

Economic Analysis of Investing in Engineering Education

Summary of Study Performed by

Economy.com

Bruce Schafer

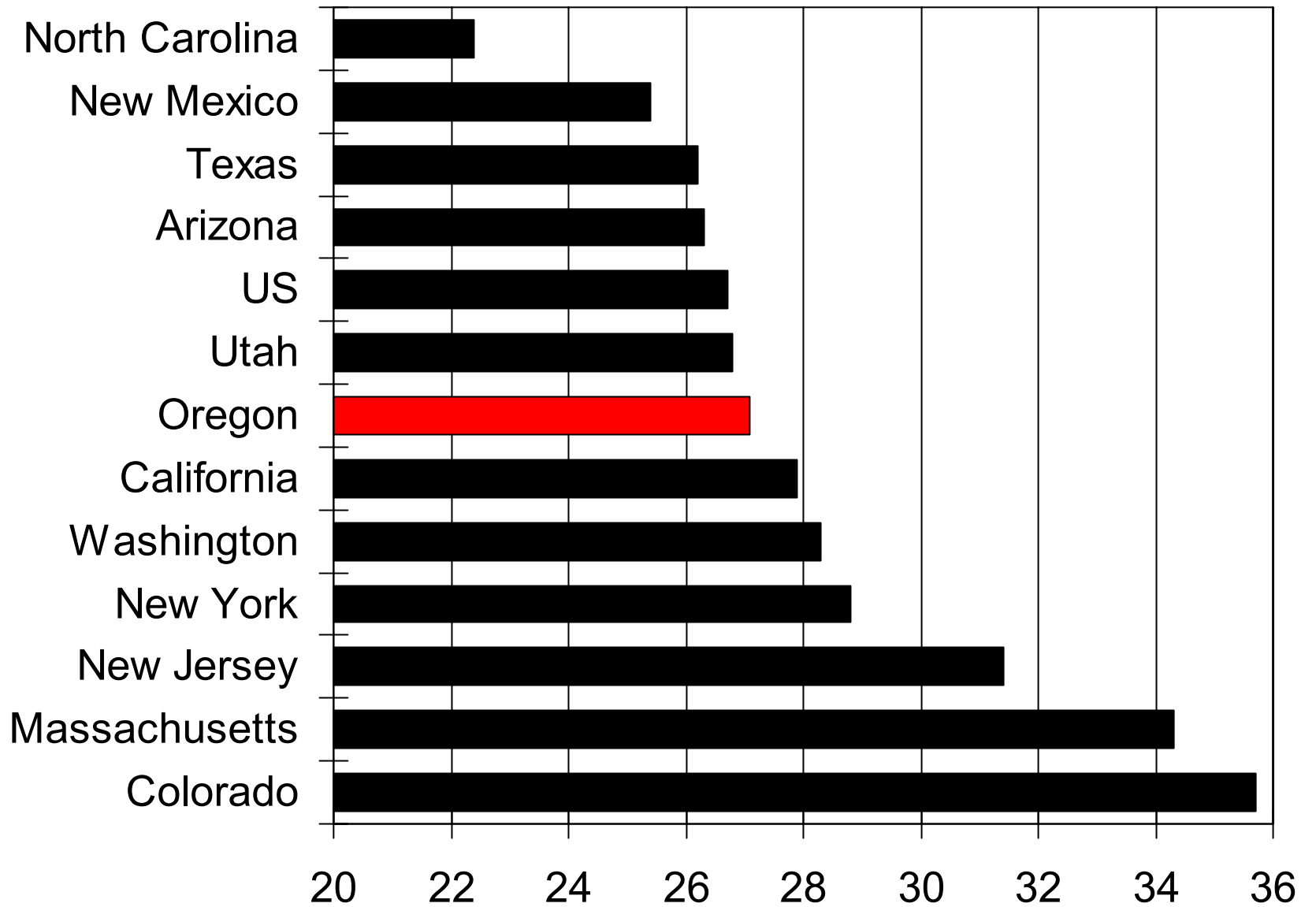
April 25, 2003

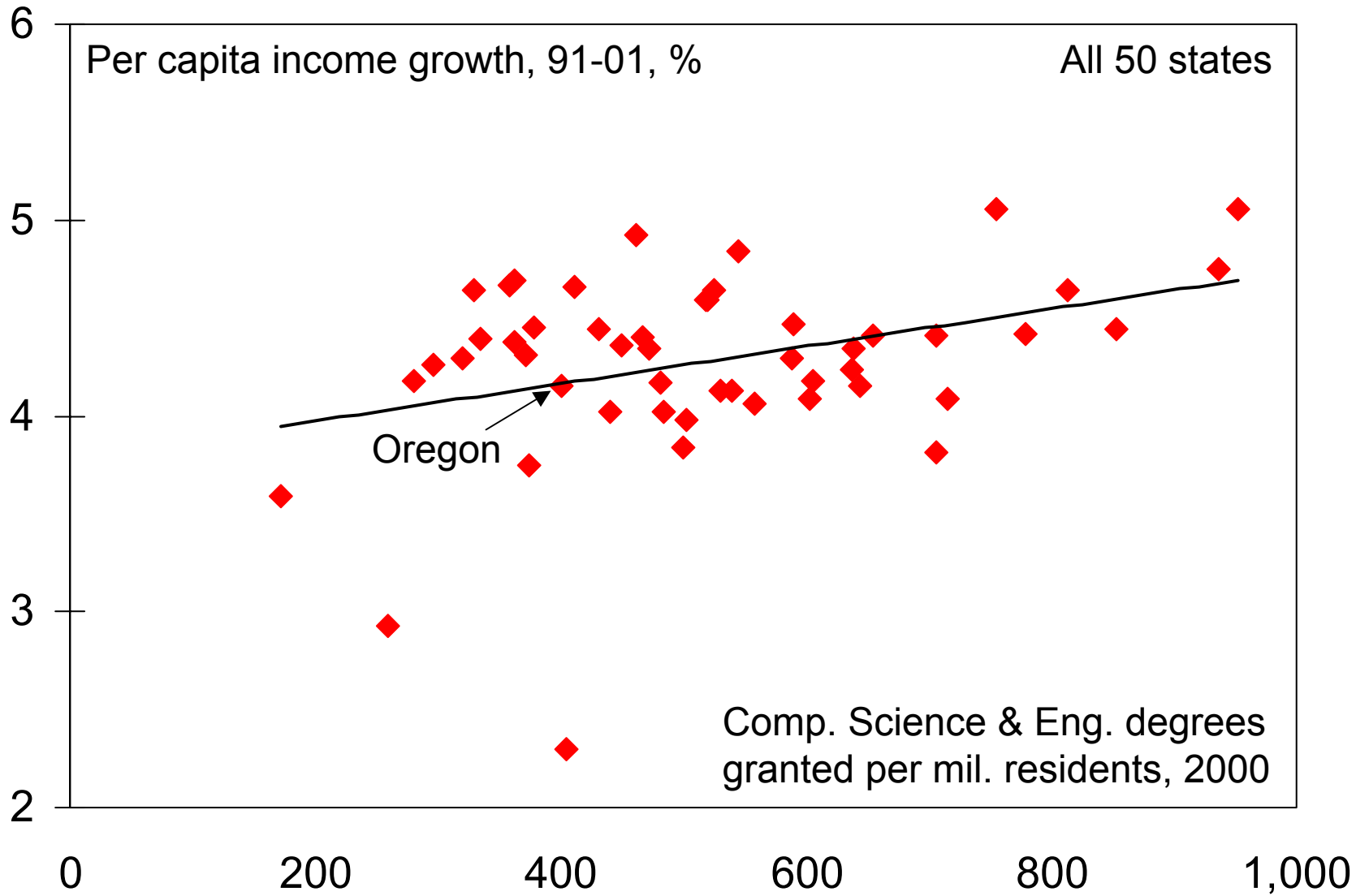
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