Charter and Scope

The purpose of the Research Reinvestment Fund (RRF) is to strengthen research and development activities that are tied to Maine businesses, and to industries that are critical to the future of Maine. The Board of Trustees (BOT) committed an initial $10.5M (2.1M/year for 5 years) through FY 2019.
Charter and Scope

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RRF activities fall under three major initiatives:

I. Competitive/Seed Grant Funding to UMS Researchers

II. Infrastructure Support for Business Development

III. Infrastructure Support for Research
I. Competitive Grant Funding to UMS Researchers:

• Since 2015, RRF program has received **389** proposals from researchers at all 7 UMS campuses.

• Funded **133** highly competitive projects.

• Awarded a total of **$5.1** million in grants.

*Undergraduate bioengineering students Abby Weigang (left) and Chloe Lilly (right) conducting experiments as full time co-op students supported by RRF-funding.*
RRF-Funded Grantees have:

- Submitted **131** follow-on grant applications, of which **49** were funded.
- Brought in a total of **$14,758,416** in external funding.
- Collaborated with **151** external organizations on their projects.
Private sector relationships stimulated by RRF program support

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<th>Sappi North America</th>
<th>Constellation Consortium</th>
<th>Ready Seafood Company</th>
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<td>Innovation Natural Resource Solutions LLC</td>
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<td>Stryker Orthopedic</td>
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Basic Research

Drummond: Bee research
Hamlin: Ocean Acidification
Rawson: Oyster feeding research
Friess: Finding E in STEM
Smith: STEM classroom activities
Onsrud: Computing across UMS
Abbott: UAV course development
Wahle: Lobster settlement index
Smith: Cardiac tissue repair
Rahimzadeh: Spruce budworm
Kaye: Aging in place
Bouchard: Cellulose Nanofibers (CNF) for vaccines
Brady: Nutrient measurements for shellfish
Jayasundara: Survival rates of fish embryos
Total = 14 grants/projects

Applied Research

Weber: Porous Implants
Tajvidi: CNF Fiberboard
Walsum: Sea vegetable drier
Alyokhin: Aqua-feed production
Bricknell: Super-chill
Gardner: Wood plastic timber
Howell: Paper substrates
Brawley: Algal aquaculture
Carl Tripp: Thermoelectric generator
Schwartz: Mircoalgae biofuel
Depoy: Econsnow
Mason: Porous CNF biomed apps
Beaupre: Cross Laminated Timber (CLT)
Anderson: 3D printer boat building
Tajvidi: CNF for food package
Caccese: Fitness tracking system
Howell: AR respiratory simulator
Vetelino: Sensor development for healthcare
Guidice: App for blind and visually impaired
Sheils (USM): Local transportation decisions
Total = 20 grants/projects

Development Demonstration

Connell: Instaprobe diagnostic tool for beer/wine industry (two seed grants)
Simons-Legaard: Forest management
Dagher: Aqua Ventus Floating Hull
Morse: Sea scallop aquaculture
Goupee: Shellfish nursery upweller
Beaupre: Lobster shell golf ball production
Total = 7 grants/6 projects

Commercialization

Commercialization Working Group developed plan to advance commercial outputs of the portfolio.

Current RRF Seed Grant Continuum
II. Infrastructure Support to the Business Development Enterprise

• In its fourth year of funded activities the RRF program has placed a greater emphasis on accelerating research commercialization.

• **Maine Innovation, Research and Technology Accelerator (MIRTA).**
  - Intensive 16-week program guides participants through customer discovery, market analysis, IP analysis, and business model development.
  - Spring 2018: Five projects involving 14 faculty, staff and students
  - These projects have high potential for successful commercialization as start-ups or licenses to existing Maine companies.
  - Each project will develop a commercialization plan with a strategy for bringing their research to market.
The Office of Innovation and Economic Development (OIED) has focused its business development activities on sector specific strategies for the **forestry** and **marine/aquaculture** industries.

