CSE Mission

• The department of Computer Science and Engineering will impact the information age as a national leader in computing research and education.

• We will prepare computing graduates who are highly sought after, productive, and well-respected for their work, and who contribute to new developments in computing.

• We will give students in other disciplines an appropriate foundation in computing for their education, research, and experiences after graduation, consistent with computing’s increasingly fundamental role in society.

• In our areas of research focus, we will contribute key ideas to the development of the computing basis of the information age, advancing the state of the art for the benefit of society, the State of Ohio, and The Ohio State University.

• We will work with key academic partners within and outside of OSU, and with key industrial partners, in pursuit of our research and educational endeavors.
CSE Background

One of the oldest CSE departments in the country

- Established in 1969 (youngest major dept in CoE)
- Graduated more than 8,000 BS, MS, and Ph.D.s
- About 500 total Ph.D. graduates by Spring 2012
- Many academic, technical, and business leaders

Current student enrollment (largest one in CoE)

- 900 undergraduate CSE and CIS
- 150+ M.S. students
- 200+ Ph.D. students
CSE Background

Faculty
- 31.5 FTE tenure-tracks
- 5 full-time lecturers
- 6 researchers and clinical faculty
- Several part-time lecturers

Administrative and computing staff members
- 7 administrative staffs
- 2 undergraduate advisors, 1 course coordinator
- 10 computing staffs
Faculty accomplishments and recognitions

- 11 Fellows in AAAI, ACM, and IEEE
- 21 NSF Career Awardees (one of highest in the country)
- Many professional society awards and best paper awards
- Research impact: foundations and technology transfers

Research expenditure and activities

- Increase 50% in last 5 years (06: $5M+, 11: close to $8M)
- Several large collaborative grants of NSF, DOE & DOD
- 80+% faculty have funded research projects
- Research volume increases steadily
Comparisons with NRC rank 25-36 CS departments


5 Upgrading, 3 downgrading after 15+ years

- Upgrading to top-10: GATech
- Up to top-20: U. Penn., Purdue, UNC
- Down to 40s: Rochester, Arizona, Indiana, SUNY SB

Ohio State is ranked #28 by US N&R (2010)

- Moved to a competitive group: JHU, NYU, Penn State, Rutgers, UC Irvine, and Virginia
US N&WR ranks Computer Engineering every year
- Ranked in 27th with 5 others in 2005 by US N&WR
- Ranked in #23 in 2012 (with VaTech)

- Computer engineering ranking conducted by CSE chair at Ohio State, like many other universities.
- CE ranking reflects experimental research
Critical Issues of CSE

Faculty size matters
- Dropping ranks: Arizona, Chicago, Rochester & Indiana
- We were large 15 years ago, but not anymore
- Many departments increase the size but we have shrunked

Ph.D. production is a key factor
- A turning point of our Ph.D. production/faculty: 2005
- Peak production year of 0.9+ Ph.D. per faculty: 2008

• Research expenditure reflects activity volume
- We had a very low starting point 12 years ago
- Continuously to increase, reach the rank top-25 average
- But it is still not enough
Performance Goals

• Grow the key research areas in CSE and increase the multidisciplinary collaborative efforts
• Further improve the quality of increasingly large undergraduate programs
• Advance our large graduate programs with high quality.
• Further persistently improve diversity in faculty and students
• Continue to maintain strong relationships with Alums and other supporters.
• Efficient Administration and management
Performance Goal #1 – Growing Both Key Research and Multidisciplinary Research

• Strategy 1: Promoting high impact research and technology transfer.
  – Action Steps
    • Build on existing strengths of several well established areas, such as systems, networking, and visualization, by hiring new faculty.
    • Promoting a strong culture of conducting impact-driven research, which will be part of merit and tenure/promotion evaluation.

• Strategy 2: Promoting multidisciplinary research and collaborations with other science & engineering fields.
  – Action Steps
    • Encourage joint proposals with other departments, and give a cost-sharing priority
    • Give credits to faculty who are in collaborative projects
    • Encouraging CSE faculty to join/establish promising centers
    • Many activities are going on: collaborations with ECE, CEG, ISE, OSC, Medical School, Linguistics, Math, Statistics and Psychology.
Performance Goal #1 – Growing Both Key Research and Multidisciplinary Research

• Strategy 3: Increasing the expectation of research expenditure
  – Action Steps
    • Expecting a minimum $100K annual expenditure for each junior faculty as up for tenure, and $200-300K for each tenured faculty
    • Research expenditure is a key factor in evaluation

• Strategy 4: Advancing computing environment
  – Action Steps
    • Actively submitting large infrastructure proposals to NSF, which support both personal's and equipment's in 5 years.
    • These excises would be done every 2-3 years.
    • Give a high credit to the lead PI.
Performance Goal #1 – Growing Both Key Research and Multidisciplinary Research

• Resource Requirements
  – The major source requirement is tenure-track faculty positions. The FY13 FTE is 31.5
  – We need to continue some strategic hiring in targeted areas respond the high demand of enrollment and increasingly volume of research.
    – We need 5-7 junior faculty positions in next 5 years

• Existing sources
  – Department operational funds are limited.
  – Faculty discrentional/startup funds need to be efficiently managed
• **Strategy 1: Further improve undergraduate curriculum**
  - **Action Steps**
    • Some part the current CSE undergraduate classes need to be updated with new concepts and technology. Undergraduate curriculum committee will serious address this.
    • Establishing an easy e-communication environment so that students can discuss with faculty anywhere/anytime. The faculty are encouraged to use blogs and new Internet technologies besides standard web pages.

