projects/Carnegie/2015/2015_first-time_framework.pdf

V. ACTIONS TO BE IMPLEMENTED

We structure the actions to be implemented around the six QEP goals from Section III and the recommendations from the literature.

QEP Goal 1: Build Student Awareness of Issues and Opportunities

Critical to the success of the QEP is raising awareness on the part of prospective and new students and their parents regarding the opportunities created by the Serve•Learn•Sustain Plan at Georgia Tech. In addition, it is important to provide early and frequent opportunities to engage in class discussions or participate in events where key sustainable community issues are addressed. This goal contributes to the success of the learning goals by helping attract students to the curricular opportunities that generate student learning outcomes. Building awareness will also contribute to the association of Georgia Tech's brand and culture with community engagement in sustainability.

Actions to be implemented:

- Develop a freshman camp, based on an existing model, with selective admission and advertised to all incoming freshmen;
- Include readings and discussion on sustainable communities in Project One/GT 1000;
- Communicate opportunities with prospective and new students and their parents through admissions materials and at FASET (new and transfer student) orientation;
- Support student organizations that focus on sustainable community engagement;
- Organize events that promote and celebrate sustainable community efforts.

Participation target outcomes (by the end of five years):

- One hundred students participate in freshman camp annually;
- At least half of all FASET orientation offerings include sustainable communities content;
- Four to six student organizations or student organization activities are supported explicitly via the QEP;
- At least two events per year (one per semester) showcase student work in sustainable communities in a public setting.

QEP Goal 2: Develop Knowledge and Skills

The Serve•Learn•Sustain Plan will provide opportunities for students to develop foundational knowledge and skills to effectively address community-level sustainability challenges. The actions to be implemented

SUSTAINABLE COMMUNITIES MEET THE DIVERSE NEEDS OF EXISTING AND FUTURE RESIDENTS, ARE SENSITIVE TO THEIR ENVIRONMENT, AND CONTRIBUTE TO A HIGH QUALITY OF LIFE.

Design Workshop in Data Science for Social Good Internship

Georgia State Election Monitoring

GEORGIA TECH HAS LONG VALUED POSITIVE ENGAGEMENT WITH COMMUNITIES NEAR AND FAR. ALONG WITH THIS INSTITUTIONAL COMMITMENT, WE ARE WITNESSING A SEA CHANGE IN STUDENT AND FACULTY INTEREST IN MAKING A REAL DIFFERENCE IN THE WORLD.

in support of this goal involve curriculum development of new courses and modifications to existing courses. In considering new course development, we are guided by the observation that sustainability and community engagement each has its own intellectual content and methodological foundations. In sustainability, this content comprises understanding the environment, economics, and society, and their interrelationships. In community engagement, this content emphasizes understanding communities, politics, and ethics, and their interrelationships, as well as how to engage most productively with communities so as to leverage a strong disciplinary foundation (engineering, science, computing, business, etc.). Georgia Tech has existing courses that address sustainability in various ways, and (fewer) courses that concern community engagement. Missing in the current offerings are courses that combine both considerations.

In addition to observations about content, methods, and current offerings, we are further guided by a desire to scale course offerings so that many students can achieve the desired learning goals with courses that fit into their degree programs, some of which are quite constrained in electives.

Taken together, these observations lead us to propose two new courses, both with consideration for sustainable communities but grounded in two distinct bodies of knowledge. The first – *Foundations of Sustainability with Applications to Sustainable Communities* – emphasizes sustainable systems theory, with illustrative problems anchored in communities (neighborhoods, cities, regions). The second – *Community Engagement Methods with Applications to Sustainable Communities* – emphasizes community engagement methods, with cases and field trips anchored in sustainable community projects. We believe the two perspectives will allow us to appeal to a broader range of students and majors as well as a broader range of faculty interested in developing, refining, and teaching these courses.

The two new courses form a core commitment by the QEP for course development. But the theme of the QEP admits creative curricular thought across multiple disciplines. Several of the large freshman courses are good candidates. In addition, faculty members across many units have expressed interest in infusing sustainable community content into existing courses and developing new courses. These avenues will be pursued based on faculty interest and in response to a proposal solicitation and review process.

Actions to be implemented:

- Develop sophomore-level classes in *Foundations of Sustainability with Applications to Sustainable Communities* and *Community Engagement Methods with Applications to Sustainable Communities*;
- Support the infusion of sustainable community considerations into freshman courses taken by many majors, e.g., Biology 1510 (Biological Principles), English 1101 (English Composition), Earth and Atmospheric Sciences 1600 (Introduction to Environmental Science) or 1601 (Habitable Planet), Computer Science 1371 (Computing for Engineers);
- Support the development of new courses and refresh of existing courses at the sophomore year and beyond as part of a proposal solicitation and review process.

Participation target outcomes (by the end of five years):

- Three sections of 75 students/year of the two new courses (450 students/year, representing about 16% of the sophomore class size) are offered;
- At least 50 percent of students take at least one freshman course with sustainable community infusion;
- Up to 16 new electives and 28 existing courses across the Institute are refreshed with sustainable communities content.

QEP Goal 3: Connect to Practice

The QEP will guide students in connecting the knowledge and skills achieved in coursework to practice in the area of sustainable communities. Georgia Tech has long had an active cooperative education program in which students complete three semesters at a co-op work assignment, interleaved with semesters on campus. Summer internships are increasingly common as companies compete for an advantage in recruiting soon-to-be graduates. These experiences place students in professional settings, though connections to the educational campus experiences are informal and largely absent. As part of the QEP we propose to structure a reflection and discussion experience that will assist students in making a stronger connection between their professional experience and their on-campus education.

Actions to be implemented:

- Increase co-op and internship opportunities in sustainability and community engagement, with an "SC" (sustainable communities) labeling scheme to assist with tracking;
- Create a 1-credit guided reflection and seminar addition to external experiences to increase student connection between on-campus learning and external experiences.

Participation target outcomes (by the end of five years):

- At least 5 percent of co-ops and internships carry the SC label;
- At least 25 percent of students taking an SC-labeled co-op or internship complete the 1-credit reflection seminar.

QEP Goal 4: Structure Deep Learning Experiences

Many students will have an opportunity to develop knowledge and skills in the area of sustainable communities through one or more of the courses developed or adapted under the QEP. The course offerings, co-curricular experiences, and extra-curricular organizations will allow students who so desire to have a deeper learning experience. Rather than leave students and advisors to create these on their own, the QEP will develop and support several options.

Capstone courses provide an ideal opportunity for a deep learning experience, as students work in teams on projects that may come from external partners with whom teams interact. Students in capstone classes practice professional skills such as teamwork, project planning, iterative design, and communication. Capstone courses are also an ideal setting for service learning when projects are drawn from appropriate domains and partnerships.

The QEP will support the development of additional Vertically Integrated Projects (VIPs), a vibrant mechanism to involve students at all levels in long-running research and development projects under the supervision of a faculty member.

The QEP will include two new options for creating a deep learning experience: a Public Service pathway and an Innovating for Sustainability pathway. Both are responsive to express priorities in the Georgia Tech strategic plan, and both leverage recent campus investments such as the GT Innovation and Design Collaborative. These pathways may become official designations – certificates, minors, or degree pathways each year – depending on student interest.

Actions to be implemented:

- Support the development of service learning capstone courses focused on sustainable communities or with projects that include sustainable community options;

- Increase the number of VIPs with a sustainable community relationship;
- Create Public Service and Innovating for Sustainability pathways.

Participation target outcomes (by the end of five years):

- Eight new VIP projects have the sustainable communities theme;
- One capstone section (or equivalent) in all majors that have a capstone requirement is focused on or includes projects that advance the creation of sustainable communities;
- At least 120 students complete the Public Service or Innovating for Sustainability pathways/year.

Georgia Tech is currently engaged in a strategic planning process to create and implement a more holistic and robust Living-Learning Communities (LLCs) model of residential undergraduate education. If plans for this initiative move forward, one of the first proposed new LLCs would be in sustainable communities. The Sustainable Communities LLC would directly support the QEP goal of structuring deep learning experiences by leveraging the coursework and other programmatic elements of the plan. If implemented, the Sustainable Communities LLC would be appropriately incorporated into the QEP's budget, administration, and assessment plan.

QEP Goal 5: Build Long-Lasting Values and Beliefs

This goal is supported by the collection of activities and actions implemented in support of QEP Goals 1-4. No new activities or operational outcomes are associated with this goal.

QEP Goal 6: Create Supporting Institutional Infrastructure

Effectively supporting the above goals will require investment in several forms of infrastructure. Meeting the QEP infrastructure goal consists of developing and institutionalizing sustainability and community engagement programs and pathways for our students and the stimulation and curation of projects (staff to manage the partner relationships that are developed and to continue to seek new ones, the necessary IT infrastructure to support project curation/participation).

