A Meaningfully Unique Institution
UMaine has key components to grow Maine’s economy

Innovation & Economic Development

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The Advanced Manufacturing Center helps Maine companies develop new products
A Meaningfully Unique Institution

UMaine has with all the key components to grow Maine’s economy

- Conducts R&D in all the technology sectors
- Supports company creation, growth and attraction
- Helps develop new products/services
- Creates patents and licenses
- Educates and trains Maine workers
- Educates tomorrows leaders
Economic Development

• Basic Definition
  A. Growth and Expansion of Existing Businesses/Organizations
  B. Business/Organization Attraction and Recruitment
  C. New Business/Organization Starts

• What the State sees as Economic Development
  A. Jobs
  B. Jobs
  C. Jobs

• All Require
  – Ideas, Workforce, Finance, Infrastructure, etc..
Listening to our customers
&
Communicating what we do better

• Stakeholder and focus groups
  – Pull vs. Push: benefits to both
  – Constituent Driven
• Translate results to our customers
• Selling and Responding
Innovation Continuum – R,D,& C

Its Cyclical – not Linear – Series of Handshakes

Basic Research
Science & Technology Drives

Applied Research

Development
Demonstration

Commercialization

Production/
Public Access

+$$

Business &
Markets Drive

$ MVF-- VC ---Equity--- Debt

$ Sales

$$ - Maine Technology Institute
Seed Grants, Development Awards, ACF

$ Fed Grants to
companies SBIR/BAA.

$ Fed Grants
DoD ,DOE ,USDA.

$ Fed Grants –
NIH, NSF, etc.

$ Company Funds – Family, Fools and Friends

GAPS?

Scientists, Inventors, Engineers, Innovators, Entrepreneurs, Business, Marketing
Graduate Students, Undergrads, Entrepreneurial, Interns, Co-ops, Workforce

Univ and Non-profit
R&D

Valley of Death – Skills Gap?
Looking at Partnerships - Leveraging Resources
Making Connections - “Clusters”

- Basic Research
- Applied Research
- Development
  Demonstration
- Commercialization
- Production

- Create
- Commercialize
- Communicate

- Research Univ.
- Research Hosp.
- Non-profits
  Size-varies

- Start-ups
  & SME’s

- A lot in Maine!

- Large Co’s
  Fewer in Maine
  ~50 over 500
  employees

- Valley of Death

- Who is working with who?

- $$
Accelerating the Proactive

Major Increases in Capacity since MEIF

- Pulp and Paper, Process Development Center
- Advanced Structures and Composites Center
- Chemical Eng/FBRI
- Advanced Manufacturing Center
- School of Marine Sciences
- Aquaculture Research Institute
- Food Science
- LaSST
- School of Marine Sciences
- Virtual Environment and Multimodal Interaction (VEMI) Lab
- Innovative Media Research and Commercialization Center (IMRC)
- Foster Center/Target Center
Trade Associations – 7 sectors

Forestry
• Maine Forest Products Council, Maine Pulp and Paper Association, SWOAM, CFRU, etc.

Marine and Aquaculture
• Maine Aquaculture Association, Maine Lobsterman’s Association, etc.

Composites
• Maine Composites Alliance, Maine Built Boats

Environmental Technology
• E2 Tech, Maine Ocean & Wind Energy Initiative

Agriculture
• Maine Potato Board, Maine Wild Blueberry Commission, MOGFA, Maine Dairy Council, Maine Cheese Guild, AGCOM, etc.

Biotechnology
• Maine Biotechnology Association

Information Technology
• TechMaine (gone)

Precision Manufacturing
• Maine Manufacturers Association

Also participation in MTI’s 7 Tech Boards
Technology Transfer

Technology Push

- Publications
- Patents and Licenses
- Spin Out Companies
- Start-ups
- Business Incubators
  - Target Technology Center
  - Ctr Cooperative Aquaculture
  - DMC Aquaculture
- Students @ Foster/IMRC

- 3000-4000/year all types
- Avg 15 filed/year – 5 lic/yr
- 1-2/year
- ??? Various counts
- 3
  - 8 tenants 5 affiliates
  - 3 tenants 3 affiliates
  - 1 tenant
- 3-5 companies at any time
Industry Funding r&D at UM $4.2m FY13

Volume and $’s
• Pulp and Paper, Process Development Center
• Advanced Structures and Composites Center
• Foster Center
• Chemical Eng/FBRI
• Cooperative Extension
• Advanced Manufacturing Center
• School of Marine Sciences

Up and Coming?
• Innovative Media Research and Commercialization Center (IMRC)
• Food Science Pilot Plant
• Aquaculture Research Inst.
• Virtual Environment and Multimodal Interaction (VEMI) Lab
• Others?
The University of Maine has R&D activity with hundreds of Maine companies throughout the State. State wide programs like Cooperative Extension.
Managing Natural Resources

• Marine Fisheries
  – SMS Lobsters, ground fish, shrimp, scallops

• Forests
  – CFRU, - R&D improving productivity,

• Sustainability – SSTI
  – Development Policy and Practice?

• Agriculture/Farming
  – Decades of blueberry and potato work

Constituent Driven – how does it impact Economy?
• In the late 1990s Maine’s Wild Blueberry growers and processors recognized that demand would increase by communicating the health research message to consumers for “Nature’s Antioxidant SuperFruit.”

• Thanks to comprehensive crop production research and development based at the University of Maine, Maine’s Wild Blueberry growers are leaders in the development and adaptation of knowledge-based cropping systems.

• Maine has quadrupled its annual crop yield from 20-million pounds in the 1980s to between 70-million and 100-million pounds today, making Maine the largest producer of Wild Blueberries in the world.

• In 2007, direct and indirect economic impact of the Wild Blueberry business in Maine totaled $250 million.

• Public policy support for farmers and food processors in Maine is a key to reaching future economic potential of up to $500 million in annual economic impact over the next decade.
Multiple Interactions & Connections

SMS - Dr. Huijie Xue
Computer models of Cobscook Bay (EPRI/Various)

Mechanical Engineering
Wave tank, prototypes (ORPC/DOE)

SMS – Dr. Gayle Zydlewski
fish interactions with turbines (ORPC/DOE)

AMC & ME
Structural Analysis Testing

SSI & SMS Stakeholder outreach (NSF)
Workforce

• All these projects involve students
• Real world experience/exposure to opportunities, earn while you learn
  – ASCC over 930 undergrads/120 grads paid to work on projects – since 2000
  – FY13 grants brought in $6 million for student support including wages and tuition
  – Students are getting hired
• Professional staff moving on to industry
Next Steps

• Last decade building capacity and culture
• Need to accelerate
  – More proactive engagement
  – Leading companies to innovate
  – Expand use of UMS assets
  – Connecting-Connecting-Connecting-Connecting
• New Opportunities with Maine Technology Institute