

**Oregon Core Research
Competencies:
Phase I of an Oregon
Technology Roadmap**

Sponsored by the Oregon Economic and
Community Development Department

Alta Biomedical Group LLC

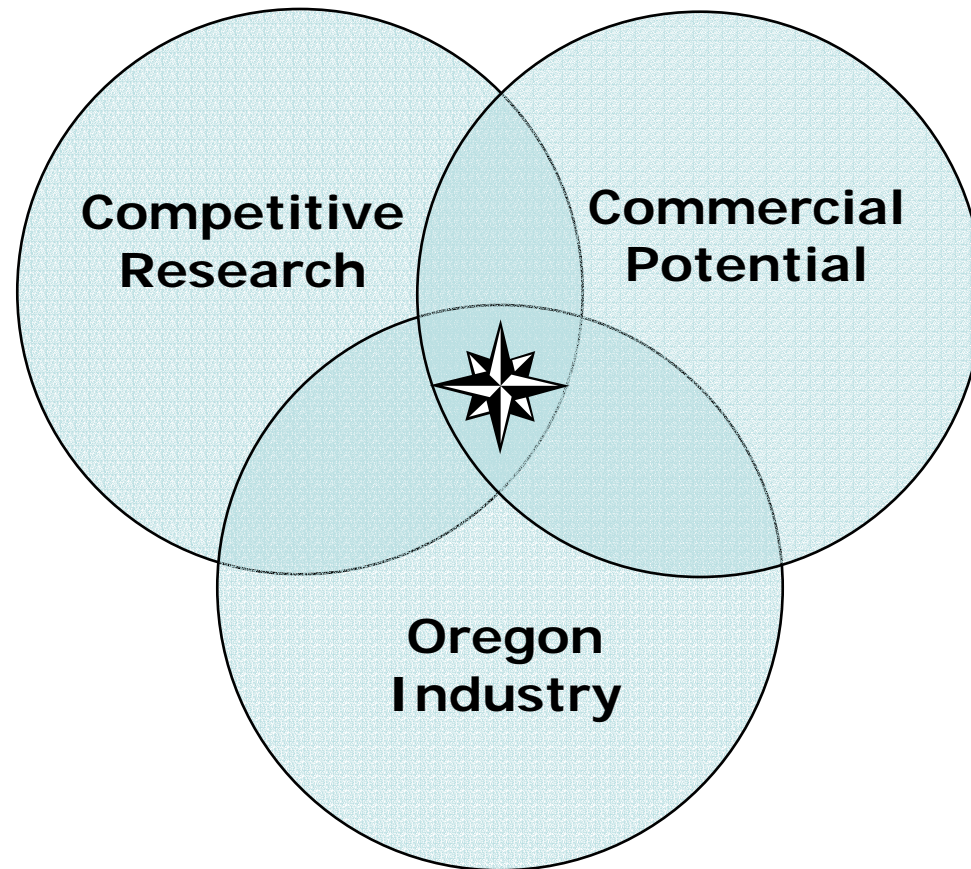
Knowledge-based Economic Development

- What are Oregon's research strengths?
- Where could they take Oregon's economy?
- Begin to design an Oregon Technology Roadmap that takes us from our research strengths to innovative products, jobs and companies

What do we need?

- (1) Areas of core research strength with
- (2) High value commercial opportunities and
- (3) Potential to be commercialized in Oregon

Core Research Competency Screens



Data Analysis

- U.S. Patents issued to Oregon inventors and assignees
- Publications from Oregon Research Universities
- Grant awards from federal agencies
- Interviews with research and industry leaders
- Market Studies
- Web Searching

Core Research Competencies

- Multi-Scale Materials and Devices
 - Small, powerful devices
- Brain Function and Disease
 - Stroke and obesity
- Information to Knowledge
 - Making sense of complex data

Core Research Competencies

- Analog Mixed Signal
 - Wireless products and services
- Education and Behavior
 - Improving learning and managing behavior

