

# Discovering the Possible: Tools for Collaborative Learning and Improved Outcomes

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# Background ...

- Complexity of issues and decision-making ... status quo is insufficient to deal with relationships between air, land, water and biodiversity
- Interests vs. Positions
- Engaging experience and real-world actors is key to success
- Tackling reality in a virtual world, not a theoretical world

# Approach ...

- Bring together the 'best' of science, practice and policy to discover and implement adaptable solutions to meet Alberta's social, environmental and economic needs in response to ongoing change/uncertainty
- Develop a long-term view of the requirements for research, training, and the development/refinement of analytical tools to support informed decision-making

# University Contributions ...

- Emerging increased focus on capitalizing on research findings to meet provincial priorities and to support economic development,
- Campus Alberta has a significant depth of expertise in teaching, research and working with communities, government and industry
- There is little appetite for duplication of activities, but heightened appetite for increased collaboration and added value

# U of L Strengths ...

- WISE, Water Institute for Sustainable Ecosystems
- ATIC, Alberta Terrestrial Imaging Centre
- Prentice Institute for Global Population and Economy
- ARRTI, Alberta RNA Research and Training Institute
- CSRMM, Centre for Socially Responsible Marketing

*5 of 9 existing U of L research organizations have water, land, biodiversity and community as research focus areas.*

# Capacity ...

- WISE ... Full range of water expertise, advanced and modern laboratory facilities designed to answer complex questions, complimented by physical geographers, economists, agrologists and policy expertise
- Long history in use of analytical tools (models) and visualization (GIS)
- Leading development of new modelling and monitoring approaches ... Functional environmental flows ... Riparian systems ...

# Capacity ...

- ATIC ... Single largest aggregation of hyper-spectral imaging scientists in western Canada, global experience in advanced remote sensing, on campus earth satellite receiving station, focussed on the development of tools and applications to support decision-making, excellent connections and collaboration with industry
- Developing expertise and tools for large landscape monitoring and reporting

# Capacity ...

- Prentice Institute ... Trans-disciplinary global experience in addressing issues of population growth and economy with a focus on policy relevant outcomes
- ARRTI ... Leading advances in synthetic biology to address human health & industrial issues, undergraduate team developed petrochemical-eating bacteria, only Canadian team in 2011 at MIT iGEM competition, top 4 globally



# Capacity ...

- Centre for Socially Responsible Marketing ...  
Focussed on supporting/training NGOs, community organizations, business in leading behaviour change for specific outcomes
- Other campus expertise focussed on aspects of the air, land, water & biodiversity space – chemistry, media arts, management, computing science, environmental education, etc
- Strong partnerships in the area of open, transparent access to data and commercial tool development

# Experience/Opportunity ...

- Long history of collaboration with community, government and private sector in responsible natural resource management
- Specific interest in development of tools, models as key components of research and teaching/training
- Experience in use of ACRU, OASIS, SWAT, G-EPIC, I/O economic models and in development/piloting of new approaches

# Experience/Opportunity ...

- Well developed collaborative relationships within Campus Alberta, Canadian Water Network, national and international organizations
- Going forward ... Development/deployment of trans-disciplinary, multi-institution undergrad and graduate student training focussed on integrated natural resource management with an emphasis on environmental modelling

# Experience/Opportunity ...

- Going forward ... Initiation of specific on-line and on campus training resources for professional and executive training – extending research findings & opportunities into the workplace
- Going forward ... Fostering new approaches to research and knowledge mobilization, secondments, internships, fellowships

# Closing Observations ...

- U of L is well positioned to contribute to the development and refinement of evidence-based analytical tools across much or the air, land, water & biodiversity spectrum
- Collaborative processes that involve shared learning and making use of (capturing) experience will enhance research, training and realization of improved outcomes

# Questions ...



**Research InfoSource Names University of Lethbridge, University of the Year 2012 (Undergraduate)  
Accolades from Maclean's and Globe and Mail**