The ETIC ‘05-’07 Proposal: Growing Opportunity in Oregon

Engineering & Technology Industry Council

July 14, 2004
Engineers are an asset to all Oregon.
ETIC...
Began as High-Tech Advisory Group
ETIC Now…Represents Diversity of Oregon Industries

- Ag. / Wood Products
- Electronics
- Energy
- Heavy Mfg
- Infrastructure
- Mfg Equip
- Medical
- Semiconductors
- Software
ETIC Shows Track Record by Meeting Key Metrics – Progress to date

<table>
<thead>
<tr>
<th>Institution</th>
<th>Combined Undergraduate and Graduate Degrees</th>
<th>Total Research ($M)</th>
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</thead>
<tbody>
<tr>
<td></td>
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<td>EOU</td>
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<td><strong>1,715</strong></td>
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</table>
ETIC Mission

Make post-secondary engineering & technology education a strategic resource that fuels the Oregon economy & creates opportunity for all Oregonians.
Economic Impact Pyramid

Quality Jobs for Oregonians

Economic Impact

AEED Opportunity Areas

ETIC Investments

OUS Science and Engineering
Economic Impact Pyramid

Quality Jobs for Oregonians

Economic Impact

Sustainability
K-12 Education
Health
Eng./IT

Infra/Trans
Env., Pre, Biomed
CS, Nano, Analog/
Mixed

OREC OUS Science and Engineering

AEEED Opportunity Areas
‘05-’07 ETIC Proposal Builds on Public/Private Partnership for Capacity, Excellence, & Speed

1) Add faculty & facilities needed to achieve
   - Capacity (aka 2X): Double number of work-ready graduates
   - Excellence (aka Top Tier): Improve national rankings & research, and

2) Increase quality & diversity of students

3) Foster inter-campus & community college collaborations for study & research

4) Quickly form industry-academia partnerships to mold & adapt to global markets for Oregon industry advantage
‘05–’07 ETIC Funding Provides Benefits across Oregon

- PSU
- OSU
- WOU
- OGI
- UO
- SOU
- OIT
- EOU

- Infrastructure / Trans.
- OREC / Environmental
- Pre-College Programs
- Computer Science & IT
- Biomedical Engineering
- Material & Nanoscience
- Electrical & Computer Eng.
- Other Engineering

Community College
University
‘05-’07 ETIC Program Funding Matches Public $ with Private $ Commitments

1:1.5 overall

Proposed 2005-2007 Investments
$43M/$65M
Public/Private

PSU
$9.37/$14.54

OSU
$17.87/$31.74

WOU
$0.45/$0.23

OGI
$4.40/$7.00

EOU
$0.90/$0.46

UO
$5.18/$7.96

SOU
$0.53/$0.27

OIT
$1.84/$0.84
ETIC Private Support has grown dramatically

![Bar chart showing ETIC Private Support growth from 1997-99 to 2005-07 in millions of dollars. The chart indicates a significant increase in support over time.]
Private Dollars Maximize Access to Technical Careers

- Private dollars flowing to engineering scholarships, fellowships: $2.4M
- Federal dollars: Over $6M
- Internships: MECOP, AeA, and others make graduates work ready while helping underwrite their education
ETIC Promotes Partnerships for Efficiency & Access

- Campus proposals reviewed for:
  - Duplication
  - Potential areas of collaboration
  - Revisions were requested, submitted, & approved
- $80K earmarked for pre-engineering planning by campuses & community colleges
- $800K RFP for pre-engineering including K12 & community college collaborations
ETIC ‘05–‘07 Proposal Summary  For these investments:

- **Programmatic**
  - $43M Public
  - $65M Private

- **Capital**
  - $14M Capital
  - $28M Private
Programmatic Investments will support existing faculty & new faculty to:

- Double the number of engineering graduates
- Increase excellence/innovation as measured by national rankings, externally funded research
- Invest in opportunities that will help drive Oregon’s future economic growth
### Capital investments will support programmatic investments

<table>
<thead>
<tr>
<th>Institution</th>
<th>Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>EOU</td>
<td>Purchasing equipment at EOU to support new biotechnology program</td>
</tr>
<tr>
<td>OHSU / OGI</td>
<td>Upgrading instructional computing facilities and purchasing equipment for nanoelectronics research</td>
</tr>
<tr>
<td>OIT</td>
<td>Creating Smart Energy Research Lab and supporting electronic delivery of renewable energy classes</td>
</tr>
<tr>
<td>OSU</td>
<td>Renovating Dearborn Hall at OSU to support mechanical instruction and laboratories</td>
</tr>
<tr>
<td>PSU</td>
<td>Establishing new Northwest Center for Advanced Manufacturing</td>
</tr>
<tr>
<td>UO</td>
<td>Building out laboratory and teaching space for Material Science at UO including Center for Advanced Materials Characterization in Oregon</td>
</tr>
</tbody>
</table>
## Financial Summary

