MUS Research Centers and Institutes

BOR Education

March 9, 2017
Introduction

RESEARCH CENTERS & INSTITUTES

• Funded by external grants, contracts & donations
• Research agendas driven by faculty specialties
• Duplication is warranted when highlighting Montana-specific research strengths; invites collaboration

ACADEMIC PROGRAMS

• Generally supported by tuition & general fund
• Formal coursework
• Attempts are made to avoid duplication among campuses
UM Centers and Institutes

Baucus Institute (2015) Dean
Bolle Center (1994) Dean
Broadcast Media Center (1984) Dean
Bureau of Business and Economic Research (1948) VPR
Center for Children, Families, and Workforce Development (2015) Dean
Center for Environmental Health Sciences (2000) Dean
Center for Ethics (1996) Dean
Center for Integrated Research on the Environment (2015) VPR
Center for Natural Resources and Environmental Policy (1987) VPR
Center for Riverine Science and Stream Re-naturalization (2002) Dean
Center for Structural and Functional Neuroscience (2002) Dean
Central and Southwest Asian Studies Center (2010) Dean
Clinical Psychology Center (1983) Dean
English Language Institute (1993) Dean
Flathead Lake Biological Station (1899) VPR
Humanities Institute (2016) Dean
Institute for Education, Research, and Service Dean
Institute for Gerontology Education (2002) Dean
Institute for Tourism and Recreational Research (1988) Dean
Institute of Medicine and Humanities (1987) Dean
Maureen & Mike Mansfield Center (1983) Provost
Montana Avian Science Center (2004) Dean
Montana Biotechnology Center (1996) VPR
Montana Center for Investigation & Treatment of Childhood Trauma (2004) Dean
Montana Center for Work Physiology and Exercise Metabolism (2007) Dean
Montana Cooperative Wildlife Research Unit (1950) VPR
Montana Forest Conservation Experiment Station (1937) Dean
Montana Museum of Art & Culture (1954) Provost
Montana Safe Schools Center (2006) Dean
Montana World Trade Center (1995) VPR
National Center for Landscape Fire Analysis (2010) Dean
Neural Injury Center (2014) Dean
O'Connor Center for the Rocky Mountain West (1992) VPR
Paleontology Center (2005) Dean
Rural Institute on Disabilities (MUARID) (1978) Provost
Shafizadeh Rocky Mountain Center for Wood & Carbohydrate Chemistry (1994) Dean
Western Montana RiteCare Childhood Language and Literacy Clinic (1998) Dean
Wilderness Institute (1976) VPR
MSU Centers and Institutes

- 4-H Center for Youth Development (2002) Director of Extension
- Center for American Indian and Rural Health Equity (CAIRHE) (2016) VPRED
- Agricultural Marketing Policy Center (2001) VP of Agriculture
- Center for Bilingual/Multicultural Education (1982) Dean
- Center for Biofilm Engineering (1990) Dean
- Center for the Communication of Science (2015) Dean
- Center for Computational Biology (1999) Dean
- Center for the Discovery of Bioactive Compounds (1999) Dean
- Center for Health and Safety Culture (2016) Dean
- Center for Interdisciplinary Health Workforce Studies (2016) Dean
- Thermal Biology Institute (2000) VPRED
- Center for Mental Health Research and Recovery (2014) VPRED
- Center for Native Health Partnerships (2005) VPRED
- Center for Research on Chronic Health Conditions in Rural Dwellers (2013) Dean
MSU Centers and Institutes (cont.)

- **Energy Research Institute** (2002) VPRED
- **eXTreme Gravity Institute** (2016) Dean
- Humanities Institute (2005) Dean
- **Local Government Center** (1989) Director of Extension
- **Montana Engineering Education Research Center** (2017) Dean
- **Montana Manufacturing Extension Center** (1989) Dean
- **Montana University System Water Resources Center** (1985) IoE
- **Optical Technology Center** (1985) VPRED
- **Pollinator Health Center** (2016) VP of Agriculture
- **Center for Learning and Teaching in the West** (2005) Dean
- **Spatial Sciences Center** (1989) Dean
- **Spectral Information Technologies Laboratory (Spectrum Laboratory)** (1999) VPRED
- **The Center for Entrepreneurship for the New West** (2001) Dean
- **Wildlife Health and Disease Ecology** (1994) Dean
- **Western Transportation Institute for Advanced Rural Transportation, Technology, Research and Education** (1994) Dean
Other MUS Centers and Institutes

**MSU Billings**
- Center for the Northern Plains (1997)
- Center for Business Enterprise (1984)
- **The Montana Center for Inclusive Education** (1988)
- Women’s and Gender Studies Center (2014)

**MSU Northern**
- Bio-Energy Center (2014)

**Montana Western**
- Charles G. Swysgood Technology Center (1980)

**Montana Tech**
- Center for Advanced Mineral and Metallurgical Processing (1989)
- Center for Advanced Supramolecular and Nano Systems (2007)
- Center for Environmental Remediation and Assessment (2000)
- Rocky Mountain Agile Virtual Enterprise Technical Development Center (2003)
Established by the BoR in 2011 to manage the National Science Foundation EPSCoR RII award of $20M over 5 years, the Institute on Ecosystems (IoE) is a first-of-its-kind experiment for Montana to build a state-wide institute on ecosystem sciences.

