

## **James F. Bowring**

Teaching Statement – May 2006

I enjoy sharing my knowledge and skills with students eager to acquire them, while I also learn from the students. My teaching experience spans my previous career as a general building contractor in training my employees, as a parent of a twenty-one year old daughter, as a presenter at industrial seminars, as a presenter at academic seminars and conferences, and currently, as a supervisor of two undergraduate research assistants. At Georgia Tech, I completed a seminar for academic teaching and assisted my advisor in teaching “Computing and Society” in fall 2005. My experience and expertise both as a general contractor and as a software developer as well as my ongoing academic training and research in computer science uniquely prepare me for academic teaching.

As a teacher of computing I will challenge each student to discover why computing is exciting and empowering for him or her. I will encourage students to question, to learn, and to perform at their individual best. In turn, I will listen, cajole, cheer, and learn. Hands-on learning is highly regarded in computing education as an effective teaching tool. I believe that encouraging students to expand the scope of hands-on projects to the limits of their imaginations will help them to discover how computing can enrich their interests. For example, software engineering projects should include those that explore aspects of computing in other domains. Students thus motivated will gain computing literacy and improved communication skills.

As a teacher, I want to address the tension in American computer science education between the emerging ubiquitous nature of computing and the shrinking ranks of interested students. One cause of this tension, in my opinion, is the insular nature of how we as computer scientists view our field. How, for instance, can we claim to develop truly ubiquitous computing solutions with primarily male researchers? I will encourage students to understand the historical and current social contexts of computing as it relates to other human pursuits. I want students to explore the aesthetic, structural, and functional aspects of the design and implementation of software.

I believe that some portion of every computer science course should focus on communication skills: writings, presentations, demonstrations, and explanations. I know from experience that the creation of these artifacts leads inevitably to a deeper understanding of the communicated content. The basic body of knowledge formulated by the IEEE and the ACM informs the dry details of a curriculum; however, as a teacher, one of my goals is to guide students to acquire the skills of learning and a love of learning by innovatively illuminating the curriculum. For example, my experience with commercial software development will serve to counterbalance purely theoretical approaches. As another example, I will encourage the exploration and critique of current academic and industrial research.

One of the most important contributions I will make to students and to my community is through my role as a mentor and advisor. Through individual guidance, I can help students discover their potential and find inspiration in their studies. As an advisor to undergraduates, I will directly affect their education and career decisions. My industrial and academic experiences qualify me for this role. Furthermore, I can help my school to attract and retain computer science majors through my contributions to curriculum development and outreach programs.

I am willing and able to teach any undergraduate computer science course. I look forward to teaching undergraduate and graduate courses in software engineering, which is my area of concentration. I am also prepared to teach courses in databases and artificial intelligence.