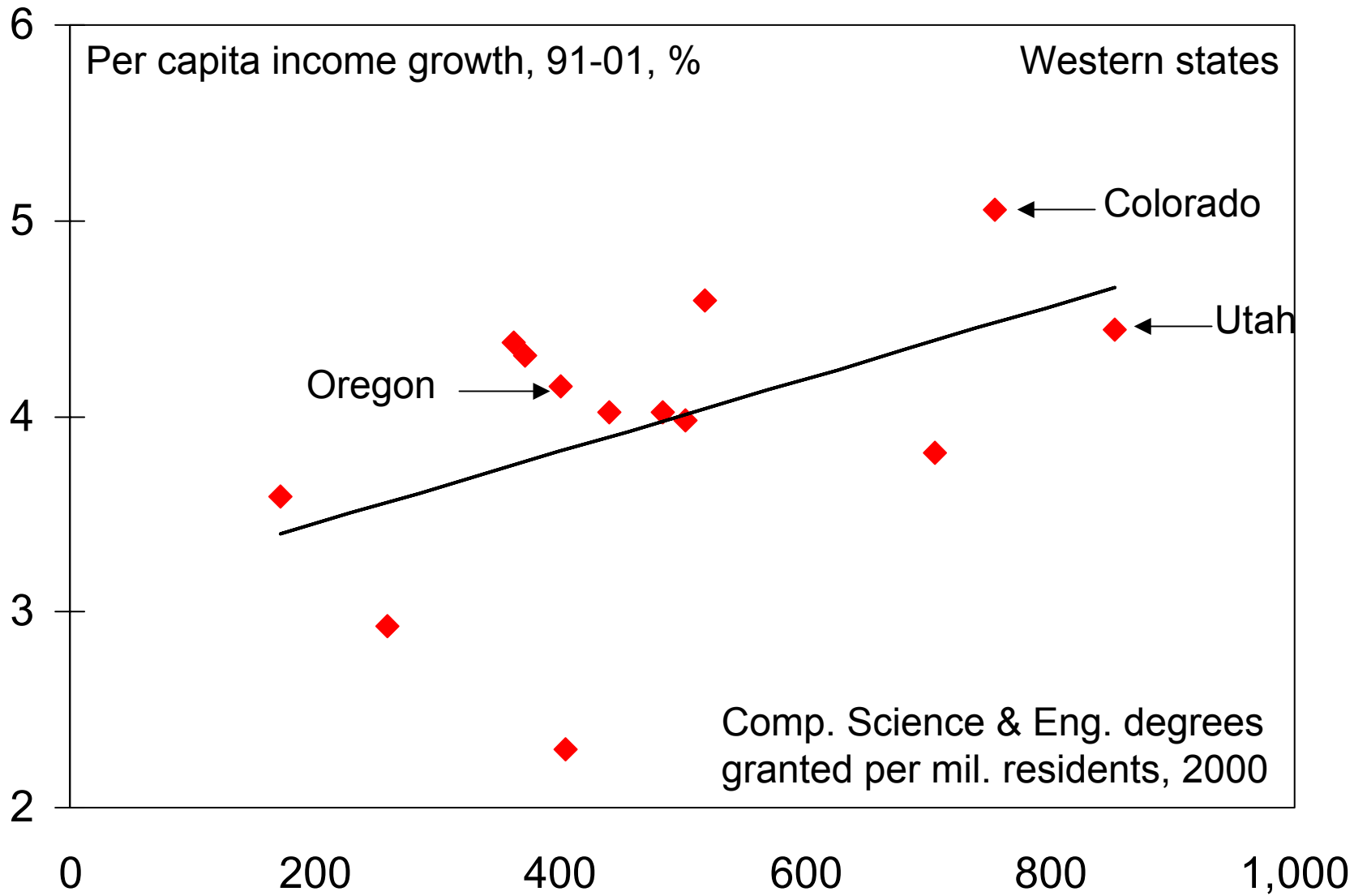
- Located in West Chester, Pennsylvania
- Operate economics web sites
- 400 clients
- Founded in 1990