- Co-Directors: Dr. Maury Valett (UM) and Dr. Cathy Whitlock (MSU)

- Partners: Montana Tech, MSUB, Montana Climate Office, One Montana, USGS, Montana Water Center, MtnSEON, Aaniih Dakota College, Blackfeet CC, Great Northern LLC, Dept. of Interior NCCSC, Terra.

- Collaborative team: ecology (57), climate science (37), modeling (18), water resources (17), biogeochemistry (15), biological invasions (14), landscape ecology (14), fire (13), microbiology (13), remote sensing (13)
Synergy: Research Center Collaboration

Our veterans deserve the best care possible now and the opportunity to be a part of development of new standards of care.

We have combined the activities of two centers in hopes of improving access to novel treatments in clinical trials:

- Center for Mental Health Research and Recovery - MSU
- Neural Injury Center – UM
- Puget Sound VA
UM National Center for Landscape Fire Analysis

- The FireCenter improves wildland fire management through scientific innovation, creation of management tools, and production of future fire professionals.


- Funding: Primarily federal grants and contracts. Received $900k MREDI award for DroneFire. The Center also provides academic support through the Fire Practicum and the Fire Club.
Notable Successes - UM

**Center for Structural and Functional Neuroscience** COBRE Funding $10.76M, Leveraged non-COBRE Funding $40.5M, 207 publications

**Center for Environmental Health Sciences** COBRE Funding $25M, Leveraged non-COBRE Funding $38.2M, 398 publications

**Center for Biomolecular Structure and Dynamics** COBRE Funding $20.4M, Leveraged non-COBRE Funding $15M, 70 publications

**Center for Integrated Research in the Environment (CIRE)** $45M Army Corps Research Contract

The **Flathead Lake Biological Station** is the second-oldest active biological field research station in the US. It was established in 1899 by its first director, Dr. Morton J. Elrod, UM Distinguished Professor of Biology.
MSU OpTeC

Montana Optics and Photonics Companies
1980 – 2016

Lattice Materials (1989)
Quantum Composers (1993)
Altos Photonics (1995)
New Wave Research/ESI (1998)
Scatterworks (1996)
Image Labs Intl (1993)
Wavelength Electronics (1992)
Scientific Materials/FLIR (1989)
ILX Lightwave/Newopt (1986)
Big Sky Laser Technologies/Quantel USA (1981)
Orionics (1980-1985)

Litron Lasers of N. Am. (2007)
S2 Corp. (2005)
Zdye(2004)
MPA Technologies (2001)
Chronochrome (2000)
PDI Bozeman (2002-2007)
Sensory Labs (2003)
Resonon (2002)
Rasiris (2003)
SensoPath (2003)

Phenix FO (2005)
Fluorescence Innovations (2006-2012)
Pinyon Photonics (2009)
Photon Machines (2008)
Yellowstone Scientific Instruments (2009)
MT Photonics Industry Alliance (2013)
Neuralynx, Inc. (2012)
Advanced Microcavity Sensors LLC (2015)
Revibro Optics (2015)
Laser Diode Source (2014)
Bridger Enterprises (2013)
MicroLab (2011)
Montana Instruments (2009)
NWB Sensors (2008)
New Gate Technologies (2007)
Bridger Photonics (2006)

Notable Successes - MSU

Center for Biofilm Engineering (1990s) – EPSCoR - has generated funding >$75M, more than 1050 publications, awarded 235 graduate students with advanced degrees, and partnered with more than 100 companies.

Center for American Indian and Rural Health Equity - COBRE funding of ~$11M. Focused on reducing health disparities in Montana’s tribal and non-tribal rural communities through community-based participatory research.

Center for Mental Health Research and Recovery (2014) addresses mental health and suicide. The CMHRR has introduced novel suicide prevention methods in schools statewide.

The Energy Research Institute (2002) has sustained funding of >$75M with projects on fossil fuels, alternatives, smart grids and energy security.

The Western Transportation Institute is focused on improving rural transportation options and is designated a top 10 National University Transportation Center in the U.S. Expenditures are >$6M yearly.
Challenges/Opportunities

• Funding

• Duplication of effort

• Sunsetting of inactive centers
Benefits of Research Centers

- Magnify research strengths
- Create vibrant communities for students, faculty and staff
- Increase visibility for grant applications
- Enhance faculty recruitment and retention
- Can leverage resources across and between universities
- Provide expertise for mentoring and advising
Questions?