**Forestry:**
- Two companies announced plans to expand cross-laminated timber manufacturing in Maine, with nearly $50 million invested, were directly related to this work. These companies are expected to create approximately 200 jobs. (RRF grant supported a demonstration project)
- *Maine Forest Economy Growth Initiative* developed a roadmap for forest economy and implementation of emerging technologies
Maine Forest Economy Growth Initiative

Roadmap and Vision for Maine’s Forest Sector

Executive Committee = Integration committee

Donna Cassese, SAPPI North America (chair)
Tony Lyons, Catalyst
Benjamin W. Dow, Weyerhaeuser
Scott Madden, Madden Timberlands
Steve Follette, Woodland Pulp/St. Croix Tissue
Anthony Hourihan, Irving Woodlands LLC
Brian Souers, Treeline, Inc.
Scott Madden, Madden Timberlands
Pat Strauch, Maine Forest Products Council
Dana Doran, Professional Logging Contractors of ME
Charlotte Mace, Biobased Maine

Tom Doak, Maine Woodland Owners
Aaron Weiskittel, University of Maine
Jake Ward, University of Maine
Steve Shaler, University of Maine

Steve Schley (chair)

Donna Cassese, SAPPI North America
Jim Contino, Verso
Jim Robbins, Robbins Lumber
John Cashwell, BBC Land
Bob Linkletter, Maine Woods Pellet Company
Peter Triandaflilou, Huber Resources
Scott Madden, Madden Timberlands
Pat Strauch, Maine Forest Products Council
Dana Doran, Professional Logging Contractors of ME
Charlotte Mace, Biobased Maine
Tom Doak, Maine Woodland Owners
Aaron Weiskittel, University of Maine
Jake Ward, University of Maine
Steve Shaler, University of Maine

Advisory:
George Gervais, DECD
John Endicott, DECD
Rosane Pelletier, DECD
Martha Bentley, MTI
Brian Whitney, MTI
Doug Denico, MFS (invited)
Yellow Breen, MDF

Donna Cassese, SAPPI North America (chair)
John McNulty, Seven Islands
Tina St. Jarre, SAPPI North America
Charlotte Mace, Biobased Maine
George Motta, Global leadership perspective
Dan Christensen, Global leadership perspective
Bob Hirsch, Global leadership perspective

Martha Bentley, MTI
Peter DeSico, Maine and Co.
Wade Merritt, Maine International Trade Center
George Gervais, DECD
John Endicott, DECD
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Benjamin W. Dow, Weyerhaeuser
John Bryant, American Forest Management
Scott Beal, Woodland Pulp/St. Croix Tissue
Steve Follette, Woodland Pulp/St. Croix Tissue
Anthony Hourihan, Irving Woodlands LLC
Brian Souers, Treeline, Inc.
Scott Madden, Madden Timberlands
Richard Wing, Richard Wing and Son Logging
Steve Schley, Pinney Associates
Steve Whitcomb, HO Bouchard
Chris Brochu, Pleasant River Lumber
Kip Nichols, Seven Islands
Tim Doyle, MMTA
Bob Thomas, CMQ Railroad
Jim Nelligan, Ports of Searsport and Portland
Dana Doran, PLC
Tom Doak, MWD
Pat Siros, ME Sustainable Forestry Initiative
Nate Moulton, MaineDOT
Marty Rooney, MaineDOT

Peter Triandaflilou, Huber Resources (co-chair)

Aubrey Olver, Seven Islands
Jim Contino, Verso
John Wylson, Catalyst
Kenneth Lausten, MFS
Tom Doak, MWD

Prob: 40-60 people, including at least 2 each from landowners, pulp and paper, sawmills, logging and trucking, biomass-wood energy, also University of Maine, Governor’s Office, legislators, MTI, MITC

Advisory:
Jim Nelligan, Ports of Searsport and Portland

Dana Doran, PLC
Tom Doak, MWD

Steve Schley (chair)

Bob Linkletter, Maine Woods Pellet Co
Jason Brochu, Pleasant River Lumber
Brian Souers, Treeline, Inc.
John McNulty, Seven Islands
Tom Abello, TNC
Ryan McAvoy, SAPPI North America
Bill Bell, Maine Pellet Fuels Assoc
Charlie Nielbogling, Innovative Natural Resource Solutions
Jim Robbins, Robbins Lumber
David Gordon, Katahdin Cedar
Mark Tibbodeau, RE Energy
Dana Doran, Professional Logging Contractors of Maine
Bob Rice, UMaine
Angela Monroe, Governor’s Energy Office
Beka Kosanovic, DOE