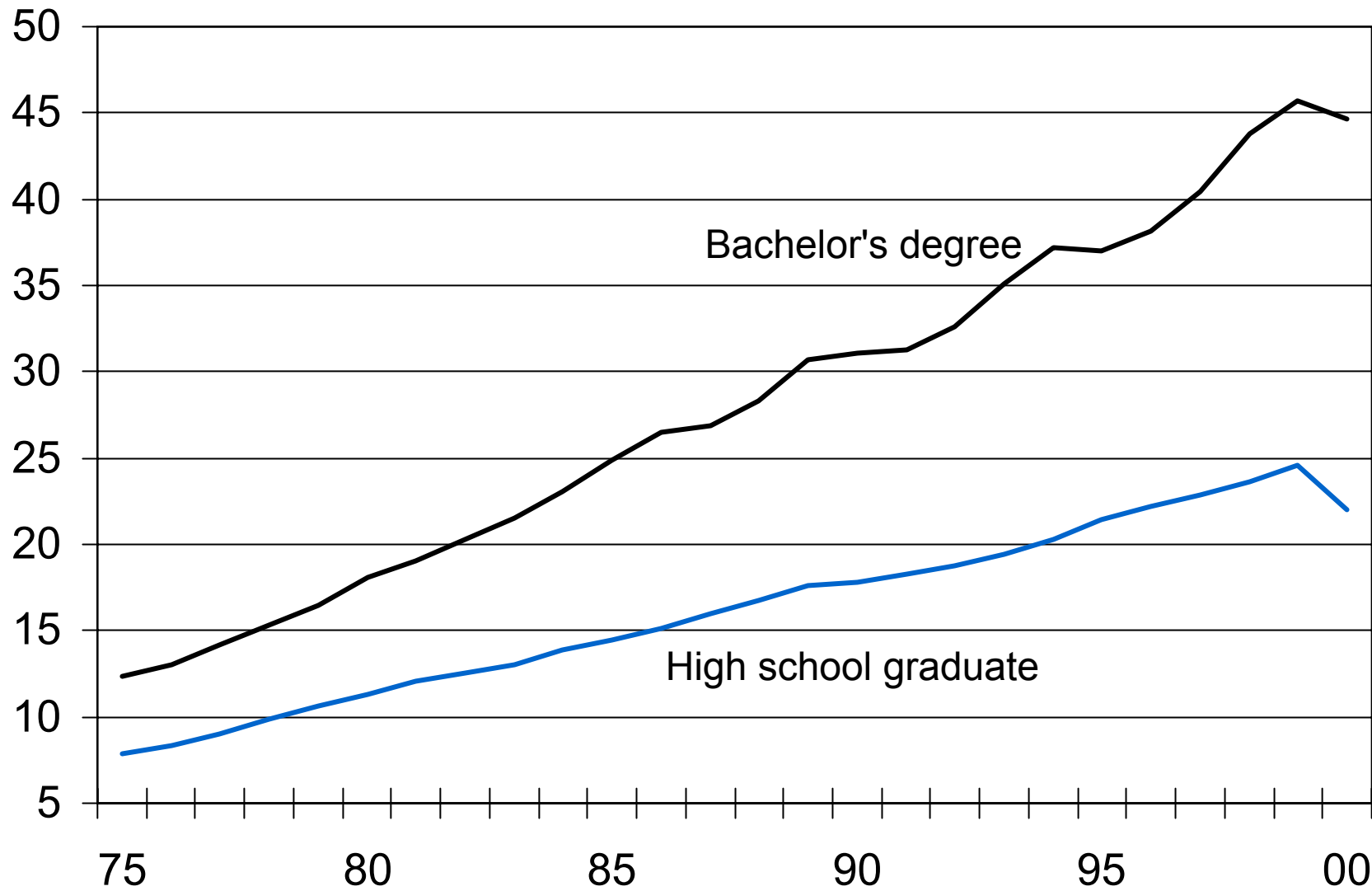
Study

- Title: Higher Education and Economic Growth in Oregon
- General review of Oregon vs. other states in terms of high-tech competitiveness
 - 12th in job growth from 1992 and 2002
 - 42nd in job growth from 1997 and 2002
 - Average in terms of percent of population with 4-year degree
- Focused analysis on technical degrees vs. economic growth









Conclusions

- Positive correlation between technical degrees and income growth
- 2X correlates with almost 1% rise in per capita income
- 1% rise in Oregon that translates into \$480M, \$960M, ...
- Need to be careful because statistical figures of merit are weak and much of increase can be attributed to growth in basic industries

Chartering a Federal Funding Task Force

Bruce Schafer

April 14, 2003

Background

- “We will make the creation of an Oregon-trained, world class engineering workforce a top Federal funding priority.”

Senator Ron Wyden, Oregon Leadership Summit,
12/9/02

- “IMPROVE ENGINEERING PROGRAMS:
Support efforts to bring world-class engineering instruction to the state.”

Senator Smith & Wyden’s Bipartisan Agenda For
the 108th Congress, 4/16/03

Goal

- Obtain federal funding that completes underwriting of ETIC Plan or expands upon it
- Complement work of separate task force chartered “to identify and evaluate federal research appropriation and grant opportunities to review their relative potential for job creation and business spin-off.”

