

Board Phone Meeting  
April 30, 2015

**April 30, 2015**  
**Board Meeting**  
**Takada Vaccines, Inc. – Bozeman**  
**8:30 a.m.**

**Board Members**

**Attending:** Marty Connell, Chairman  
Robert Bargatze – Left the meeting at 8: 43 a.m.  
Prairie Bighorn – Joined the meeting at 11:15 a.m.  
Jim Davison  
Larry Farrar  
Eric Fulton

**Others**

**Attending:** Dave Desch, Executive Director  
Jane Todd, Program Specialist

**I. Call to Order**

Chairman Marty Connell called the meeting to order at 8:37 a.m.

**II. Board Member**

Rob Bargatze regrettably announced his resignation from the Board. Pursuant to a recent compliance policy within his company, he can no longer serve in a role that is associated with making funding decisions. He stated he has enjoyed participating in the state economic development efforts and looks forward to similar opportunities in the future.

**III Approve Board Minutes of March 19, 2015, Meeting**

The minutes of the March 19, 2015, Board meeting were approved as presented.

**III. Legislative Impact**

Dave Desch summarized the impact of the recent legislative session on the MBRCT program.

HB2 – The Governor’s request for a budget increase for the program did not make it out of committee. The annual statutory appropriation remains at \$1.275 million.

HB 252 - Revise Laws Related to the Uses of the Research and Commercialization Account – Sponsored by Representative Kelly McCarthy

This bill removes the 30% quota for Clean Coal/Renewable Resources projects and becomes effective July 1, 2015.

SB 367 - Clarify General Fund Transfers to Research and Commercialization Account – Sponsored by Senator Janna Taylor

Currently, the statutory appropriation for the MBRCT special revenue account comes from the interest income of the coal severance tax permanent fund that is deposited in the

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general fund. Passage of SB367 provides for a statutory appropriation of \$1.275 million annually from the general fund to the special revenue account.

#### MUS Research Initiative

A successful effort was made by the Office of the Commissioner of Higher Education to obtain \$15 million in HB2 funding for the 2017 biennium for the Montana University System Research Initiative. The Commissioner's office has released a call for proposals with a deadline of May 26, 2015.

#### **IV. Review of Proposals Submitted March 2, 2015**

Dave Desch summarized the process for reviewing proposals submitted March 2nd. All of the proposals are discussed with the intended outcome being a list of proposals that will be asked to make presentations. Funding decisions will be made at a subsequent meeting.

#### **Hold Category**

The Board discussed the following proposals and decided to put them in a "hold" category:

##### #16-02 Serious STEM Games to Educate Middle School Students

Paulette Jones, Meadowlark Science & Education LLC, Missoula - \$32,477

The Board expressed concerns:

The Board has better research projects to consider

##### #16-18 Water Treatment Concepts – Electrolysis and Magnetic Water Treatment

Niko Little, Aquor, Bozeman - \$76,350

The Board expressed concerns:

Relative to other projects this proposal did not fare well

##### #16-05 Engineering Evaluation to Determine the Feasibility of Reviving

##### Magnetohydrodynamic Energy Conversion by Integration with Concentrated Solar Power

Thomas Burkhart, MSE Technology Applications, Inc, Butte - \$426,043

The Board expressed concerns:

Skeptical about project from a technical perspective

No peer review, budget justification

Large funding request represents over half of available MBRCT funding

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#16-12 Nutrition Monitor (NuMo2): Facilitating Awareness of Nutritional Intakes through the Use of Engaging Mobile Phone and Tablet Technologies  
Clement Izurieta, Montana State University, Bozeman - \$78,410

The Board expressed concerns:

- Commercialization is weak
- Funding request large for this type of project
- Concern that funding apps are not good use of Board money

The Board then continued the review of the proposals.