Actions to be implemented:

- Develop and maintain QEP-focused partnerships to create meaningful opportunities for students to engage with sustainability and community issues;

GT Innovation and Design Collaborative Workshop

- Create workshops and a pedagogical material repository that support faculty in adapting existing courses and/or developing new courses;
- Develop an IT infrastructure for partner/project/faculty/student matchmaking and pathway tracking;
- Develop and execute a marketing and communication plan for internal and external audiences and;
- Educate academic advisors and career development personnel who can guide students appropriately in pathway selection and the expanded set of career opportunities.

Infrastructure target outcomes (by the end of five years):

- Ten deep educational partnerships and a set of other smaller partners providing service learning projects across the Institute have been established;
- Workshop material is owned by the colleges and disseminated to external partners;
- The project clearinghouse is in wide use by faculty and external partners alike;
- Georgia Tech is well-known by prospective students, current students and faculty, and externally for sustainable communities engagement;
- Academic advisors effectively guide students with sustainability and community engagement interests.

VI. ORGANIZATIONAL STRUCTURE

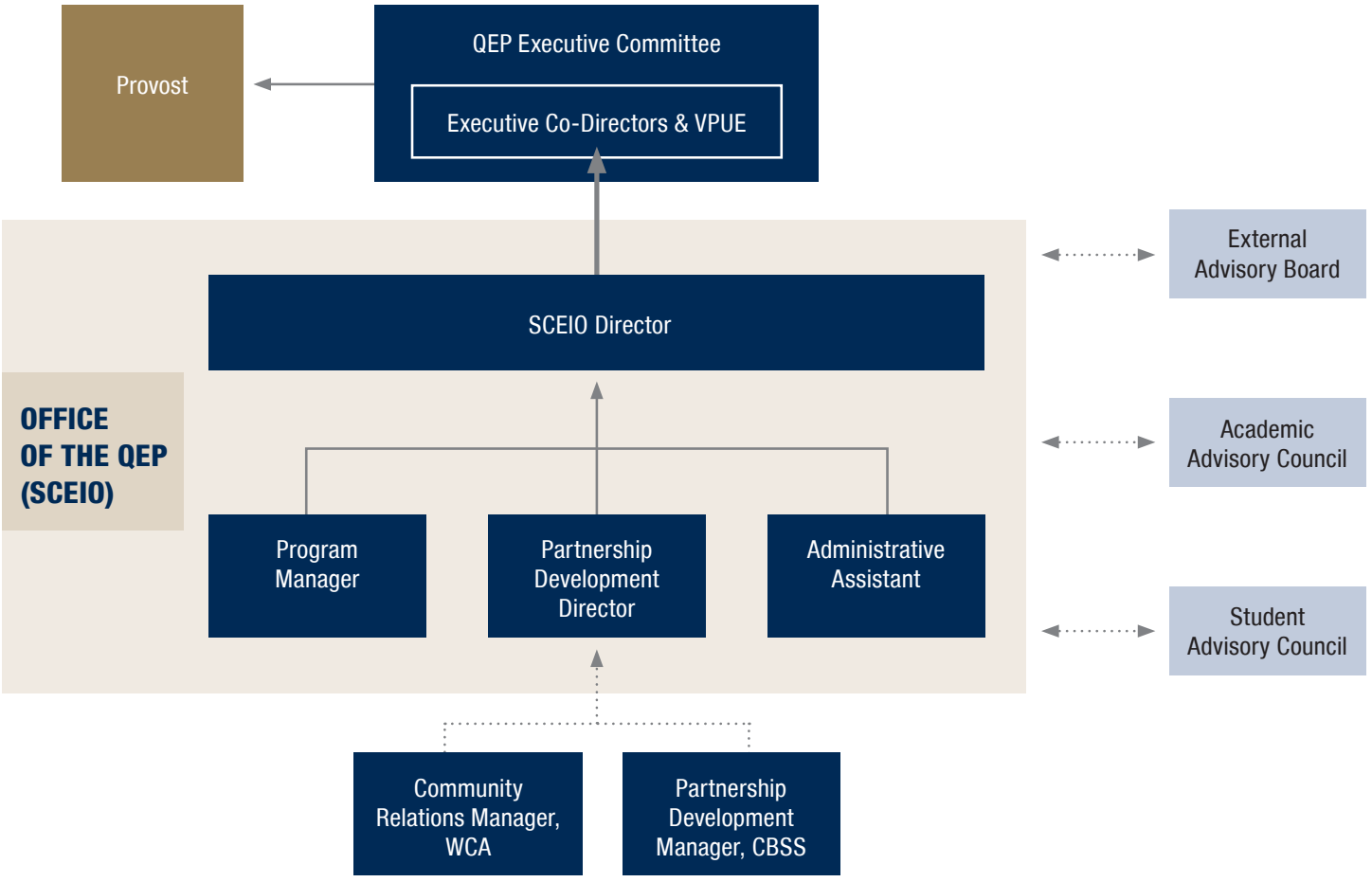
The QEP includes curricular components that fall under the oversight of the Institute's six colleges and programming that is primarily supported by administrative units reporting to the Office of the Provost and the Office of the Vice Provost for Undergraduate Education (VPUE). We therefore propose a QEP management and oversight mechanism that:

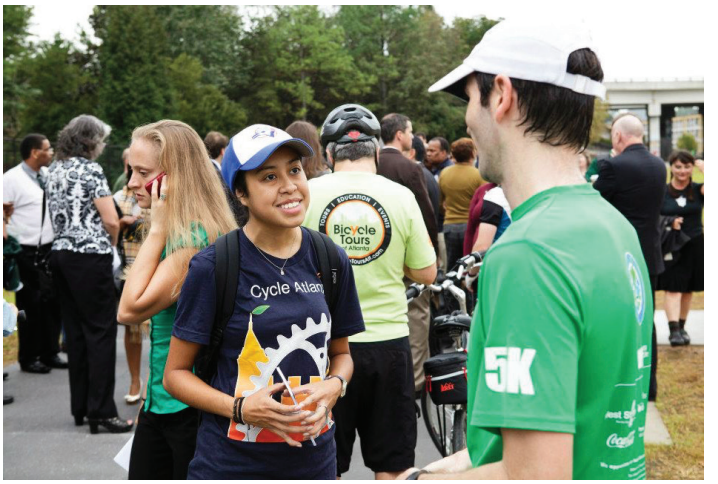
- is responsive to the colleges;
- is closely aligned with the Office of the VPUE; and
- ensures the tight coordination with other administrative units, such as student affairs, enrollment services, and Institute communications.

The organizational structure for the QEP that achieves these goals is presented in Figure 1.

THE QEP WILL REPRESENT A PERVASIVE, COORDINATED EFFORT THAT WILL INCLUDE A NUMBER OF ADMINISTRATIVE UNITS.

Figure 1. Organizational structure for the implementation of the Serve•Learn•Sustain Plan.





Community Outreach for Cycle Atlanta

A QEP office, named the Sustainable Communities Educational Initiatives Office (SCEIO), will be formed to manage the implementation and coordinate the assessment of the QEP. This office will be headed by the SCEIO director. The SCEIO director will be a full-time, non-tenured academic faculty member at the rank of academic or senior academic professional and will have an academic background in a discipline represented at Georgia Tech. Preferred qualifications for this position include having significant understanding of the issues involved in sustainability education as well as experience with service-learning programs. (A complete job description is included in Section XII). The director will be responsible for implementing the QEP strategy. The SCEIO director will initially report to the executive co-directors and will have an operational reporting line to the vice provost for undergraduate education (VPUE), serving as a member of his leadership team. As part of the institutionalization of the effort, the SCEIO director will eventually fully transition to reporting to the VPUE. This is expected to take place at the beginning of the third calendar year of the QEP implementation.

A QEP Executive Committee will be established, accountable for the success of the QEP and responsible for the ongoing refinement of the QEP strategy and the yearly budget. That committee will consist of the QEP executive co-directors, the vice provost for undergraduate education, the assistant provost for administration (direct report of the provost), the SACSCOC liaison, and the director of the Office of Assessment. The SCEIO director will be closely advised by the Executive Committee to plan and implement the QEP activities.

Reporting to the SCEIO director will be three positions: a program manager with operational responsibility for activities managed by the SCEIO director and the Executive Committee; a partnership development director with responsibility for educational partnership development and management; and an administrative assistant who provides administrative assistance for the full QEP portfolio and personnel. Job descriptions are provided in Section XII.

The partnership development director will be responsible for partnership development and management activities, including partner identification and cultivation, project curation and follow up, maintaining the project database, collaborating with Institute communications and enrollment services to create visibility for interesting projects, and collaborating with the Center for Career Discovery and Development (C2D2) to source QEP-themed internships and co-ops. The partnership development director will be an individual with a successful track record of working with multi-stakeholder groups spanning civic organizations, government, and industry. Preferred qualifications include a master's degree and prior experience working in or with a research university.

The partnership development director will also manage two staff members who will have responsibilities to the QEP along with other duties. The first is a position associated with the Westside Communities Alliance (WCA), a partnership between a collection of local communities and local universities, including Georgia Tech. The second is a position with the Center for Business Strategies for Sustainability (CBSS), a hub for educational and research initiatives in sustainable business. We anticipate that each of these positions will carry a 50 percent appointment in support of the QEP, and the partnership development director will co-supervise each staff member.

