

# Visions of the Future for the Department of Computing and Software Engineering

The world we are facing now is more inter-disciplinary and collaborative. The problems we need to solve today usually require techniques from several different disciplines, such as problems in bioengineering or bioinformatics. Therefore, communication and transition of ideas and results between different disciplines must be based on a language that people can understand. Visualization techniques are obviously the easiest and most efficient way to communicate ideas and results between different disciplines.

Another important issue is Internet computing. Internet, one of the most important inventions of human being, has simplified and improved our lives in many ways. Through Internet, people from different countries or continents can work together as if they are in the same room. Information can be accessed anywhere in the world. "Distance" is no longer a barrier in human collaboration. Because of these, human being productivity has increased dramatically during the past decade. Obviously whoever has a dominating role in the design and development of Internet infrastructure and Internet computing (including the handling of Internet problems such as spam, viruses/worms, digital copyrights, identity theft, electronic fraud, electronic warfare, etc.) will have a bigger share in the control of human lives and the world's order.

What we can see is, computing today has reached a point that only those who know how to use internet computing as a core and visualization techniques as a communication means to integrate/combine different computation models and computation tools to solve multidisciplinary problems in urgent areas such as security and public health will excel.

## Vision for CaS

- The future of this department must be **visual** and **internet computing** based, **multi-disciplinary** relevant, with a significant portion of its research effort focusing on issues related to **security** and **public health**.
- Our goal is to reach the **top30** level in north America in six years.

## General Mission

- continuously improve in research and graduate studies without compromising the quality of undergraduate education

## Urgent Mission

- develop a strategy to bring the department to a new level of success without significantly increasing the size of the department.

## Action Plan for Research

- increase research funding
- increase the quality of publications
- build selective areas of excellence
- larger startup funding for new faculty hires

- increase the number of PhD students
- push for creation of technology centers in the College

### Education in General

- this century: more **inter-disciplinary**, **collaborative** and **global**
- CS departments of the 21st century need to produce students who are **adaptable** and **flexible**, as well as **technically proficient**

### Action Plan for Undergraduate Education

- increase the number of undergraduate students
- improve the quality of undergraduate program students
- get the undergraduate program accredited by ABET
- develop **certificates** in vision/graphics, networking, and bio-informatics
- get seniors involved in research work of faculty grants through senior projects

### Action Plan for Graduate Education

- increase the number of PhD students
- improve the quality of PhD students
- improve the retention and graduation rate of PhD students

### Action Plan for Service

- ensure every student gets proper advice
- help faculty get involved more in professional activities
- strengthen ties with national research centers, government laboratories and industry

### Action Plan for Administration

- transparent, bottom-up policy making
- review administrative and technical support structures to make sure the Department has sufficient support in both areas
- improve the morale and effectiveness among the staff members by providing appropriate recognition and competitive salaries

### Building a Great Department

- a department with a bracing atmosphere
- a department with a strong sense of community
- a department with intellectual vigor, and most importantly
- a department where everybody can reach his/her full potential

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