#16-01 Antilipidemic and Anti-adipogenic Impact of PTBP in Mildly Hyperlipidemic and Overweight but Otherwise Healthy Volunteers  
Jeff Golini, All American Pharmaceutical Inc., Billings - \$12,500

The Board liked this project because:

- Previous success with MBRCT funded projects
- Short-term commercialization
- Successful company
- Great performance on previous projects
- Potential for commercialization if research is successful
- Reasonable funding request

The Board expressed concerns:

Current proposal is an improvement on previous efforts, but could still use some improvements.

#16-03 Enhancement of Applied Research in Biomedicine  
Richard Bridges, University of Montana, Missoula - \$169,543

The Board expressed concerns:

Although the Board has funded this project for the last 15 years and has been very pleased with the results, it may be time to reconsider the Board's commitment. Funding is very limited, and the Board is considering funding other proposals with specific research results.

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#16-04 Demineralized Bone Matrix Bio-Composite Allografts with Enhanced Regenerative Capacity

Mark Schallenberger, Bacterin International, Inc., Belgrade - \$143,386

The Board liked this project because:

- Successful company that is commercializing products
- Good track record – DBM putty has been a good producer
- Excellent proposal presentation

The Board expressed concerns:

- Commercialization likely long-term
- No peer review
- No budget justification

#16-06 A Flexible FPGA Computational Framework for Resonon's Hyperspectral Imagers

Ross Snider, Montana State University, Bozeman - \$137,627

The Board liked this project because:

- Collaborative relationship with university involving students
- Innovative technology
- Company commercializing product
- Outstanding proposal with high potential
- Short-term commercialization

The Board expressed no particular concerns.

#16-07 Structural Analysis and *In Vivo* Characterization of BH31-1 and BH31-1 Derivatives

Kurt Toenjes, Montana State University, Billings - \$92,039

The Board liked this project because:

- Credibility of researcher
- Only research project at MSU Billings
- Good research but harder to fund given limited MBRCT funding

The Board expressed concerns:

- Limited marketing potential
- More of an infrastructure project
- Long-term commercialization potential

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#16-08 Missoula Waste Water Treatment Plant Pilot Biogas Fired Carbon Capture Power Plant

Taylor Woods, Cencom, LTD, Missoula - \$77,838

The Board liked this project because:

Novel technology using methane to make electricity

The Board expressed concerns:

Inadequate information due to implication of proprietary technology  
Relatively long-term commercialization  
Potential budget problems - 40% equipment, 34% undefined contingencies  
No budget justification  
Sources of matching funds  
Investigators should have more experience in this area

#16-09 New Therapeutics for the Treatment of Bovine Mastitis

Nigel Priestley, Promiliad Biopharma, Inc, Alberton - \$75,000

The Board expressed concerns:

What does being in Montana as a “state of convenience” mean?  
Concept questionable  
Long-term commercialization  
Process of getting USDA approval

#16-10 Upgrading Lignin to Renewable Chemicals and Fuels

MD Joyanl Abedin, Montana State University Northern, Havre - \$74,999

The Board liked this project because:

Good science  
Impressive lab geared toward engine testing

The Board expressed concerns:

Low probability of success  
Time to market is relatively long

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#16-11 Cross-Species Conditioned Xenogenic Bone Grafts for Veterinary Medicine  
Jane Shelby, Timberline Creek Biomedical, Bozeman - \$136,345

The Board liked this project because:

- Good chance of success
- Credibility of researcher
- Need for technology great

The Board expressed concerns:

- Use of MBRCT funds toward equipment
- Long-term commercialization

#16-13 Hyperspectral Imaging Using Arrays of Liquid Crystal Filled Optical Microcavities  
Russell Barbour, Montana State University, Bozeman - \$96,000

The Board liked this project because:

- Well-presented proposal
- Significant value and commercialization potential
- Interesting science

The Board expressed concerns:

- Commercialization time frame not clear

The Board requested a presentation of this project.