Strawman Process

Part One

- In parallel with communication with Senators' and Governor's office, OCKED, and others...
- Gather ideas
- Analyze
 - Relationship to ETIC Strategy and partial funding by Legislature
 - Benefits to Oregon
 - Leverage of existing expertise, resources
 - Potential for match to funding agencies and Senators interests
- Summarize opportunity/recommendations
- Obtain endorsement and feedback from Senators, Governor

Strawman Process

Part Two

- Adjust and prioritize recommendations
- Match high-priority recommendations to funding agencies
- In parallel
 - Make recommendations to Senators
 - Recruit partners
- Work with Senators' staff to identify appropriations opportunities and existing sources of funds
- In parallel
 - Support appropriations process in Washington, DC
 - Apply for grants from agencies

Issues

- Relationship to OUS and OHSU “wish lists”
- Relationship to OCKED
- Coordination with Government Relation offices

Task Force Members

- Ron Adams
- Jim Chadney
- Bob Dryden
- Martha Anne Dow
- Michelle Girts
- Jim Hook
- Wally Rhines

Schedule – Part One

- First Meeting: May
- Second Meeting: Early June
- Report to ETIC: June
- Third Meeting: Early July
- Meet with Senators & Governor:
July/August

Schedule – Part Two

- To be determined
- September 2003 – June 2004

Follow-up Internal Audit

Bruce Schafer

April 25, 2003

Background

- Internal Audit Conducted in September 2001
- Made 8 Recommendations
- Management provided responses to each
- All/most of the the changes have been made
- Follow-up done recently by Linda Eki

Summary of Draft Report

- Six of eight recommendations adequately addressed
- Need more work on
 - Verification of student-based data
 - Verification of financial data
- Three recommendations

New Recommendations

- Enhance accuracy & consistency of financial summaries
- Verify student information
- Create separate scorecard for OCECS budget/spending

Enhanced Accuracy & Consistency of Financial Summaries

- Responsibility: Identify person on each campus
- Financial Summaries:
 - Need standard format and standard supporting documentation
 - Submit in advance of meetings
- Spending Projections: Use encumbrance mechanism for projected spending in remainder of biennium
- Carry-forward Spending: Document

Verify Student Information

- Create system for gathering consistent SCH and degree data and supporting documentation
- Exploit capabilities of Student Information System

Recommendation

- Create short-term task force with a representation from each campus
- Work mostly by phone and email
- Identify standard methods/templates
- After first meeting develop management response to recommendations
- Work together to implement improvements
- Monitor

OREGON MASTER OF SOFTWARE ENGINEERING

Proposal to move OMSE
into
Portland State University

Presented to ETIC
25 April 2003
R. Lytle

OREGON MASTER OF SOFTWARE ENGINEERING

Objective for today: obtain your input on the proposed changes to this ETIC sponsored program

Agenda

- Review OMSE activities, growth and projections
- Review the OMSE/PSU proposal
 - Academic and organizational intent of the move
 - Financial intent and requirements
 - Options and risks: time is of the essence!
- Discussion: ETIC comments/recommendations

OREGON MASTER OF SOFTWARE ENGINEERING

OMSE is unique among ETIC programs

- Software engineering is a new educational program in Oregon
- OMSE is both a degree program and a professional development program
- OMSE started with zero students
- OMSE directed to achieve self-sufficiency within ETIC's financial commitments

OREGON MASTER OF SOFTWARE ENGINEERING

2002-2003 Turn Around

	<u>2002</u>	<u>2003</u>
• Number of Students	156	208
• Course Registrations	168	232
• FTE Students	56	77
• New MSE Admits	11	18
• Degree applications pending	0	5-8

OREGON MASTER OF SOFTWARE ENGINEERING

- Over 500 engineers from 130 companies have taken OMSE courses
- 40 admitted students from 26 companies are currently working on MSE degree completion
- By Spring 2004, 21 students from 14 companies will have received MSE degrees
- Online courses bring OMSE to all Oregonians

OREGON MASTER OF SOFTWARE ENGINEERING

Quality indicators

- Gaining prominence/brand name recognition
- Engineers and companies say OMSE courses promote better software practices
- Recognized faculty (publications; research)
- Outstanding engineers as students
- Industry advisory board involvement

