

Research Development



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Speed/Research Networking

- This is the 4th Speed Networking Event
 - Overwhelmingly positive feedback
- One goal - faculty hear about research across the university
- A second goal - foster collaborative/multidisciplinary/interdisciplinary research opportunities
- A third goal is to ~~eat~~ network

Strong Support from Federal Funders for Interdisciplinary/Multidisciplinary Research

- “Over the past decade or more, there has been a **marked shift toward scientific research that spans disciplines and organizational boundaries** and is carried out by teams rather than individuals... (from “Addressing Complexity: Fostering Collaboration and Interdisciplinary Science Research at the Smithsonian”, May, 2009)
- “**NSF gives high priority to promoting interdisciplinary research** and supports it through a number of specific solicitations...35% of active NSF solicitations in 2008 included the term “interdisciplinary” (Addressing 21st Century Grand Challenges through Interdisciplinary Research and Education – An NSF Perspective, Richard Boone 2008)
- “**DoD’s Multidisciplinary Research Program of the University Research Initiative (MURI)** supports basic research in the science and engineering areas intersecting more than one traditional discipline... **address issues of critical concern to the DoD**”

Interdisciplinary Research Development at BYU

Research Development (STEM and FHSS) can help in the Interdisciplinary Research (IDR) process

- Identify opportunities
- Help identify collaborators for IDR projects
 - From Speed Networking
 - Presentations from all 4 events are on the Research Development webpage <http://researchdevelopment.byu.edu/resources/faculty-research>
 - Over the past 3 events, ~75% of attendees identified potential collaboration opportunities
 - From database (and other tools) of BYU researchers interests
- Facilitate proposal management for IDR projects
- Schedule use of MacDonald building area allocated for IDR proposals

One Approach to IDR – Develop Projects Related to “Grand Challenges”

- Grand Challenges

“Research themes and questions that have the greatest potential to advance STEM disciplines and to promote human wellness and sustainability (NSF definition)”

- Research Development has

- Identified and organized Grand Challenges from NSF, NIH, USDA, USAID, National Academies of Science and Engineering
- Aligned BYU departments/disciplines with the grand challenges
- Identified funding opportunities associated with grand challenges

- Grand Challenges information researchdevelopment.byu.edu/resources

Examples of Grand Challenges

- Develop food plants to adapt and grow sustainably in changing environments
- Expand sustainable alternatives to fossil fuel
- Develop and manage smart grids
- • Provide access to clean water
- Manage the nitrogen cycle
- Restore and improve urban infrastructure
- Develop better forecasting and proactive mitigation strategies for invasive species
- Reverse engineer the brain
- Increase the spatial resolution of regional climate change models
- Manage and utilize data effectively

Research Development

College of Family, Home and Social Sciences



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Background

- B.A. from BYU in English; J.D. from Washburn University School of Law
- Editor for an educational publishing company
- Legislative Counsel for Kansas State Legislature
 - wrote bills for the Senate Ways and Means committee (saw how state grants allocated)
 - Edited Kansas Statutes Annotated
- Research faculty in the Early Intervention Program at the University of Oregon
 - Wrote and edited large federal grants (which were received)
 - Familiar with pre-award and post-award process

Upcoming Research Development Events

- **September**
 - 9/8 and 9/10 Visit from the Office of Naval Research (students about careers; faculty about research opportunities)
 - 9/10 @12:00 pm in 270 McDonald building: Faculty Proposal Development Workshop Series: Finding Funding and Marketable Ideas
 - 9/16 @ 12:00 pm in 2233 HBLL: Foundation Directory Online Training
 - 9/17 @ 11:30 to 12:30 in 948 SWKT: Foundation Funding Seminar with faculty panel
- **October**
 - 10/21 @ 12:00 pm in 2233 BLL: Pivot Training
 - 10/22 @12:00 pm in 270 MB: Faculty Proposal Development Workshop Series: Persuasive Proposal Writing
 - 10/29 @ 12:00 pm in 270 MB: Writing White Papers and Contacting Funders
- **November**
 - 11/12 @12:00 pm in 270 MB: Faculty Proposal Development Workshop Series: Proposal Editing and Rewriting
 - 11/19 @12:00 pm in 270 MB: Seminar about Department of Energy Funding
- **December**
 - 12/11 and 12/18, 9:00-2:00 in 270 MB: Faculty Proposal Development Workshop Series: “Mini” Bootcamp