The associate vice provost for Undergraduate Education (AVPUE) will work closely with the SCEIO director and serve as the point person for financial and within-VPUE operational aspects of the QEP. The AVPUE supervises a financial manager who will assist with the day-to-day financial functions for the QEP, including preparing budget documents as requested.

The Sustainable Communities Educational Initiatives Office will maintain strong ties to each of the six colleges by establishing an Academic Advisory Council that will consist of an academic associate dean from each college, the associate vice provost for Undergraduate Education, the

Sustainable Transportation Effort

associate vice provost for Graduate Education and Faculty Affairs, and a faculty QEP liaison from each college. There will also be a Student Advisory Council whose members serve on two-year, staggered terms. These councils will be convened semi-annually by the SCEIO director for ongoing communication and feedback. Finally, an External Advisory Board consisting of academic, non-governmental organization, government, and industry thought leaders on creating sustainable communities (focusing initially on the Atlanta metro area and the Southeast) will be instituted. The purpose of this board will be to create external visibility that supports partnership and dissemination efforts. It will meet once per year with the Executive Committee and the SCEIO director.

The QEP will represent a pervasive, coordinated effort that will include a number of administrative units. The SCEIO director will be responsible for ongoing communication and coordination with these units to achieve QEP infrastructure goals and relevant programming goals. Table 1 summarizes QEP collaborators and their roles, as were determined based on QEP Administrative Committee meetings and the vice provosts' retreat in the fall; other collaborators may emerge during the course of the QEP implementation. Each QEP collaborator will submit annual schedules that detail specific plans and activities that support the QEP, thus enhancing coordination. The SCEIO will be responsible for supporting and communicating plans and activities to faculty and students as appropriate. QEP collaborators will meet semi-annually to inform each other of ongoing activities. The SCEIO director will be responsible for convening working groups cutting across different collaborators as needed to ensure maximum effectiveness.

Table 1: QEP Collaborators and Their Roles	
QEP COLLABORATOR	**ROLE**
Center for Academic Enrichment (VP Undergraduate Education (VPUE))	Infuse SC content into Academic Transition Programs (Project One, GT 1000)
Center for Academic Success (VPUE)	Include SC-focused information in student support systems and advisor communications (e.g., Grades First)
Center for Career Discovery and Development (VPUE)	Support SC designation project in CareerBuzz, collaborate with QEP Partnership Development team to enhance SC-focused co-op/internship opportunities and career advising, include SC-themed content in events (e.g., internship/co-op welcome back event, career fair)
Honors Program (VPUE)	Designate some Honors Program special topic courses as SC-themed courses
Office of the Registrar (VP Enrollment Services (VPES))	Support SC designation project and provide information for assessment purposes (e.g., undertake semester reporting of students taking SC-flagged classes)
Office of Student Financial Aid (VPES)	Collaborate for off campus (community service) employment opportunities/ contracts appropriate for Federal Work Study
Office of Undergraduate Admission (VPES)	Undertake SC-focused enrollment marketing and communications for promoting to prospective students
Office of Graduate Studies (VPGEFA)	Develop connections between the QEP and graduate studies initiatives
Center for the Enhancement of Teaching and Learning (VPGEFA)	Support course redesign studio, create QEP learning community, organize dissemination workshops
Office of International Education (VP International Initiatives)	Collaborate with faculty to offer SC study abroad programs, support SC-focused international educational partnerships and programs, encourage SC participation by international students for domestic/on campus SC activities
Library (VP for Academic Effectiveness)	Curate learning materials and student project output, support use of best practices in faculty workshops

Table 1: QEP Collaborators and Their Roles	
QEP COLLABORATOR	**ROLE**
Office of Leadership and Civic Engagement (Division of Student Affairs)	Collaborate and implement SC freshmen camp, support faculty development for service-learning and academic-based community engagement, support co-curricular community engagement activities
Office of New Student and Sophomore Programs (VP Student Affairs)	Include SC-focused information/activities in Freshman and Transfer FASET Orientation, provide planning support for SC Freshman camp
Campus Recreation Center (VP Student Affairs)	Provide SC internship opportunities, collaborate in developing guided reflection for participants in co-ops and internships, connect outdoor experiences to SC goals
Community Relations (VP Government and Community Relations)	Collaborate on QEP partnership development and assist in identifying government opportunities
Vertically Integrated Projects	Source and support SC-focused VIPs
GT Innovation and Design Collaborative	Collaborate to incorporate design thinking approaches in the Community Engagement Methods class and to develop the Innovating for Sustainability pathway
Housing and Dining Services (VP Campus Services)	Support SC-focused activities in residence halls and dining facilities
Office of Sustainability (VP Administration and Finance)	Include SC content in student and employee programming, support campus-specific opportunities (through classes or special projects), collaborate on campus challenges
Institute Communications (VP Institute Communications)	Provide strategic advising for the development and implementation of the Marketing and Communications plan of the QEP

VII. TIMELINE

THE INSTITUTE EXECUTIVE LEADERSHIP STRONGLY COMMITS TO PROVIDING THE NECESSARY RESOURCES AND PRIORITY TO THE PROGRAM.

The Serve•Learn•Sustain implementation plan is designed to allow for pilot projects, growth over time, periodic program assessment, and a re-balancing of the budget to reflect outcomes from pilots and program assessment. Table 2 reflects this structure that applies to all goal areas.

The QEP officially starts in January 2016 so the information is presented by calendar year rather than academic year. In 2015 some baseline data collection and preparation work will take place.

Table 2: Timetable for Serve•Learn•Sustain Plan Implementation

YEAR	PRIMARY FOCUS
2015 (pre-QEP)	Hiring QEP staff, baseline data collection, summer camp pilot, development of workshops and sophomore-level foundational classes
2016-2017	Establishment of pilots, partnerships, new course development, initial course infusion
Program assessment and re-balancing of efforts/resources as needed	
2018-2019	Solidify programs in all focus areas
Program assessment and determination of final stage of institutionalization effort	
2020	Institutionalize across all focus areas

Table 3 presents activities and tasks by each of the goal areas they support. The entity primarily responsible for the implementation of each task is listed in the last column, with the understanding that they will collaborate with appropriate campus entities as described in Table 1.

Table 3: QEP Activities for Each Year of Implementation By Goal							
BUILD STUDENT AWARENESS							
Activity/Task	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**Responsible**
Develop freshman camp with selective admission advertised to all incoming freshmen							
1. Develop and pilot freshman camp							Office of Leadership and Civic Engagement
2. Refine and grow							
Include readings and discussion on sustainable communities in Project One/GT 1000							
1. Identify yearly Project One reading							Academic Transition Program
2. GT 1000 benchmarking							
3. Targeted infusion							
Communicate opportunities with prospective and new students and their parents							
1. Share (video) profiles and testimonials of GT students engaged in SC activities or "success stories" with prospect pool							Enrollment Services
2. Describe SC opportunities to visiting student and parent audiences							Enrollment Services
3. Use FASET or other e-promotion to incoming students during summer prior to enrollment							Enrollment Services
Support student organizations that focus on sustainable community engagement							
1. Run yearly call for proposal process and provide seed funds							SCEIO
2. Evaluate and make continuation decision							
Organize events that promote and celebrate sustainable community efforts							
1. Solicit and select proposals from campus organizations							SCEIO
2. Implement and communicate							SCEIO/IC

Table continued on next page.

Table 3: QEP Activities for Each Year of Implementation By Goal							
DEVELOP KNOWLEDGE AND SKILLS							
Activity/Task	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**Responsible**
Develop sophomore-level classes in Foundations of Sustainability and Community Engagement Methods							
1. Assemble teams and develop courses	Summer/ Fall '15						Faculty teams, including Executive Co-Directors
2. Curriculum approval process in parallel with pilot		Spring '16					
3. One section of each course starts		Fall '16					
4. Refine and scale up			2 sections each	3 sections each	3 sections each	3 sections each	Faculty team & units
Support infusion of sustainable community considerations into freshmen courses taken by many majors							
1. Best practice benchmarking and workshop development							SCEIO/ Executive Co-Directors
2. Team-based curriculum refresh							Faculty
3. Refinement and scaling							Faculty
4. Dissemination							SCEIO/IC
Support the development of new courses and refresh of existing courses							
1. Develop service learning workshop							SCEIO/ Executive Co-Directors
2. Yearly call for proposals; semester workshops	Fall '15 call	Workshops start					SCEIO
3. New courses		4	4	4	2	2	Faculty
4. Obtain permanent course codes							Units
5. Course infusion		6	8	6	4	4	Faculty

Table 3: QEP Activities for Each Year of Implementation By Goal

CONNECT TO PRACTICE

Activity/Task	2015	2016	2017	2018	2019	2020	Responsible
Increase co-op and internship opportunities in sustainability and community engagement							
1. Collect baseline data							Partnership Development Team/C2D2
2. Source new co-ops and internships from partner network							
3. Enhance visibility and career advising							
Create a 1-credit guided reflection and seminar addition to external experiences							
1. Develop template							SCEIO
2. Communicate to students and advisors							C2D2/CAS
3. Create and maintain community of reflection							PTeam/C2D2

STRUCTURE DEEP LEARNING EXPERIENCES

Activity/Task	2015	2016	2017	2018	2019	2020	Responsible
Support the development of service learning capstone courses focused on sustainable communities							
1. Develop service learning workshop		Spring '16					SCEIO/ Exec Co-Dirs
2. Yearly call for proposals		Fall '16 call					SCEIO
3. Capstone infusion							Faculty
Increase the number of VIPs with sustainable community relationship							
1. Communicate internally and externally							VIP/SCEIO
2. Establish and mentor new teams							VIP/faculty
Create Public Service and Innovating for Sustainability Pathways							
1. Inventory of existing classes & external benchmarking							SCEIO
2. Pathway design and communication							Faculty team
3. Refine and grow enrollment							Faculty team
4. Institutionalize as certificate or minor							Faculty team/ SCEIO

Table continued on next page.