<table>
<thead>
<tr>
<th></th>
<th>Programmatic</th>
<th>Capital</th>
<th>Total</th>
</tr>
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<tr>
<td></td>
<td>State Support ($M)</td>
<td>Private Support ($M)</td>
<td>Support Ratio</td>
</tr>
<tr>
<td>EOU</td>
<td>$ 0.90</td>
<td>$ 0.46</td>
<td>0.51</td>
</tr>
<tr>
<td>OGI</td>
<td>$ 4.40</td>
<td>$ 7.00</td>
<td>1.59</td>
</tr>
<tr>
<td>OIT</td>
<td>$ 1.84</td>
<td>$ 0.84</td>
<td>0.46</td>
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<tr>
<td>OSU</td>
<td>$ 17.87</td>
<td>$ 31.74</td>
<td>1.78</td>
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<tr>
<td>SubT / Ave.</td>
<td>$ 40.53</td>
<td>$ 63.03</td>
<td>1.56</td>
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<tr>
<td>Other investments</td>
<td>$ -</td>
<td>$ -</td>
<td></td>
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<tr>
<td>Planning</td>
<td>$ 0.08</td>
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<tr>
<td>Research Fund</td>
<td>$ 1.59</td>
<td>$ 1.59</td>
<td>1.00</td>
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<tr>
<td>Pre-college RFP</td>
<td>$ 0.80</td>
<td>$ -</td>
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<tr>
<td>Total</td>
<td>$ 43.00</td>
<td>$ 64.62</td>
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ETIC Builds on Documented Achievement to Set Key Metrics for ‘05-’07

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Oregon will realize:

- Increased excellence and doubling of engineering & technology graduates
- Community college linkage to improve access, curriculum planning & delivery
- Enhanced speed in recognizing & creating economic opportunities, through real-time partnership mechanism
- Capital facilities enabling Operations, easing space constraints, stimulating industry, and directly creating jobs
Additional Slides
## Recent Success from Campus Partnership

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<th>Success Highlight</th>
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<tr>
<td>EOU</td>
<td>Expanded Computer Science Program</td>
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<tr>
<td>OHSU / OGI</td>
<td>Hired outstanding new faculty, resulting in stronger research-driven graduate program</td>
</tr>
<tr>
<td>PSU</td>
<td>Circuit Design and Test: New curriculum, unique laboratory, and world-class scholars</td>
</tr>
<tr>
<td>OIT</td>
<td>Extended degree program to Information Technology professionals in Metro area; renewable energy center</td>
</tr>
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<td>OSU</td>
<td>Developed 6 powerful research clusters and 70% growth in engineering research</td>
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<td>SOU</td>
<td>New degree options in Computer Security and Information Assurance, Computer Science and Multimedia, and Materials Science</td>
</tr>
<tr>
<td>UO</td>
<td>Enhanced quality of Computer Science and Materials Science programs through new faculty, industrial internship programs, and advanced instrumentation</td>
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<tr>
<td>WOU</td>
<td>Expanded Computer Science Program</td>
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‘05-’07 Investments Chosen for Maximum Economic Impact

1. Infrastructure / Transportation
2. OREC, Environmental Systems
3. Pre-engineering / Community College
4. Computer Science & Information Technology
5. Biomedical Engineering & Digital Hospital
6. Material Science & Nanoscience
7. Analog and Mixed Signal / Electrical Engineering
Critical Success Factors

- Stay focused on results
  - Objective metrics
  - Accountability
- Involve key executives who
  - Represent companies with direct stake in the result
  - Identify with the goal & are committed to making a difference
- Provide incentives to campuses to
  - Participate
  - Stretch
  - Hold themselves accountable
- Allocate resources based on merit
- Leverage with private dollars
Accountability Through Metrics

- Student Credit Hours
- Degrees granted
- Research expenditures
- National ranking
- SAT/GRE
- Diversity
- Licensing
- and others
What kind of companies are asked to join the Council?

- Those that
  - develop or
  - apply technology and
  - benefit from innovation & technical talent
- ETIC industry partners from entire state
  - Agricultural technology, e.g. IRZ Consulting
  - Energy generation and transmission, e.g. PacifiCorp
  - Infrastructure design/delivery, e.g. CH2M Hill
  - Medical, e.g. Asante Health System
  - Heavy manufacturing, e.g. Gunderson
  - Wood products, e.g. JELD-WEN
  - Electronics / Semiconductors, e.g. Intel
  - Software, e.g. Mentor Graphics
Pre-engineering Programs

- Campus-based programs
  - EOU’s new initiatives (BMCC & TVCC, 4-H and others)
  - PSU’s Saturday Academy
  - OSU Extension
  - OIT’s TWIST and others
  - WOU’s connection to CSTA
- Curriculum planning groups including community college deans
- RFP to pilot new ideas and disseminate best practices
Summary: 2005-2007
Public and Private Partnership

- Investments focused on economic benefit and opportunity for Oregonians
- Attract diversity of talented students through outreach and quality
- Increase community college collaboration
- Continuous connection to exploit opportunities through academic/industry partnerships