Agenda

- Introduction
- Presentations (should have handouts with presenter introduction)
- Fill out survey or provide email response
- Lunch/Network W-170 BNSN

Speed Networking Event, August 25, 2015 (W111 BNSN)

Ira A. Fulton College of Engineering and Technology - College of Physical and Mathematical Sciences - College of Family, Home, and Social Sciences - Marriott School of Management - College of Life Sciences

Welcome 9:30-9:45

Presentations 9:45-11:30

Lunch/Networking (W170 BNSN) 11:30-1PM

Presentations will be posted on the Research Development website

#	Title	Name	Department
1	Welcome and Introduction	Conrad Monson, Kristen Kellems	Research Development
2	Heterogeneous Catalysis, Conversion of Biofuels and CO ₂	Kara Stowers	Chemistry and Biochemistry
3	Analytical Biochemistry, Microbiology, Angiogenesis, Eukaryotic Parasites	Kenneth Christensen	Chemistry and Biochemistry
4	Probabilistic programming: beyond graphical models	David Wingate	Computer Science
5	Computational Creativity: Machines as colleagues	Dan Ventura	Computer Science
6	Analytical Chemistry of Solids	Eric Christiansen	Geological Sciences
7	Teaching Leadership in Teaching and Mentoring	Denise Halverson	Mathematics
8	Direct Search Algorithms for Nonlinear Optimization	Mark Abramson	Mathematics
9	Development broadband reflective coatings For ATLAST & Other LUVOIR space telescopes	David Allred	Physics and Astronomy
10	Applications of Micro and Nanostructured Materials	Robert Davis	Physics and Astronomy
11	Acoustics Research Group	Brian Anderson	Physics and Astronomy, Mechanical Engineering
12	Everything You Thought You Knew...	Robert Richardson	Statistics
13	Tissue Engineering and Regenerative Medicine	Lon Cook	Chemical Engineering
14	Nuclear power, nuclear safety, and nuclear reactor design	Matthew Memmott	Chemical Engineering
15	Drug delivery, blood component separation	Bill Pitt	Chemical Engineering
16	Cell-Free Synthetic Biology	Brad Bundy	Chemical Engineering
17	Interdisciplinary Communication: Precision vs Understanding	Joseph Ekstrom	Information Technology
18	Analog/Mixed Signal Integrated Circuits	Shiuh-hua Wood Chiang	Electrical and Computer Engineering
19	3d printed microfluidics	Greg Nordin	Electrical and Computer Engineering
20	BYU MRI Facility	Neal Bangerter	Electrical and Computer Engineering
21	FLOW Lab: FLight, Optimization and Wind Lab	Andrew Ning	Mechanical Engineering
22	Influence of Aspect Ratio on Heat and Mass Transfer	Brian Iverson	Mechanical Engineering
23	Affirmative Action and Human Capital Investment: Evidence from a Randomized Field Experiment	Joe Price	Economics
24	Education Research in the Life Sciences	Jamie Jensen	Biology
25	Helper T cell role in Immunity to Infection	Scott Weber	Microbiology and Molecular Biology
26	Conserved pathways involved in regulating central metabolism	Julianne Grose	Microbiology and Molecular Biology
27	Molecular Pathways of β -cell Function and Proliferation	Jeffery Tessem	Nutrition, Dietetics, and Food Science
28	Gene Regulatory Networks In The Developing Heart	Jonathon Hill	Physiology and Developmental Biology

Attendance August 25, 2015

Name	Email	Phone
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College of Life Sciences

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Physiology and Developmental Biology

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