Steve Schley (chair)

Charlotte Mace, Biobased Maine
Jake Ward, UMaine
Steve Shaler, UMaine
Herman Pendoe, UMaine
Brian Whitney, MTI
Sarah Bogess, ReEnergy
Doug Cameron, First Green Partners
Geoff Duyk, TPG
Jay Keisling, Joint BioEnergy Institute

Emerging Technologies Subcommittee

Steve Schley (chair)

Charlotte Mace, Biobased Maine
Jake Ward, UMaine
Steve Shaler, UMaine
Herman Pendoe, UMaine
Brian Whitney, MTI
Sarah Bogess, ReEnergy
Doug Cameron, First Green Partners
Geoff Duyk, TPG
Jay Keisling, Joint BioEnergy Institute

Global Market and Benchmarking Subcommittee

Wood Fiber Availability Subcommittee

Transportation Subcommittee

Subsector Analysis Subcommittee

CHP Subcommittee

Marketing Plan Subcommittee

Advisory:
George Gervais, DECD
John Endicott, DECD
Rosane Pelletier, DECD
Martha Bentley, MTI
Brian Whitney, MTI
Doug Denico, MFS (invited)
Yellow Breen, MDF

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Marketing Plan Subcommittee
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**Forestry:**
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- Developed a roadmap for forest economy and implementation of emerging technologies.

**Marine/Aquaculture**
- The *Alliance for Maine’s Marine Economy* (formed with RRF planning grant) is a convener of private industry and public sector efforts to develop and implement new technologies and provide infrastructure for growth.
- As a result of winning a $7 million state bond RFP, the Alliance has recently awarded funds for capital projects for such as seafood and lobster processing, fish aquaculture and seaweed production. These funds also leveraged $7+ million in additional investment.
Alliance for Maine’s Marine Economy members

• University of Maine
  – Office of Innovation & Economic Development
  – Darling Marine Center
  – Maine Sea Grant
  – School of Marine Sciences
  – Aquaculture Research Institute
  – Cooperative Extension
  – School of Food & Agriculture
  – Lobster Institute
  – Center for Cooperative Aquaculture Research
  – UM-Machias Marine Field Station

• External Partners
  – Maine Coast Fisherman’s Association
  – Maine Aquaculture Association
  – Cape Seafood
  – Maine Aquaculture Innovation Center
  – Maine Lobster Dealers Association
  – Maine Lobsterman’s Association
  – Downeast Lobsterman’s Association
  – Gulf of Maine Research Institute
  – University of New England
  – Maine Department of Marine Resources
  – Maine Technology Institute
  – Bigelow Laboratory for Ocean Science
  – Coastal Enterprises, Inc.
  – Island Institute
  – Maine Center for Coastal Fisheries
  – Downeast Institute for Applied Marine Research and Education
  – Maine Fair Trade Lobster
  – Cooke Aquaculture
III. Infrastructure Support to the Research Enterprise

The Grant Development Office (GDO)
- Oversees the RRF Grants program
- Provides grant writing training and support for faculty and students
- Facilitates large center grant teams

Since FY2015 the GDO
- has had a direct hand in securing $24,344,279 in external funding
- conducted 41 grant writing trainings that reached 784 faculty, staff, graduate and undergraduate students.
III. Infrastructure Support to the Research Enterprise

The Office of Research Administration (ORA)
- handles grant administration for UMaine, UM-Machias, and UM-Fort Kent

During FY 2017
- a total of $56,926,782 was received by UMaine from extramural sponsors, a 13% increase over FY 2016
- The number of proposals submitted was significantly greater than the previous year (573 vs. 500 a 15% increase).
RRF Plans for Year 5 Activities

• Increase faculty education and grant writing support for commercialization, industry partnership, and large center grants.

• Continue competitive grant programs to develop new research, commercialization, and workforce development projects and enhance criteria related to private sector engagement, investment, and advancement outcomes.

• Compete an additional round of Phase II Accelerator Grants that provides faculty release time and funding to accelerate commercialization outputs.

• Continue outreach to University of Southern Maine for research, development, and commercialization collaborations.
UMS Research Reinvestment Fund (RRF)
Annual Report of Activities

UMS Board of Trustees Meeting
March 19, 2018