MULTI-SCALE MATERIALS AND DEVICES SUMMARY

STRENGTHS

Research and contract funding growth
Over 50 PIs
Over 60 issued or pending patents
Silicon Forest high tech concentration
>5000 related Oregon industry patents
Entrepreneurial connections and interest
UO/OSU/PSU/PNNL collaboration

WEAKNESSES

Research metrics and ranking relatively weak
Past commercial success limited
Basic university funding weak

OPPORTUNITIES

>\$100 billion in diverse markets
Energy efficiency and portable power
High technology materials and processes
Biomedical materials and devices
Distributed sensors

CHALLENGES

Grow competitive research - win federal center
Build stronger industry partnerships
Recruit top faculty and students
Launch successful startups

BRAIN FUNCTION AND DISEASE SUMMARY

STRENGTHS

Strong research funding over \$85 million
Over 100 PI's
Over 30 issued and pending patents
Some past and new companies
OHSU/Legacy/Virogenomics collaboration

WEAKNESSES

Clinical and translational research weak
Past commercial success limited
Lack of venture funding
Lack of industry funding

OPPORTUNITIES

>\$25 billion markets
Stroke
Obesity
Depression

CHALLENGES

Improve clinical research
Launch successful startups
Build stronger industry partnerships

INFORMATION TO KNOWLEDGE SUMMARY

STRENGTHS

- Very strong applications funding
- Over 300 PI's
- Over 130 industry software patents
- Leading computer company presence
- Many software companies

WEAKNESSES

- CS metrics and ranking relatively weak
- Past commercial success from universities limited
- Few CS-related patents or protected IP
- Few/no university-based startups

OPPORTUNITIES

- Large software/IT market - over \$150B
- Open source (Linux) software and services
- Large scale scientific computing solutions

CHALLENGES

- Build high performance grid computing
- World-class research
- Build stronger industry partnerships
- Recruit top faculty and students
- Launch successful startups

ANALOG AND MIXED SIGNAL CIRCUITS SUMMARY

STRENGTHS

Probable top-10 AMS program at OSU
High % industry-sponsored research
Silicon Forest industry concentration
RFID applications research

WEAKNESSES

Research metrics and ranking relatively weak
No recent Oregon startups
Few university patents and protected IP
Basic university funding weak

OPPORTUNITIES

\$30B AMS semiconductor segment growing
Wireless data communications growth
RFID applications growth
Wireless network security

CHALLENGES

Grow competitive research
Recruit top faculty and students
Launch successful startups

EDUCATION AND BEHAVIOR INTERVENTION SUMMARY

STRENGTHS

Strong funding over \$65 million
About 200 PI's
High ranking academic programs
Some new companies

WEAKNESSES

Little connection to commercial applications
Low interinstitutional collaboration
No industry funding
No university-based startups

OPPORTUNITIES

>\$100 billion future markets
Online education
Educational testing
Educational games

CHALLENGES

Focus on commercial applications
Build stronger industry partnerships
Launch successful startups

Opportunities for South Willamette

- Continue support for MMD as the near term opportunity – based in Corvallis, active in Eugene
- Focus on neuroscience/software interface and Alternative Approaches – Neuroinformatics (Eugene) and Linus Pauling Institute (Corvallis)
- Support computing and network connection infrastructure – Need for rural companies to be competitive
- Develop roadmaps for these three to leverage federal funding and commercial opportunities in Oregon and South Willamette

Opportunities – Longer Term Emerging Clusters

- Enhance research in Analog and Mixed Signal Circuits with focus on wireless – Expertise is high at OSU but needs critical mass of research
- Explore commercialization of strong Education and Behavior research – Research is strong at UO but lacks commercial focus

Summary

- Five areas of research competence with high commercial significance and potential ties to Oregon industry for job creation
- Two areas of research competence with ties to established Oregon industry that could be refocused on job creation
- Opportunities for action

Alta Biomedical Group

Technology Transfer and
Research Commercialization for
Technology-based Economic
Development

In collaboration with

Skip Rung Innovation Advisors