Table 3: QEP Activities for Each Year of Implementation By Goal

CREATE SUPPORTING INSTITUTIONAL STRUCTURE

Activity/Task	2015	2016	2017	2018	2019	2020	Responsible
Develop and maintain QEP-focused partnerships							
1. Form educational partnerships team							Executive Committee
2. Form external advisory board							SCEIO
3. Develop and deepen partnerships							PTeam
Create workshops and a pedagogical material repository							
1. Develop infusion workshops for first-year classes							SCEIO
2. Develop service learning workshop							SCEIO
3. Hold spring and fall workshops for faculty and teaching assistants							SCEIO/CETL
4. Create and maintain material repository							SCEIO/IT
Develop an IT infrastructure for partner/project/faculty/student matchmaking and pathway tracking							
1. Gather requirements and review related infrastructure							SCEIO/IT
2. Develop and test infrastructure, implement pathway tracking							SCEIO/IT
3. Maintain and refine infrastructure							SCEIO/IT
4. Develop and launch web page							IC/SCEIO
Develop and execute a marketing and communications plan							
1. Initial Awareness Campaign							IC/SCEIO
2. Develop videos and other non-print material							IC/SCEIO
3. Disseminate outputs/successes via multiple channels							IC/SCEIO
Educate academic advisors and career development personnel							
1. Develop workshops for academic advisors and career counsellors							SCEIO PTeam
2. Grades First inclusion and refresh							CAS
3. Run workshops							SCEIO PTeam

VIII. ASSESSMENT

The evaluation of the Serve•Learn•Sustain Plan will involve the assessment of both operational outcomes (i.e., implementation goals) and student learning outcomes. Table 4 summarizes both sets of outcomes and associated assessment methods. Details of both operational and learning outcome assessment are presented below.

Operational Outcomes

The SCEIO director will put into place a set of protocols to track progress toward project goals as articulated in Section V. Assessment methods include counts and demographic analysis of student participants, tracking of sustainable community engagement opportunities generated by the program, number and type of community and corporate partners, analysis of the number and type of courses infused with sustainable community engagement content, and analysis of formative feedback obtained from QEP participants (e.g., training workshop attendees, students engaged in QEP awareness activities, etc.). The SCEIO, with support from Institute communications, will produce an annual report, disseminated to the Georgia Tech campus community, that details QEP activities, progress made in implementing the various programming elements of the QEP, achievement of articulated numerical targets, results of assessment activities, improvements made as a result of assessment activities, and future expectations. As part of these reports, the SCEIO director will partner with the Office of Assessment to perform fidelity of implementation analysis. This process will document the ways in which the QEP is being built and will identify and analyze any gaps between design and implementation. Some deviations from the plan will be intentional and beneficial, while others may not be. The annual report will serve as a key communication tool to campus constituencies as well as an opportunity for QEP stakeholders to reflect on project activities, goals, and formative assessment feedback.

Student Learning Outcomes

Specific assessment methods associated with each of the QEP goals are shown in Table 4. Details of these methods are described below.

Rubric Reviews

Rubrics will be created to judge student attainment of several key learning outcomes. These rubrics will be tailored to fit the specific artifacts produced by students as they move through their curricular and co-curricular experiences. We are particularly interested in assessing student reflections after co-curricular activities (co-ops and internships), capstone projects, and culminating events in the Innovating for Sustainability and Public Service pathways. Rubric development will be informed by existing "good practice" tools, such as the AAC&U VALUE rubric for Civic Engagement (https://www.aacu.org/value/rubrics). Additional research into the applicability and practicality of using rubrics to evaluate sustainability outcomes in engineering capstones has been performed at Georgia Tech (Watson et. al., 2013). This pioneering work will inform our approach to assessment of student learning outcomes associated with capstone artifacts.

THE SUSTAINABLE COMMUNITIES EDUCATIONAL INITIATIVES OFFICE WILL MAINTAIN STRONG TIES TO EACH OF THE SIX COLLEGES.

Student Service

Beliefs, Events, and Values Inventory (BEVI)

The Beliefs, Events, and Values Inventory (BEVI) is a complex, psychometrically reliable, and valid instrument (Hayes, et. al., 1999, Isley, et. al., 1999, Patel, 2008, Shealy, 2005) designed to "explain the processes by which beliefs, values, and 'worldviews' are acquired and maintained, why their alteration is typically resisted, and how and under what circumstances their modification occurs" (Shealy, 2004, p. 1075). The instrument contains 185 Likert-scale items that can be completed by participants in 35-45 minutes. BEVI results are organized around 18 scales that describe an individual's beliefs and values about a variety of themes, including ethnocentrism, religious tolerance, critical thinking, emotional attunement, ecological resonance, and global engagement. The BEVI offers a powerful tool to discover the ways in which student values and beliefs change over the course of their undergraduate studies, and also to discover ex post which students are most likely to benefit from sustainability and community engagement experiences and what factors mediate student learning and development associated with QEP-related activities. The BEVI has been used by many higher education institutions to evaluate the impact of international education opportunities (Sternberger, et. al., 2009), and some research using the BEVI has been conducted to measure and predict student attitudes regarding environmentalism (Patel, Shealy, & De Michele, 2007).

As a key component of the QEP evaluation plan (particularly Student Learning Outcome [SLO] 9), we propose a longitudinal cohort study in which we will administer the BEVI to the incoming class of freshmen at orientation sessions. This data collection will serve as a baseline against which we can measure change in beliefs and values over time. We will track students as they move through the sustainability/community engagement curriculum, administering the BEVI after key curricular and co-curricular activities (e.g., after completing foundational coursework in sustainability, after a service learning internship, at graduation). By collecting a large pool of baseline data, we will have the flexibility to design appropriate representative control groups against which we can compare the development of students engaged in various capacities with the QEP curriculum to those who are not engaged. Thus, for example, we can compare students who complete only the foundational courses to those who also participate in a service learning internship or those who pursue an innovation pathway in sustainability. The broad-based longitudinal design envisioned here might also permit Georgia Tech to assess other forms of co-curricular programming (such as leadership development and international education). While this is beyond the scope of the proposed QEP, it provides an exciting avenue of assessment for the campus.

Focus Groups

Focus groups provide a valuable avenue of formative (and in some cases summative) assessment from those students impacted by the QEP. Focus group results will be shared with appropriate stakeholders and used to confirm achievement of both operational and student learning outcomes.

We anticipate utilizing focus groups in several situations:

- Student feedback regarding awareness activities (QEP Goal 1)—e.g. Freshman Camp, Project One, enrollment communications;
- Student feedback on the new foundational courses (QEP Goal 2);
- Student feedback on co-curricular experiences (QEP Goal 3)—e.g. SC internships;
- Community leader/liaison feedback on co-curricular experiences (QEP Goal 3);
- Student and faculty feedback on deep learning experiences (QEP Goal 4)—e.g. Vertically Integrated Projects, capstone modifications;

Surveys

The evaluation plan includes the creation of special-purpose surveys to assess operational and student learning outcomes as well as extant surveys such as the Georgia Tech Course-Instructor Opinion Survey (CIOS), exit survey, the alumni survey, and the National Survey of Student Engagement. We anticipate relying on the CIOS end-of-course survey to obtain feedback from students on the foundational courses as well as on the modified courses infused with sustainability and community engagement content. Faculty receiving course development grants will be expected to include a set of questions in their end-of-course surveys that address the degree to which students achieved desired QEP learning outcomes (QEP Goal 2).