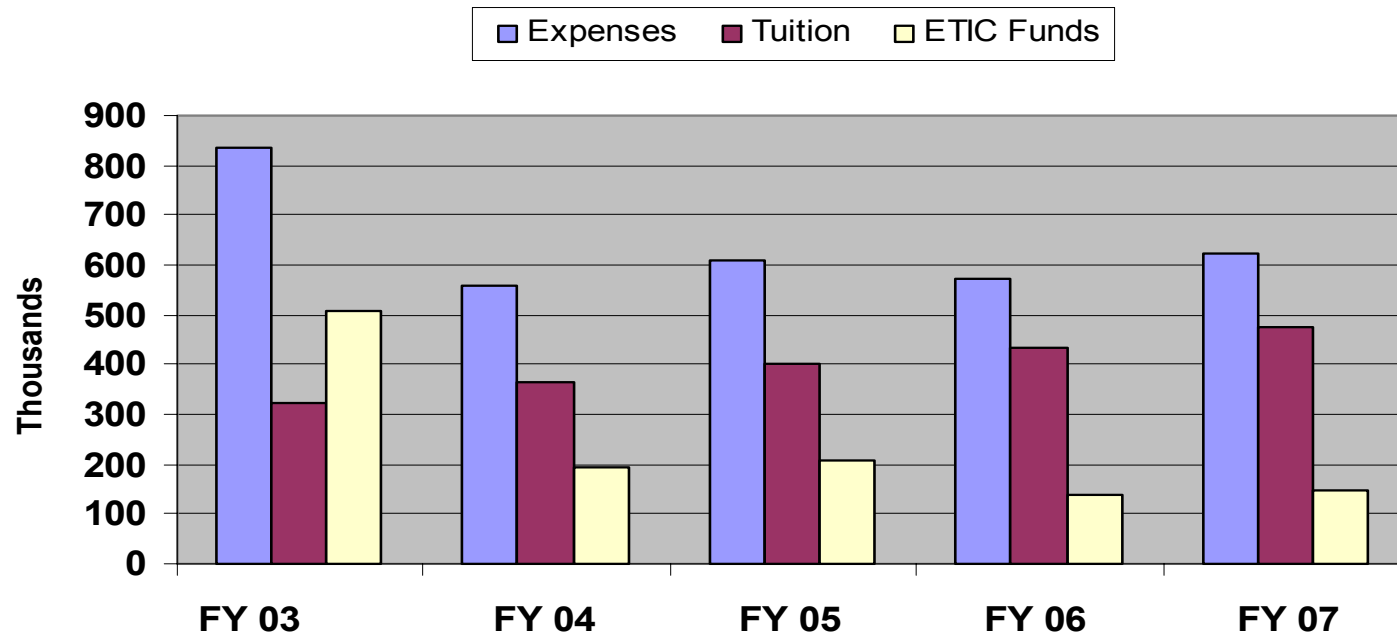
If it's working, why change?

- “Free standing” model was great for start-up phase
- Long term plan has always required a “permanent” home in one of the universities for stability
- Projections show financial breakeven requires moving into a host university
- PSU (and only PSU) is willing and able to accept responsibility for OMSE now
- Transfer must be made now to allow financial breakeven within funds ETIC allocated to OMSE

Proposed Terms of Transfer to PSU

- PSU assumes management and financial obligations
 - Will continue 4-university collaboration in teaching
- PSU receives remaining ETIC allocated funds
 - Transfers \$1.4M balance to designated OMSE account at PSU
 - These funds meet budget projection plus \$200K contingency
 - PSU accepts all contingent financial risks, including “teach out”
- PSU account visible for OUS & ETIC monitoring/audit
- No future obligation of ETIC for OMSE
 - Approved by college and university administration at PSU
 - All parties are enthusiastic

OMSE Financial Viability Plan



- FY 04 is first year at PSU; expenses reduced through synergy with PSU CS Department.
- Conservative projected increases for tuition revenue; no tuition increases.

Alternatives Analysis

Option 1. Move to PSU as proposed. Expect financial breakeven and successful program

Option 2. Running the program “as is”. Do not project breakeven within ETIC funds

Option 3. Terminating the program immediately. Oregon loses software engineering education program, investment to date, and requires teach-out funding (~\$.75M).

Recommendation: Move to PSU as proposed.

ETIC Research Workshop

Bruce Schafer

April 25, 2003

Background

- ETIC Research RFP called for mid-term workshop
- The middle of the term came and went

Idea: Hold end of term workshop

- Goals:
 - Share insights regarding industry sponsored research
 - Share results of research (subject to confidentiality restrictions)
 - Showcase unique industry/academic partnerships
 - Gain favorable publicity in business and general media

Implementation

- Hold at CAPITAL Center or similar venue
- Invite industry and academic
- Invite media
- Issue press release and do
 - media preview
 - follow up