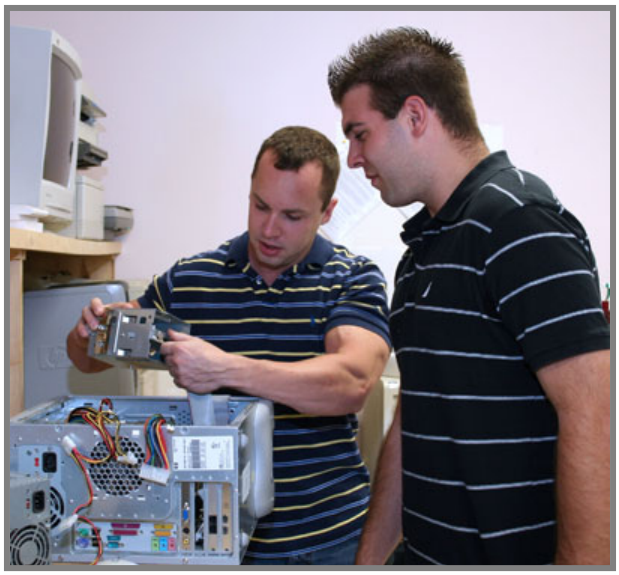

SPARTA*

Student **P**artners: **A**ble & **R**esourceful **T**echnology **A**ssistance

Introduction and Overview

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Information Technology (IT) education is rapidly emerging as a field of study distinct from Computer Science (CS) in its focus. CS is concerned with the representation of information - the technical "bits and bytes" of programming languages, operating systems and applications development. IT is focused on the information itself and the human factor – how computing can help people access and use information.

Until the late 1980s, computers and computer science were the domain of an elite group of academics – mathematicians and engineers primarily focused on the military applications of computing. Computing was present in the civilian sectors only in the largest enterprises due to the complexity and expense of mainframe computing systems. As Ken Olson, chairman and founder was of Digital Equipment famously said in 1977, "There is no reason anyone would want a computer in their home." Computers of that era were so complicated and unfriendly that it was hard to imagine computers being part of everyday life for most Americans.

The computing interface remained unsuitable for wide-spread adoption in the general population until the emergence of the Windows and Macintosh operating systems in the early 90s. These "personal computer" systems were the first to consider the needs of the user in any serious way. The relative ease of use of PCs coupled with the rise of the internet has made the computer an information appliance as common as the telephone in American homes and businesses. Information has grown exponentially[1] as the barriers to electronic access have been lowered.

The information revolution is forcing institutions of higher education to realize that CS education is not adequate to the task of preparing young professionals to understand and meet the information needs of human beings. CS education is focused on computation and the mechanics of producing faster and better computational machines. A CS education emphasizes engineering and mathematical concepts that are ideal for describing the functioning of the machine or the flow of data – not much consideration is given to the needs of the human user or the information contained within the data streams. IT is concerned with the needs of the users and the organization and manipulation of information, making the educational needs of young IT professionals very different from their CS counterparts. Although there is some educational overlap in that both groups of students must acquire a basic understanding of the mechanics of computing, IT majors require additional coursework that explores the human dimensions of information organization and management.

[1] In 2006, the amount of digital information created, captured, and replicated was 1,288 x 1018 bits. In computer parlance, that's 161 exabytes or 161 billion gigabytes … This is about 3 million times the information in all the books ever written.
http://www.preoccupations.org/2007/03/exponential_inf.html

Computer Science education is fairly well-established and standardized at the University level. IT education - with its focus on the human factor - is emerging as a new and separate field of study. A consortium of Universities have joined together in an effort to establish and standardize Information Technology programs under a common branding as 'iSchools".

> "The iSchools are interested in the relationship between information, technology, and people. This is characterized by a commitment to learning and understanding the role of information in human endeavors. The iSchools take it as given that expertise in all forms of information is required for progress in science, business, education, and culture. This expertise must include understanding of the uses and users of information, as well as information technologies and their applications."[2]

In order to acquire the expertise necessary to guide and support the information needs of people and organizations, the IT program of study includes coursework on the organization and management of information, usability and accessibility issues and interface design. Many of these concepts are difficult to grasp without the opportunity to interact with users via experiential learning. Young physicians undergo a clinical internship in order to make real and concrete the abstract medical concepts they have learned in the classroom. In the same way and for the same reasons, a structured internship program must be implemented for IT students that allows them to develop professional maturity through hands-on application of their newly acquired IT knowledge and skills.