Surveys will be utilized in awareness activities (QEP Goal 1) and in deep learning experiences such as the Vertically Integrated Projects (QEP Goal 4), to determine if programming is having the desired effect of raising awareness of sustainability and community engagement opportunities available to them at Georgia Tech and instilling specific skills (e.g., SLO 7 and SLO 8). Surveys will also be conducted with students at the end of co-op/internship experiences to determine the degree to which participants are connecting concepts of sustainability and community engagement to their intended profession (QEP Goal 3: SLO 5 and SLO 6). In addition, current surveys of co-op and internship supervisors will be modified to include items relevant

Table 4: Assessment Logic Model

BUILD STUDENT AWARENESS

Program Activities	Operational Outcomes	Assessment Methods	Student Learning Outcomes	Assessment Methods
• Freshman camp • Project One/GT 1000 • Prospective, New Student and Parent Communication • Support student organizations • Organize events that promote and celebrate sustainable community efforts	• Develop freshman camp • Infuse Project One/ GT 1000 courses with sustainable communities content • Support student organizations that focus on sustainable communities • Organize events that promote and celebrate sustainable community efforts • Students will manifest awareness of QEP goals and engagement opportunities	• Counts and descriptions of campus events and supported student activities related to sustainable communities • Registration and student participation counts in awareness activities by semester • Post-experience surveys and participant focus groups (Project One/Freshman Camp) • Tracking of subsequent student enrollment in foundational courses • GT Brand Study: long-term impact of QEP reflected in GT brand/reputation among various external stakeholders (e.g. prospective students/parents, community partners, employers)	• N/A	• N/A

DEVELOP KNOWLEDGE AND SKILLS

Program Activities	Operational Outcomes	Assessment Methods	Student Learning Outcomes	Assessment Methods
• New course in Foundations of Sustainability • New course in Community Engagement Methods • Infusion in freshman courses • New/refreshed courses with Sustainable Communities content	• Develop new sophomore courses in sustainability and community engagement • Infuse Sustainable Communities content into freshman courses • Develop faculty course development incentives to support modification of existing courses to include SC content	• Counts of courses impacted by initiative; descriptions of ways in which content infused by faculty • Tracking of faculty participation in course development grants • Progress reports from faculty participating in course development incentives • Feedback from students, faculty and staff participants in foundational courses and in course incentive program (surveys/focus groups)	**Students will:** • Identify relationships among ecological, social and economic systems [SLO 1] • Describe how sustainability and community engagement relates to their civic lives and values and how their actions impact issues of sustainability [SLO 2] • Develop the skills necessary to work in a community different than one's own, in cooperative and diverse teams, with appreciation for varied cultural and life circumstances [SLO 3] • Analyze the impact of choices on different constituencies, entities, and at different scales, including communities and the planet [SLO 4]	• Rubric review of student artifacts from sustainability/ community engagement courses (student reflections, project reports, etc.) • Direct measures of student performance on course assignments (e.g. tests, papers, etc.) • Course evaluations by students

Table continued on next page.

Table 4: Assessment Logic Model

CONNECT TO PRACTICE

Program Activities	Operational Outcomes	Assessment Methods	Student Learning Outcomes	Assessment Methods
• Co-op • Internship • 1-credit guided seminar	• Expand number of SC co-op and internship opportunities available to students • Create 1-credit guided seminar	• Number of students engaged in SC based co-op or internship experiences and 1-credit guided seminars • Number and breadth of corporate and community partnership opportunities	**Students will:** • Describe how sustainability relates to their professional practice [SLO 5] • Describe the social and cultural impact of their professional practice [SLO 6]	• Rubric review of student reflections after co-curricular experiences (e.g. AAC&U VALUE Rubric for Civic Engagement) • Employer feedback (co-op/internships) • Feedback from students (surveys and focus groups)

STRUCTURE DEEP LEARNING EXPERIENCES

Program Activities	Operational Outcomes	Assessment Methods	Student Learning Outcomes	Assessment Methods
• New and Modified Capstone Courses • Vertically Integrated Projects (VIP) • Innovating for Sustainability Pathway • Public Service Pathway	• Develop new capstones (or modify existing ones) to incorporate SC activities • Increase number of VIPs with a sustainable community relationship • Create curricular pathway for students to pursue public service and innovating for sustainability activities • Grow the opportunity for students to publicly showcase their work related to sustainable communities	• Number and breadth of new and modified capstones • Number and descriptions of VIPs engaged in relevant SC challenges • Progress reports on curriculum pathway design	**Students will:** • Create and evaluate approaches to sustainability challenges in the context of community-level needs [SLO 7] • Communicate effectively with diverse audiences [SLO 8]	• Rubric review of student artifacts in capstone, VIP, Sustainability, and Public Service Pathways • Surveys and focus groups with student participants and community partners • Feedback from judges at Capstone Expo, and other public events

Table 4: Assessment Logic Model

BUILD LONG-LASTING VALUES AND BELIEFS

Program Activities	Operational Outcomes	Assessment Methods	Student Learning Outcomes	Assessment Methods
• N/A	• N/A	• N/A	**Students will:** • Develop and manifest personal values and beliefs consistent with their roles as responsible members of local, national, international or professional communities [SLO 9]	• Beliefs, Events, and Values Inventory (BEVI): Longitudinal design (Freshman-to-Senior) involving several QEP cohorts and control groups. • Exit Surveys; alumni surveys; NSSE

CREATE SUPPORTING INSTITUTIONAL INFRASTRUCTURE

Program Activities	Operational Outcomes	Assessment Methods	Student Learning Outcomes	Assessment Methods
• N/A	• Develop and maintain QEP-focused partnerships • Create workshops and a pedagogical material repository • Develop an IT infrastructure for partner/project/faculty/ student matchmaking and pathway tracking • Develop and execute a marketing and communication plan • Train academic advisors and career services staff to guide students in SC pathway selection and career opportunities	• Annual progress reports detailing efforts and achievements • Post-workshop surveys to provide formative feedback on training activities for faculty and academic / career advisors	• N/A	• N/A

to these learning outcomes, and these employers will be solicited for formative feedback on ways Georgia Tech can expand internship opportunities in the area of sustainable communities.

Finally, surveys such as the exit survey (administered near graduation) and periodic surveys like the National Survey of Student Engagement (NSSE, administered every three years to first-year students and seniors) will serve to measure changes in institutional culture over time. For example, we anticipate that the percentage of students who report participating in community-based projects and the amount of time students report doing community service or volunteer work will increase from the 2014 to the 2017 iteration of the NSSE. We also wish to see the increases in the percentage of students who report that their courses often connect learning to societal problems or issues (another item measured by NSSE). Over the long-term (and outside the scope of the immediate QEP), we anticipate Georgia Tech alumni to manifest an increased understanding of the environmental, social and cultural impact of their professional practice (SLO 5 and SLO 6).

Table 5: Assessment Activity Timetable

QEP ASSESSMENT AND EVALUATION							
Activity/Task	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**Responsible**
Administration of BEVI							
1. BEVI Administrator training							OA
2. Baseline cohort (freshmen) BEVI data collection							OA
3. T2 testing on appropriate QEP Cohorts (e.g. post service experiences)							OA/Faculty/ VPUE
4. T3 Testing on appropriate QEP cohorts testing and control groups (at graduation)							OA
5. Formative feedback to QEP managers							OA
6. Summative feedback to Internal/ External Stakeholders							
Rubric Development and Administration							
1. Develop/refine rubrics for S/CE foundational courses							OA/SCEIO/ Faculty
2. Develop/refine rubrics for capstones and culminating pathway experiences							OA/SCEIO/ Faculty
3. Formative feedback to QEP managers							OA
4. Summative feedback to Internal/ External Stakeholders							OA

Table 5: Assessment Activity Timetable							
QEP ASSESSMENT AND EVALUATION							
Activity/Task	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**Responsible**
Rubric Development and Administration							
1. Develop/refine rubrics for S/CE foundational courses							OA/SCEIO/ Faculty
2. Develop/refine rubrics for capstones and culminating pathway experiences							OA/SCEIO/ Faculty
3. Formative feedback to QEP managers							OA
4. Summative feedback to Internal/ External Stakeholders							OA
Survey Development and Administration							
1. End of course evaluations							OA
2. GT Exit Surveys							OA
3. NSSE Administration							OA
4. Alumni Survey							OA
5. GT Brand/Reputation Survey							IC
6. Post-service experience survey							OA/SCEIO
7. Formative feedback to QEP managers							OA
8. Summative feedback to Internal/ External Stakeholders							OA
Focus Group Development and Administration							
1. Freshman Camp focus group							OA/SCEIO
2. End of course focus groups (foundational courses)							OA/ SCEIO
3. Co-curricular experiences focus group							OA/SCEIO
4. Deep experience focus groups (e.g. Capstones, VIP, S/CE pathway culminations)							OA/SCEIO
5. Formative feedback to QEP managers							OA
6. Summative feedback to Internal/ External Stakeholders							OA

IX. RESOURCES

The Institute is committed to supporting the Serve•Learn•Sustain Plan. From July 1, 2015, to December 31, 2020, (the preparation period followed by the five-year QEP running from January 1, 2016, to December 31, 2020), Georgia Tech will commit $5,885,542 of new fiscal resources (excluding fringe) in addition to existing resources that will be leveraged. At a steady state, approximately $1M in recurring funds will be devoted to the QEP (excluding fringe).