#16-14 Assessment of CO<sub>2</sub> Enhanced Oil Recovery Opportunities in Montana  
Lee Spangler, Montana State University, Bozeman - \$199,519 (2 years)

The Board liked this project because:

- Follow up on work done on Kevin Dome
- Forward thinking
- Free mapping technology to industry
- Previous MBRCT project successful

The Board expressed concerns:

- Currently have eight grants worth \$75 million – question is why MBRCT funding?
- Long-term
- Undefined track to commercialization

Prairie Bighorn joined the meeting at 11:15 a.m. and Marty Connell described the review process and the work that has taken place this morning. Ms. Bighorn introduced herself and stated she is excited to be part of the group.

#16-15 Improving Multiphoton Stability of Red Fluorescent Proteins  
Mikhail Drobizhev, Montana State University, Bozeman - \$63,750

The Board liked the project because:

- Respect for researcher and previous MBRCT success
- Federal support
- Cross-disciplinary research team
- Good science
- Application to cancer treatment
- Significant market potential
- Synergistic potential to create more research around them

The Board expressed concerns:

- Proposal difficult to read
- Commercialization likely long-term
- Competition for MBRCT funds among more focused projects
- Inadequate commercialization plan

#16-16 RX-Biocharged Prescriptive Biochar with 100 Organic Fertilizer  
Stephen Joseph, BioSynergy Technology, LLC, Butte - \$80,000 (2 years)

The Board liked this project because:

- Evidence that technology works
- Taking a process that works in Australia and applying it to Montana
- Potential to reduce cost for farmers

The Board expressed concerns:

- Need better evidence of viable market

#16-17 Inhibition of Retinoic Acid Metabolism in the Skin for the Treatment of Acne  
Fanny Astruc-Diaz, DermaXon LLC< Missoula - \$59,537

The Board liked this project because:

- Novel treatment to significantly improve patient care
- Small company that is part of the BioTech cluster in Missoula
- Reasonable funding request

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Good NIH reviews  
Potentially significant market  
Applied research

The Board expressed concerns:

No budget justification

#16-19 Enhanced Production of Oleic Acid from Low-Cost Agricultural Feedstocks by an Oleaginous Extremophilic Fungus

Rich Macur, Sustainable Bioproducts, LL, Bozeman - \$108,843

The Board expressed concerns:

Relatively long-term commercialization – 4-5 years  
Cost of transporting feed stock to the refinery  
Chemistry for converting natural products to useable products can be complicated  
Commercialization potential not clear

#16-20 Healthy Forests, Clear Skies

Bradley Layton, Missoula College UM, Missoula - \$229,170

The Board expressed concerns:

Executive Summary assertions not supported by proposal  
Proposal lacks data to support proposed objectives  
52% of MBRCT request for equipment  
Unclear what the science is  
Budget justification not clear

Dave Desch will inform Senator Tester, who furnished a letter of support, of the Board's decision.

#16-21 Recovery of Valuable Product Streams from Waste Copper-Smelter Slag

Courtney Young, Montana Tech, Butte - \$81,797

The Board liked this project because:

Potential for large market  
Potential to hire people and help the environment  
Location of project  
Credibility of researcher

The Board expressed no particular concerns.

The Board requested a presentation.

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#16-22 Development of Bio-fiber Filter to Remove Multi Toxic Metals from Water  
Kumar Ganesan, Montana Tech, Butte - \$98,965

The Board liked this project because:

Addresses a significant current problem

The Board expressed concerns:

Why investigator hasn't attracted other funding  
Technology not novel  
Economic viability  
Lack of economic information

The Board requested a presentation.

**IV. Other**

The next Board meeting will be held May 22, 2015, in Butte, for the purpose of hearing presentations.

**IV. Public comment**

There was no public comment.

**V. Adjourn**

The meeting adjourned at 1:45 p.m.

Respectfully submitted,

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Martin Connell Chairman