A pilot program to provide structured internship opportunities is being proposed at The Florida State University's College of Information (CI). This program, dubbed SPARTA (**S**tudent **P**artners: **A**ble and **R**esourceful **T**echnology **A**ssistance) will be designed to provide structured experiential learning to junior and senior IT majors as part of their program of study. Working in partnership with both for-profit and non-profit entities, students will provide a wide variety of technical services in a leadership role under the supervision of one or more mentors. The program will be designed to provide sustainable and continuous IT services primarily to non-profit entities, though all interested parties will be given consideration as candidates for participation. The program differs from other IT internship programs because SPARTA students provide technical leadership within the non-profit organization, assuming positions of responsibility, autonomy and authority that would not otherwise be available to them in most private sector internship offerings. CI will provide committed faculty mentors that will guide and supervise the internships and ensure that the student has a high-quality learning experience while providing a high-quality technology product to the client sponsor. In addition to faculty mentors, CI brings the organizational resources and clout to the table to develop the SPARTA model and introduce it as a standard to be followed by iSchools nationwide. SPARTA

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http://www.ischools.org/oc/charter.html

is envisioned as a limited-access experiential learning program with rigorous academic standards for admission and participation.

Non-profit entities are SPARTA's primary target client as a synergistic relationship naturally exists between IT students, who are willing to work for relatively low wages in order to gain experience and non-profits, who need IT services but have limited (or no) funding to pay for these services. In lieu of paying for IT services, the non-profits have shown a great willingness to serve as live learning labs where students sometimes make mistakes and to allow students to hold positions of greater responsibility than they might otherwise in a for-profit atmosphere. SPARTA's activities will funded though a combination of a sliding scale fee structure for services based on ability to pay and funding secured through grants and other private funding sources. For-profit entities have a role to play in that they will purchase services from SPARTA at the upper end of the scale, effectively funding the more-needy but less well-off entities at the lower end of the scale.

A community partner has been identified who can provide the infrastructure for the recruitment and matching of local non-profit entities with student workers. Lutheran Social Services (LSS) has partnered with CI since Fall 2007 to develop a Microsoft-certified refurbishing program staffed by students in the CI IT Project and Practicum courses. LSS does not work directly with end-users; instead, it works through agencies to fill requests for technology services, which may be for the agency itself or for a group of end users affiliated with the agency. Donated computers are inspected, refurbished and provided to requesting agencies at no cost. All labor is provided by CI students and the cost of the Microsoft software is currently borne by LSS. LSS currently has several other initiatives in place to support local agencies with donated goods such as furniture, office supplies and other technical assistance. Because of these existing relationships, LSS is already well-positioned and willing to serve as a clearing house for SPARTA-eligible projects. Other key benefits of partnering with LSS include leveraging their established relationships with donors to ensure a steady stream of hardware that can be recycled at a very low cost into the non-profit community as well as providing a single point of contact for both agencies and donors.

An organization's value is directly tied to its ability to organize, manage and use information effectively. Caring for an organization's information is a serious responsibility and one that should not be left solely to inexperienced student workers. For this reason, SPARTA will develop relationships with community-based technical service providers who will provide the hardware and software services and expertise required to maintain and protect an organization's information infrastructure as well as mentoring and supervision of the student workers. Linux Systems Engineers (LSE) has been recruited to participate in SPARTA as the provision source for servers, networking technology and Data/Phone/VOIP services. LSE is led by CTO Andrew McRory, who has been providing computing services to the Tallahassee community since 1995. His expertise in low-cost, high performance Linux systems will allow SPARTA to provide a higher level of service to the SPARTA clients at a much lower cost due to the open source nature of his products and services. This open source expertise will allow SPARTA to offer a full-spectrum of

products and services that not only meet the needs and price points of the agency clients but also expose IT students to a diverse set of computing environments that better prepares them for what they will encounter when they enter the workforce upon graduation.

As SPARTA becomes established and organized, opportunities exist to integrate learning experiences for middle and high school students who are interested in technology careers. For example, students from Godby[3]High School's IT Magnet program could be recruited to work with CI students at LSS. CI students gain valuable management experience while tutoring their younger peers as part of the refurbishing program. Learning through service to the community is an important component of SPARTA and CI students will experience the satisfaction of giving of themselves through mentoring while furthering their practical skills and abilities. This may help set lifetime patterns of giving through service that will continue to have positive repercussions for decades after students have graduated from SPARTA and entered the workforce.

The SPARTA vision is to create a co-operative, community-based model for low-cost, high quality technology services provision primarily to non-profit entitles that allows them to:

- Work productively with people
- Communicate effectively
- Manage information purposefully and
- Apply technology innovatively

[3] http://www.godbyisit.com/

Everyone benefits from SPARTA!