The budget in Table 6 outlines new funding that the Institute will allocate to the Serve•Learn•Sustain Plan on a fiscal year basis (FY 16-21). The new funding will be used to hire new personnel; support workshops and faculty, course, and partnership development activities; develop the required IT infrastructure; support the time and effort associated with program faculty in leadership positions; and develop and implement a communications plan to promote the program to our students and community. The Institute Executive Leadership has approved the stated budget and strongly commits to providing the necessary resources and priority to the program (Appendix V).

Salient Components

Awareness

In addition to planned programmatic activities such as Freshman Camp and QEP events managed by the SCEIO, seed funds will be made available for student- or staff-led initiatives/campus events supporting the QEP.

Educational Programming

Resources will be available for faculty members to create new courses and Vertically Integrated Projects in the Serve•Learn•Sustain theme and infuse sustainable communities-focused material within their courses. These funds will provide salary support and resource materials needed to explore and develop new curricula (workshops, travel, faculty course development funds, online module/course development costs).

Infrastructure Development

A cornerstone of the new course development and infusion effort and effective partnership management will be project clearinghouse development and maintenance. This clearinghouse will allow potential partners to submit projects or inquiries and allow students and faculty to search for projects. Other IT projects will include Web development and maintenance, SC-course tagging in the online course catalogue, SC-opportunity tagging in Georgia Tech's searchable career database, CareerBuzz, and the development of an interface for students and career advisors to easily search for SC-tagged courses and opportunities. To support marketing and communications, funds will be provided for print materials, video production, and other non-print media communications, and outreach via external communication channels.

Assessment

Part of the duties of the director of the Office of Assessment will be reassigned so that they can assume duties with regard to the QEP, as outlined in the Assessment section. The director will be assisted by an hourly graduate student assistant in rubric development, data collection, and analysis. Survey and assessment-related material and supply costs are also included in this cost category.

Plan Management

Community partnerships are foundational to the programs of Serve•Learn•Sustain. In addition to the director, the program manager, and the administrative assistant, a team of partnership development professionals will collaborate with related campus units to foster, forge, and grow partnerships with local community and non-governmental organizations, corporations, and government agencies. Student assistants will provide support to the management team in areas such as communication and marketing, website maintenance, and data analysis.

Faculty Leadership

The development of the Serve•Learn•Sustain Plan has been led by senior faculty members from the College of Computing and Scheller College of Business, who will continue to serve as executive co-directors. In 2018, the QEP will officially transition to the Office of the VPUE and the executive co-directors will decrease their time commitment. To ensure cohesiveness with Georgia Tech's largest academic unit, the College of Engineering, an engineering faculty member will work closely with the executive co-directors. Faculty liaisons in each of the other three colleges will round out the cross-disciplinary leadership team.

The Institute aims to leverage existing resources and organizational assets to complement QEP budget allocation outlined in Table 6 to the extent possible and whenever appropriate. The leveraging will involve allocating

TABLE 6: Serve•Learn•Sustain Budget Allocation						
FISCAL YEAR	**FY16**	**FY17**	**FY18**	**FY19**	**FY20**	**FY21**
Building Student Awareness						
Freshman Camp	$7,000	$7,000	$10,000	$10,000	$10,000	$10,000
Seed funding for student orgs/staff	$30,000	$30,000	$30,000	$20,000	$20,000	$10,000
Events	$20,000	$20,000	$20,000	$20,000	$20,000	$10,000
Subtotal	**$57,000**	**$57,000**	**$60,000**	**$50,000**	**$50,000**	**$30,000**
Educational Programming to Develop Knowledge and Skills, Connect to Practice and Create Deep Learning Experiences						
Community Engagement Methods (unit and faculty development support)	$54,000	$28,000	$28,000	$42,000	$42,000	$28,000
Foundations of Sustainability (unit and faculty development support)	$54,000	$28,000	$42,000	$42,000	$42,000	$14,000
GTA support (1/section)	$20,000	$40,000	$50,000	$60,000	$60,000	$30,000
Transitioning selected Sophomore course material to online medium			$30,000	$30,000	$20,000	
Course adaptations/ 1-credit add-ons	$9,000	$21,000	$21,000	$15,000	$12,000	$6,000
New service learning courses	$24,000	$48,000	$48,000	$36,000	$24,000	$12,000
Support for 8 VIPs	$20,000	$40,000	$40,000	$40,000	$40,000	$20,000
Service Learning Workshops	$5,000	$5,000	$5,000	$5,000	$5,000	$2,500
Subtotal	**$186,000**	**$210,000**	**$264,000**	**$270,000**	**$245,000**	**$112,500**
Create Supporting Institutional Infrastructure						
IT Cost – Personnel	$110,000	$102,550	$67,632	$46,440	$47,834	$24,635
Communications and Marketing	$50,000	$50,000	$40,000	$30,000	$30,000	$15,000
Travel (partnership directors, faculty directors, SCEIO Director)	$20,000	$20,000	$20,000	$20,000	$20,000	$10,000
Travel (faculty, staff and students)	$20,000	$20,000	$20,000	$20,000	$20,000	$10,000
Subtotal	**$200,000**	**$192,550**	**$147,632**	**$116,440**	**$117,834**	**$59,635**

Table continued on next page.

TABLE 6: Serve•Learn•Sustain Budget Allocation						
FISCAL YEAR	**FY16**	**FY17**	**FY18**	**FY19**	**FY20**	**FY21**
Serve•Learn•Sustain Plan Assessment						
Assessment – Release Time	$57,084	$58,797	$36,336	$37,426	$51,398	$33,088
Assessment – Graduate Assistant	$10,125	$10,125	$10,125	$10,125	$10,125	$4,950
Assessment – Materials and Supplies	$5,000	$7,500	$10,500	$12,000	$12,500	$7,750
Subtotal	**$72,209**	**$76,422**	**$56,961**	**$59,551**	**$74,023**	**$45,788**
Plan Management and Faculty Leadership						
Director	$110,000	$113,300	$116,699	$120,200	$123,806	$63,760
Program Manager	$60,000	$61,800	$63,654	$65,563	$67,530	$34,778
Administrative Assistant	$40,000	$41,200	$42,436	$43,709	$45,020	$23,185
Partnership Development Team	$120,000	$180,000	$185,400	$190,962	$196,691	$101,296
Student Assistants	$21,600	$21,600	$21,600	$21,600	$21,600	$10,800
Release time/summer support for faculty leadership	$146,171	$169,676	$174,316	$78,363	$80,264	$96,414
Subtotal	**$497,771**	**$587,576**	**$604,105**	**$520,397**	**$534,911**	**$330,233**
Total	**$1,012,980**	**$1,123,548**	**$1,132,698**	**$1,016,388**	**$1,021,768**	**$578,156**

appropriate personnel, the realignment of priorities, the assignment of space, and the redirection of support services, as well as redirecting existing funds from areas of synergy with the activities and ideals of the program. Thus, the budget allocation presented above constitutes only a portion of the total portfolio of assets, human capital, and preexisting funding that will be applied to the operational components of the program, as also demonstrated by the list of collaborators in Table 1. In addition to what is allocated above, the Office of Development will collaborate with the SCEIO and the Executive Committee to identify gift and sponsorship opportunities to further increase the impact of the Serve•Learn•Sustain Plan.

Like many state institutions, George Tech is restricted to year-to-year budget cycles of requests and commitments. The Institute leadership, however, recognizes the need for multi-year planning to get a program started and to reach a steady-state of success. The multi-year needs of Serve•Learn•Sustain will be noted and afforded a high priority in future budget cycles. Further, through program assessment, programmatic elements may shift, increase, or decrease, impacting the stated budget projections. The multi-year budget will be reassessed annually during the Institute's budget process. Year-to-year increases will be allocated following the review to ensure consistency with goals and responsiveness to assessment results and/or shifting program priorities.

As it has done for more than 125 years, Georgia Tech embraces with enthusiasm the challenges and opportunities that shape tomorrow's environment, citizens, and leaders. The Serve•Learn•Sustain Plan follows in that tradition and has the Institute's full confidence and support.

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XI. APPENDICES

Appendix I: Call for Concept Papers - SACSCOC Quality Enhancement Plan for Georgia Tech

Concept papers are invited that will help Georgia Tech define its 2015 Quality Enhancement Plan (QEP). The QEP will be a major component in our submission for the reaffirmation of accreditation by SACSCOC (The Southern Association of Colleges and Schools Commission on Colleges), a process we are required to engage in every 10 years.

What is a QEP?

The Quality Enhancement Plan is a plan to enhance the quality of student learning outcomes and/or the environment supporting student learning. It should have a wide-ranging effect on students on campus. It must originate from a process that involves many campus constituencies, and it should be directly and traceably related to the strategic planning of the institution. It will not be an unfunded mandate, and once selected will result in a detailed implementation plan and budget for 5-10 years of support. The full QEP will be documented according to the SACSCOC manual during 2014. Our last QEP was a combination of the International Plan and the Undergraduate Research Plan.

How Does This Relate to the Strategic Plan?

