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<b>Presenters/Affiliations:</b>	Robert W. Blake <b>Cornell University</b>	Guillermo Ríos Arjona <b>Universidad Autónoma de Yucatán</b>
<b>Contact Information:</b>	01-607-255-2858 <a href="mailto:rwb5@cornell.edu">rwb5@cornell.edu</a>	52-999-942-3200 <a href="mailto:goatrios@yahoo.com">goatrios@yahoo.com</a>

**Discussion 5: Agriculture and Rural Development**

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**Part I:** Summary of project elements inviting successful outcomes in rural communities.

**Student Drivers of Change: Future Rural Entrepreneurship Leaders.** Our project activities—short courses, multicultural field laboratories and joint courses, short-term and graduate degree trainings and research—helped to **better define and understand problems** affecting farmers in the Gulf region. During this process Mexican **students identified opportunities for more effective university engagement** in efforts to advance equitable economic growth. They initiated discussions with university faculty and administrators urging **new approaches and institutional arrangements** to better understand and to serve rural communities and farmers, especially disenfranchised small holders. Our **experiential learning**, “living laboratory” yielded rich ideas as students from seven countries shared perspectives in farmer’s fields and villages—a key **mechanism for problem analysis** and a key benefit of institutional collaboration. Mobilizing university intellectual resources and curricula in broad-based partnerships are also investments to catalyze rural entrepreneurship and economic development. Actions that strengthen connections with farmer, governmental, nongovernmental and other civil organizations help tie university programs to a services and outreach agenda for problem solving, village-level value addition and job (income) creation. Our project has helped foster **attitudinal changes and student-faculty dialogue** about better solving agricultural problems. In response to identified needs, and as part of independent-study explorations during short-term training, Mexican student initiative and leadership led to the creation of civic associations that can access federal funding for projects targeting the needs of rural communities. Universities, the future professionals they train, and rural citizens could benefit from harnessing, expanding and institutionalizing this initiative.

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**Part II:** Partnership contributions to the conference objectives.

- How has your partnership identified new opportunities for sustainable collaborations?

Through fruitful interactions, all teaching, training and research activities helped to define and better understand problems affecting farmers in the Gulf region. These activities also helped recruit student and faculty attentions to the assessment of, and potential action upon, technology, market and policy options for improved productivity and higher rural incomes.

The “living laboratory” field course—putting together in farmer’s fields students and faculty, farmers and other Mexican professionals—developed strong cross-cultural teams that analyzed constraints affecting farmers and rural communities. This experiential learning approach helped to better focus thesis projects on small holder problems in the sheep and cattle production sectors<sup>1,2</sup>. Entrepreneurial students have taken action to create new civic associations for outreach support of indigenous communities. Entrepreneurial professors have formed faculty action groups to motivate multidisciplinary thinking, re-evaluation of priorities and collaboration, including funding strategies for research and outreach (e.g., Fundación PRODUCE, CONACyT).

- How has your partnership developed new networks of ideas and contacts to promote agricultural development and improve life in rural communities?

Our partnership has enhanced the capacities of member institutions and individuals to address relevant ruminant livestock system issues through systems-oriented training for researchers and extensionists and broad dissemination of information to the livestock sector. UADY students initiated discussions with university faculty and administrators urging new approaches and institutional arrangements to better understand and to serve rural communities and farmers, especially disenfranchised small holders. As previously indicated, UADY faculty members are working to build stronger ties between the university, as a driver of socio-economic development, and farmers and their organizations by focusing on technology and information support of the ruminant livestock enterprise.

- How has your partnership identified resources for sustainability and/or gained access to new, potential resources in the private and public sectors?

Additional financial resources have been obtained from Fundación PRODUCE and CONACyT from direct solicitation by UADY faculty. Building on achievements from these investments, including TIES, new and more effective institutional arrangements may lead to yet additional resources from further proposals.

- What potential does your partnership offer for replication in the region, beyond the borders of the U.S. and Mexico?

The combination of multiple types of learning experiences (traditional courses, short courses, experiential living laboratories with an international group of agricultural professionals and collaborative research) under this project appears to be replicable in a variety of other contexts. The implementation of an interdisciplinary, systems-oriented teaching and research program has stimulated better thinking about the origins of research and development issues and appropriate interventions, and is being further explored in US university settings by institutions such as the National Science Foundation. The essential elements of such an approach are recognition that nearly all economic development problems require input from multiple disciplines, and that current systems analysis approaches can provide useful insights.

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<sup>1</sup>Parsons, D., Nicholson, C.F., Blake, R.W., Calderón-Quintal, A., López-Cervantes, C., Torres-Acosta, F., Cámara-Sarmiento, R., and Ríos-Arjona, G. 2006. Characteristics of smallholder sheep farms in Yucatán, and implications for nutrient cycling research. Proc. 13th Australian Agronomy Conference, Perth. [http://www.regional.org.au/au/asa/2006/concurrent/systems/4511\\_parsonsd.htm#TopOfPage](http://www.regional.org.au/au/asa/2006/concurrent/systems/4511_parsonsd.htm#TopOfPage)

<sup>2</sup>Baba, K. 2006. Analysis of Productivity, Nutritional Constraints and Management Options in Beef Cattle Systems of Eastern Yucatán, México: A Case Study of Cow-calf Productivity in the Herds of Tizimín, Yucatán. MS thesis. Cornell University. 86 pp. [http://tiesmexico.cals.cornell.edu/research/documents/kotaro\\_baba\\_ms\\_thesis\\_20061212.pdf](http://tiesmexico.cals.cornell.edu/research/documents/kotaro_baba_ms_thesis_20061212.pdf)