• **Strategy 2: Outreach the best/brightest and diverse undergraduates**
  - **Action Steps**
    • Regularly visiting K-12 Schools in Ohio to give CSE introductions
    • Identify several best high schools with strong CSE activities, and regularly make exchanges with the teachers and students there.
    • Additional efforts to recruit with diverse and woman students.
Performance Goal #2 – Further Improve the Quality of Increasingly Large Size Undergraduate Program

• Strategy 3: Increase Research and Extra-curricular activities for CSE Undergraduates
  – Action Steps
    • Waive the overhead for NSF REU applications. Give credits to faculty who are supervising REU students.
    • Reorganizing and establishing CSE related clubs and groups with faculty advisors, such as ACM programming, top-coder, open-source, and others. The department will provide a certain budgets.

• Strategy 4: Giving credits to Faculty with Excellent Records of Undergraduate Teaching and Supervision
  – Action Steps
    • Propose a list of undergraduate activities to inform the faculty
    • Teaching load reduction can be considered for recruiting, advising, and directing projects for undergraduate students.
    • Advance the excellence for undergraduates is also a key part of Merit evaluation.
Performance Goal #2 – Further Improve the Quality of Increasingly Large Undergraduate Program

• Resource Requirements
  – The major source requirement is again tenure-track faculty positions.
  – With more faculty, we can fully accomplish the goal.
  – We need 5-7 junior faculty positions in next 5 years

• Existing sources
  – Department funds are limited to respond large teaching demand
  – CSE undergraduate students in average have 29% credit hours with tenure-track faculty, which is lower than the university average.
Performance Goal #3 – Advance our Large Graduate Programs with a High Quality

• **Strategy 1:** Further improve the selectivity of the graduate programs (particularly in Ph.D. program)
  – **Action Steps**
    • Make new plans and initiatives in the admission committee: (1) understanding applicants beyond the records on papers; (2) increase domestic applications and admissions; (3) Actively recruiting strong students in conferences and visits; (4) establishing an effective e-communication Internet environment for applicants; (5) organizing campus interviews, and phone interviews.

• **Strategy 2:** Improving CSE National rankings by Research Quality, Strong Identity and Large Volume
  – **Action Steps**
    • Raising the bar and expectations for research quality of Ph.D. students. Making critical comments to each student on their research progress in each annual review.
    • Reward the best Ph.D. students for their achievements
    • Retain a high Ph.D. production (0.7-0.8 Ph.D. per faculty)
Performance Goal #3 – Advance our Large Graduate Programs with a High Quality

- **Strategy 3: Increase the size and strengthen the management of CSE MS Program**
  - **Action Steps**
    - The nature of CSE MS program is similar to a professional degree because the students are paying their cost. However, the content is standard CSE graduate studies. We will carefully handle this increasingly large group with advisors, well defined programs, and attractive job placements.

- **Strategy 4: Increase Domestic and diverse students**
  - **Action Steps**
    - Actively participating the graduate open house each year.
    - Actively promoting the CSE graduate programs in US by e-mails, US mails, and campus visits.
    - Setting a departmental minority scholarship to attract and retain students.
Performance Goal #3 – Advance Large CSE Graduate Programs with High Quality

- Resource Requirements
  - The major source requirement is again tenure-track faculty positions.
  - With more faculty, we can fully make the actions to achieve our goal.
  - We need 5-7 junior faculty positions in next 5 years

- Existing sources
  - Department funds are very limited now after the OBR cut. We can provide some student supports in startup package.
Performance Goal #4 – Further Persistently Improve the diversity of Faculty and Students

• **Strategy 1: Double faculty mentoring to diversity junior candidates**
  – Action Steps
    • Each diversity junior faculty is assigned two mentors, the regular faculty mentor and the department chair. He/she will be closely connected to the department, college, university, and the research community via the two mentors.
    • Diversity faculty are also encouraged to attend the related college-level meetings and gatherings.

• **Strategy 2: Recruiting Diversity Students**
  – Action Steps
    • Enhancing our connections to minority high schools and institutions.
    • Our minority faculty will also make strong efforts to recruit.
    • Another rich pool is woman applicants/students with international background. Normally they are the best students in the home countries.
Performance Goal #4 – Further Persistently Improve the diversity of Faculty and Students

• **Strategy 3: Creating a Supportive environment for dual careers**
  – **Action Steps**
    • CSE will continue to make the efforts to help a faculty candidate’s spouse to find jobs
    • Continue to pay agent to help faculty spouse to look for jobs in Columbus.

• **Strategy 4: Promoting Diversity**
  – **Action Steps**
    • In our web page, newsletters, and annual reports, effectively promote our efforts and achievements on diversity
    • Giving faculty credits on diversity contributions in their evaluations.
Performance Goal #4 – Further Persistently Improve the Diversity of Faculty and Students

• Resource Requirements
  – The major source requirement is again tenure-track faculty positions.
  – With more faculty, we can continue to increase our diversity hiring.
  – We also need support from the College/University for establishing a highly effective dual career hiring system.

• Existing sources
  – Department funds are limited to address the dual career issues.
Performance Goals - Key Metrics

- Hire additional 5-7 faculty by 2015, and retain the best faculty.
- Produce more significant research results with high impact (transfers and commercialization)
- Increase the diversity faculty to 5 by 2013.
- Increase research expenditure 5%+ each year.
- Achieve top 25 ranking for CS/CE by 2016.
- Reach to 0.8 Ph.D. production per year by 2014.
- Grow the number of CSE undergraduates participating research or technical extra curricular to 25% by 2012.