During 2009-2012, Georgia Tech developed a **25-year strategic plan** in a process that involved hundreds of campus faculty, staff, and students. Several themes and projects emerged that directly relate to student education: reinvigorating undergraduate education (e.g., changes to degree requirements or the calendar to enhance curricular flexibility – such as the X-Degree – and the quality of student/faculty interaction); design and innovation (e.g., integration of design and engineering, authentic design projects, encouraging entrepreneurship and innovation among students, GT Arts initiative); service learning and community engagement (e.g., humanitarian design, community-based curricular projects); technology and society (e.g., technology and law, technology and policy, ethics throughout the curriculum, globally engaged citizenship). We expect concept papers to describe elaborations of one of these ideas or concrete and creative syntheses of elements across several. We do NOT invite brand new ideas or concepts that are only loosely connected to these themes.

What Process Will Be Followed?

Concept papers should be developed by interdisciplinary teams of faculty from at least three colleges. Drafts are welcome for comment at any time up to the final deadline of December 6, 2013. A group appointed by the provost (drawn from the Strategic Planning Advisory Group and augmented as required by faculty across campus) will review concept papers and invite further iteration and synthesis during the early spring of 2014. The process to be followed will **NOT** be a competitive review of proposals that necessarily leads to the selection of one submission and the rejection of the rest. The intention is to select, refine, and synthesize a concrete plan by May 2014 that has very broad appeal and agreement across the campus. The detailed implementation plan and budget for the QEP will be elaborated during the summer and fall of 2014, leading to its submission to SACSCOC in January 2015, as documented in the **SACSCOC handbook** (PDF: pp. 39-50). SACSCOC will evaluate our QEP against a published **rubric (PDF)**.

What Is a QEP Concept Paper?

Authorship:

Names of at least five academic faculty from more than two colleges who are committed to developing the idea further.

Format:

A linear document. No more than five pages.

Contents:

The concept paper should present a concrete idea meeting the above criteria. It is especially important to provide a clear justification in terms of student learning and/or the learning environment that includes a needs assessment based on empirical data. The concept must be directly related to the strategic plan and that relationship clearly described. The concept paper should outline measurable outcomes, an assessment plan, a timeline for the first five years, and a rough budget.

Submissions & Deadline:

Concept papers should be addressed to Catherine Murray-Rust (catherine.murray-rust@library.gatech.edu) on or before **December 6.** You are encouraged to submit drafts before then for comment. Any questions should be addressed to:

- **Colin Potts**
  colin.potts@gatech.edu
- Donna Llewellyn
  donna.llewellyn@cetl.gatech.edu
- Andy Smith
  anderson.smith@carnegie.gatech.edu

Appendix II. Composition of the QEP Selection Committee	
NAME	**TITLE, SCHOOL/ADMINISTRATIVE UNIT**
Joseph R. Bankoff	Nunn School Chair, Sam Nunn School of International Affairs
Vicki Birchfield	Associate Professor, Sam Nunn School of International Affairs
Victor Breedveld	Associate Professor, School of Chemical and Biomolecular Engineering
Bettina Cothran	Professor, School of Modern Languages
Lori Critz	Faculty Engagement Head and Subject Librarian, Library
Shatakshee Dhongde	Assistant Professor, School of Economics
Lynn Durham (Observer; Executive Leadership Team Liaison)	Assistant Vice President and Chief of Staff, Office of the President
Edwin Greco	Academic Professional, School of Physics
Mark Hay	Regents' Professor and Teasley Chair, School of Biology
Laurence Jacobs	Associate Dean for Academic Affairs, College of Engineering, and Professor, School of Civil and Environmental Engineering
Christopher Jones	Executive Vice President for Research and Professor, School of Chemical and Biomolecular Engineering
Doron Lubinsky	Professor, School of Mathematics
Nick Picon	Undergraduate, SGA President
Carrie Shepler	Senior Academic Professional, School of Chemistry
John Stein	Associate Vice President of Student Affairs, and Dean of Students

Appendix III. QEP Selection Rubric

EVALUATION ELEMENTS	RATING (0-4)
Scope	
Is the topic significant to Georgia Tech and would it result in a major enhancement to student learning?	
Is the topic of the project focused enough to provide a manageable framework for development and implementation?	
Does the project address a specific problem or area?	
Learning Outcomes	
Does the project specify realistic, measurable outcomes?	
Did the team give an idea of how the outcomes will be assessed?	
Implementation	
Did the team give you confidence that they can identify specific actions to be taken and the activities to be implemented to bring the desired enhancement of student learning?	
Timeline	
Do you have confidence that the team could arrive at a realistic timeline for the actions identified?	
Will there be meaningful results to report in the Fifth-Year Interim Report?	
Organization	
Does the team have the foundation for an organizational structure for implementation?	
Is there a clear leader and committed team for implementation?	
Resources	
Does the team have a clear picture of the budget that it will need to be successful?	

Appendix IV: QEP Advisory Committees and their Membership

ACADEMIC ADVISORY COMMITTEE

NAME	TITLE	ACADEMIC UNIT
Michael Best	Associate Professor	International Affairs
Terry C. Blum	Tedd Munchak Chair	Scheller College of Business
Joe Brown	Assistant Professor	Civil and Environmental Engineering
Robert Butera	Professor	Electrical and Computer Engineering
Kim Cobb	Associate Professor	Earth and Atmospheric Sciences
Jonathan Colton	Professor	Mechanical Engineering
Kelly Comfort	Associate Professor	Modern Languages
Sheri Davis-Faulkner	Research Associate II	Ivan Allen College
Lucien Dhooge	Sue and John Staton Professor of Law	Scheller College of Business
Bistra Dilkina	Assistant Professor	Computational Science and Engineering
Carl DiSalvo	Associate Professor	Literature, Media and Communication
Michael Gamble	Associate Professor	Architecture
Mark Guzdial	Professor	Interactive Computing
Mark Hay	Regents' Professor and Teasley Chair	Biology
Sabir Khan	Associate Professor	Architecture
Robert Kirkman	Associate Professor	Public Policy
Jennifer Leavey	Senior Academic Professional	College of Sciences
Wayne Li	Oliver Endowed Professor of Practice	Industrial Design
Tim Lieuwen	Professor	Aerospace Engineering
Wendy Newstetter	Senior Academic Professional	College of Engineering
Thomas Orlando	Professor	Chemistry and Biochemistry
Valerie Thomas	Anderson Interface Associate Professor of Natural Systems	Industrial and Systems Engineering and Public Policy

Appendix IV: QEP Advisory Committees and their Membership

STUDENT ADVISORY COMMITTEE

NAME	MAJOR	LEADERSHIP
Mariam Asad	Digital Media	Bicycle Infrastructure Improvement Committee
Alex Berry	Industrial Engineering	Junior Class President; SGA Cultural/Diversity Chair
Connor Brown	Industrial Engineering	Stamps Scholar
Laura Margaret Burbach	Public Policy	SGA VP of Academic Affairs; Gov/Community Relations Student Assistant
Taylor Durbin	Business Administration	Center for Business Strategies for Sustainability Student Assistant
Parag Gajarawala	MBA	Net Impact Officer
Peter Hylton	City and Regional Planning	
Rachit Kansal	Mechanical Engineering	SGA Sustainability Co-Chair
Yoni Kaplan	Industrial Design	
Namrata Kolla	Earth and Atmospheric Sciences	SGA Sustainability Co-Chair
Kat Maines	City and Regional Planning	
KelliAnn Morrisey	Business Administration	Vice President, Omicron Delta Kappa and Georgia Tech Ambassador
Nagela Nukuna	Industrial Engineering	Student Ambassador, GT Honors Program; OMED Student Ambassador; SGA Elections Chair
Parisa Khanipour Roshan	Human-Centered Computing	
Megna Saha	Biomechanical Engineering	Past FASET Cabinet Member; “Makers Space” Student Working Committee Member
Sid Sinha	Industrial Engineering	Past President, Community Service Council
Supraja Sudharsan	International Affairs	

Appendix IV: QEP Advisory Committees and their Membership

ADMINISTRATIVE ADVISORY COMMITTEE

NAME	TITLE
Suzy Briggs	Director, Business and Research Development
Chris Burke	Director, Community Relations
Rick Clark	Director, Undergraduate Admission
Russ Clark	Senior Research Scientist, Office of Information Technology
Michael Hagearty	Director, Campus Communication and Special Events
Monica Halka	Associate Director, Honors Program
Jennifer Herazy	Assistant Provost for Administration
Amy Henry	Executive Director, Office of International Education
Cynthia Jennings	Assistant Dean/Director of New Student and Sophomore Programs
Paul Kohn	Vice Provost, Enrollment Services
David Leonard	Chief of Operations, Office of Information Technology
Peter Ludovice	Director, Center for Academic Enrichment
Kristi Mehaffey	Academic Professional, Mechanical Engineering
Caroline Noyes	Deputy Director, Center for the Enhancement of Teaching and Learning
Sarah Perkins	Civic Engagement Coordinator, Office of Leadership and Civic Engagement
Reta Pikowsky	Registrar
Leslie Sharp	Associate Vice Provost, Graduate Education and Faculty Affairs
Gail Spatt	Program Manager, Office of the Executive Vice President for Research
Paul Strouts	Vice President, Campus Services
Michelle Tullier	Executive Director, Center for Career Discovery and Development

Appendix V: Budget Allocation

Georgia Institute of Technology

Office of the Vice Provost for Undergraduate Education

Date: December 16, 2014

To: Rafael L. Bras, Provost and Executive Vice President for Academic Affairs

From: Colin Potts, Vice Provost for Undergraduate Education

Copy: Steven Swant, Jim Kirk, Robert Foy, Steven Girardot, Gerri Narramore, Jennifer Herazy

Subject: Program Budget for Georgia Tech's Quality Enhancement Plan (Serve•Learn•Sustain).

As part of the SACSCOC reaffirmation process, Georgia Tech has developed a Quality Enhancement Plan (QEP) titled *Serve•Learn•Sustain*. The purpose of this memo is to formalize the mid-year request for FY15 funds we discussed previously and to provide a projection of the funding that will be needed in the following years to bring the program to a successful steady-state. The executive co-directors and I have developed a budget estimate for the current fiscal year as well as a projection of resources for the remaining five years of the program's implementation (over FY16 to FY21) and full institutionalization.

The attached budget outlines the funding requested to support new personnel; fund the time and effort associated with program faculty in leadership positions; implement communication and assessment plans; and provide resources and materials, including workshops, course development, and events, to support faculty, students, and staff who will be involved in the plan. This operational budget presents additional or redirected funding that will be dedicated as needed and planned for the program, but it is not reflective of the total portfolio of assets, human capital, and preexisting funding that will be applied to the operational components of the program.

By evaluating and assessing the plan during its evolution, programmatic elements may shift, increase, or decrease impacting the stated budget projections. For this reason, and the need to align with the annual Institute budget process, the budget will be reassessed annually by the QEP Executive Committee and incorporated as a line item in the VPUE unit request.

Thank you for your consideration of this request.

Approved by Rafael L. Bras, December 17, 2014

Office of the Vice Provost for Undergraduate Education
A. French Building, Suite 111
237 Uncle Heinie Way
Atlanta, Georgia 30332-0740 U.S.A.
PHONE 404.894.5054 FAX 404.385.0606

XII.

JOB DESCRIPTIONS

DIRECTOR
Sustainable Communities Educational Initiatives Office
(Academic Professional or Senior Academic Professional)

PARTNERSHIP DEVELOPMENT DIRECTOR
Sustainable Communities Educational Initiatives Office

PROGRAM MANAGER
Sustainable Communities Educational Initiatives Office

DIRECTOR

Sustainable Communities Educational Initiatives Office

(Academic Professional or Senior Academic Professional)

JOB PURPOSE

The director will have primary responsibility for the implementation of the Serve•Learn•Sustain Quality Enhancement Plan (QEP). The level of the position (academic professional or senior academic professional) will be determined by the selected candidate's experience and academic qualifications.

RESPONSIBILITIES

Initially reporting to the QEP Executive Co-Directors and with an operational reporting line to the Vice Provost for Undergraduate Education (VPUE), the Director will serve as a member of the Vice Provost's leadership team and will have the responsibility to:

- Coordinate the campus-wide implementation of the Serve•Learn•Sustain Plan as outlined in Georgia Tech's Quality Enhancement Plan (QEP), including ongoing communication, marketing, assessment and coordination with the faculty and various administrative units involved in Serve•Learn•Sustain infrastructure, planning, and execution;
- Supervise professional and administrative staff, including a Program Manager, a Partnership Development Director, and an Administrative Assistant;
- Develop and implement a set of protocols and metrics to track progress of the Plan, as outlined in the QEP document;
- Prepare reports and presentations, including an annual report, detailing Serve•Learn•Sustain activities, implementation progress, achievement of numerical targets, results of assessment activities and future goals and expectations;
- Work cohesively with the Executive Committee, comprised of Executive Co-Directors, the Vice Provost for Undergraduate Education, the Assistant Provost for Administration (direct report of the Provost), the SACSCOC Liaison, and the Director of the Office of Assessment, to plan and implement Serve•Learn•Sustain activities;
- Convene working groups across different QEP collaborators as needed to ensure maximum effectiveness of Serve•Learn•Sustain Plan implementation;
- Convene semi-annual meetings of the Academic Advisory Council and the Student Advisory Council to facilitate ongoing communication and feedback regarding Serve•Learn•Sustain related activities and programs;
- Assist in the development of an External Advisory Board and coordinate annual meetings of the Board in conjunction with the Executive Committee;
- Coordinate with the AVPUE on financial matters related to Serve•Learn•Sustain development and implementation, and ongoing activities and programs;
- As time and scheduling permits, and based on the selected candidate's academic qualifications, may teach an undergraduate course in an area related to the Serve•Learn•Sustain Plan;
- Other duties as requested in support of the Serve•Learn•Sustain Plan.

REQUIRED CREDENTIALS AND EXPERIENCE

The minimum requirements for this position include:

1) an earned doctorate degree;
2) demonstrated project management experience;
3) at least 5 years of professional experience in a university or related setting;
4) strong written and verbal communication skills;
5) evidence of the ability to collaborate effectively with faculty, students, and administrators.

PREFERRED CREDENTIALS AND EXPERIENCE

Preferred qualifications include:

1) an earned doctorate degree in a discipline represented at Georgia Tech;
2) professional background in sustainability education and service learning/community engagement programs;
3) experience with budget management and supervision and development of professional staff;
4) undergraduate teaching experience and ability to teach an undergraduate course in one of Georgia Tech's colleges;
5) experience with program evaluation and assessment.

PARTNERSHIP DEVELOPMENT DIRECTOR
Sustainable Communities Educational Initiatives Office

JOB PURPOSE
The Partnership Development director will have primary responsibility for educational partnership development and management related to the Serve•Learn•Sustain Quality Enhancement Plan.

RESPONSIBILITIES
Reporting to the Director, Sustainable Communities Educational Initiatives Office, the Partnership Development director will have the responsibility to:

- Coordinate the Partnership Development Team activities, including project curation and follow-up;
- Assist with development of a project database and assume primary responsibility for maintaining the database;
- Collaborate with Institute Communications, Student Affairs, Campus Services, Enrollment Services, and other campus partners to create visibility for Serve•Learn•Sustain projects among various groups including students, staff and faculty;
- Coordinate with the Center for Career Discovery and Development to source Serve•Learn•Sustain themed internships and co-ops with external corporations, communities and government organizations;
- Co-supervise two employees, one in conjunction with the Westside Community Alliance and the other in conjunction with the Center for Business Strategies for Sustainability;
- Perform other related duties as requested.

PREFERRED CREDENTIALS AND EXPERIENCE
The minimum requirements for this position include:

1) master's degree in a discipline represented at Georgia Tech or other appropriate discipline;

2) at least 3 years of professional experience working in a research university setting;

3) evidence of successful accomplishments in working with multi-stakeholder groups spanning civic organizations, non-profits, government agencies and industry;

4) knowledge of literature and best practices in sustainability and community engagement;

5) experience with supervision and development of professional staff; and;

6) evidence of the ability to collaborate effectively with faculty, students, and administrators.

PROGRAM MANAGER
Sustainable Communities Educational Initiatives Office

JOB PURPOSE

Oversee administrative, operational and logistical support for the Serve•Learn•Sustain Quality Enhancement Plan, as managed by the SCEIO Director and the Executive Committee. Facilitate the various actions required to successfully offer and conduct Serve•Learn•Sustain related programs. Responsible for setting employee goals, assessing performance and providing feedback and making pay recommendations.

KEY RESPONSIBILITIES

Reporting to the Director, Sustainable Communities Educational Initiatives Office, the Program Manager duties may include but are not limited to:

- Coordinate day-to-day operational aspects of the Serve•Learn•Sustain Plan and Sustainable Communities Educational Initiatives Office;
- Review program processes and procedures, and recommend modifications as appropriate;
- Manage all Serve•Learn•Sustain related communication and marketing, including print, digital and social media;
- Coordinate events, meetings and workshops including planning of QEP-related Committee, Council and Board meetings, as directed by the SCEIO director;
- Prepare reports related to program outcomes;
- Administer new pathways and programs as well as coordinate other curricular aspects of the plan (e.g. course scheduling and registration, Graduate/Teaching Assistants, permits, etc.);
- Assist with planning and supervision of daily staff work activities;
- Supervise and manage assignments of undergraduate student assistants;
- Perform other related duties as assigned.

MINIMUM CREDENTIALS AND EXPERIENCE

The minimum requirements for this position include:

1) bachelor's degree in Business Management, Education or a related field;

2) at least 3 years of professional, job related experience;

3) professional background in program management and/or educational administration;

4) experience with customer service;

5) strong verbal and written communication skills;

6) organization, multi-tasking, prioritization, and attention to detail;

7) use of basic and specialized computer applications.

Georgia Institute of Technology

Quality Enhancement Plan | Serve•Learn•Sustain