2010-2011 UNM Economics PhD Program Assessment Report

Academic year: **2010-2011**
Department/Program: Economics/Graduate Program
Degree program(s): PhD
Date submitted: Oct. 8, 2011

1. **List the student learning outcomes (SLOs) that were assessed during the academic year, including those for which data were gathered as well as those for which developmental work was done, such as the creation or piloting of assessment measures.**

The following five SLO's were adopted by the faculty in Spring 2008.

A1. Students explain and manipulate complex economic models.

B1. Students use appropriate econometrics to explore economic issues and test hypotheses.

B2. Students undertake original economic analysis.

C1. Students effectively present their work to peers and PhD economists.

C2. Students effectively present their work and economics ideas to interdisciplinary and general audiences, including undergraduate students.

2. **For each learning outcome, describe a) the measures used (at least one-half of the measures used are to be direct measures, and at least one direct measure must be used for each SLO), b) the sample of students from whom data were collected, c) the timetable, and d) the setting in which the measures were administered.**

SLO	Description
A1	a) Measure: Comprehensive Exam in Micro and Macro Theory [DIRECT]. Exam questions cover core theories in micro and macroeconomics and specialty areas. The faculty committee blind-evaluates and scores the exams. b) Sample: 34 exams by PhD students c) Timetable: August 2009- August 2011 d) Setting: Two seven-hour exams in the Departmental Conference Room.
A1, B1, B2, C1	a) Measure: Doctoral Dissertation [DIRECT]. Thesis and Dissertation committees evaluate student work according to professional standards. b) Sample: 8 PhD students c) Timetable: 2008-09 to 2010-11 d) Setting: Dissertation or thesis defense scheduled in the Departmental Conference Room individually for each student when their committee has determined the research adequate to fulfill the requirements.
B1	a) Measure: Comprehensive Exam in Econometrics [DIRECT] b) Sample: 22 exams by PhD students c) Timetable: January 2009, 2010, 2011 and August 2009, 2010, 2011 d) Setting: Eight hour exam administered in the Departmental Conference Room.
A1, B1, B2, C1	a) Measure: Research Paper Requirement [DIRECT]. Committee on Studies mentors the student work. When the committee deems the research paper ready, the student submits the paper to a peer reviewed journal and schedules a departmental seminar. All faculty members attending the presentation complete an evaluation form of the research and the presentation. Providing this feedback pre-dissertation will allow the student adequate time to assess his or her individual strengths and weaknesses and work on areas as necessary. b) Sample: 3 PhD students c) Timetable: 2010-2011 d) Setting: Presentation in Departmental Conference Room, assessment by Committee on Studies, and assessment by journal editor. Out of five students presenting their Research Requirement, one student's paper was published, two students' papers were reviewed, and two have not yet been submitted.
B2, C1	a) Measure: Student paper submissions and publications [DIRECT] b) Sample: PhD students c) Timetable: 2009-2011 d) Setting: Assessment by external reviewers
C2	a) Measure: Students teaching in undergraduate courses [DIRECT] b) Sample: 23 courses taught by PhD students

	c) Timetable: Fall 2010, Spring 2011 d) Setting: UNM classrooms

3. **Describe the results of the assessment. (What do they tell you about student learning? What did you learn about strengths and weaknesses of your program?) If specific results are not available, describe the progress that has been made on the initiatives included in the approved assessment plan.**

A1. Students explain and manipulate complex economic models.

Students' ability to explain and manipulate complex economics models was assessed using three instruments:

- Comprehensive exams
- Research requirement
- Dissertations

Assessment via comprehensive exams

The design of the comprehensive exam allows the examination committee to ascertain if the individual student has a complete knowledge of both microeconomics and macroeconomics. Below is a table outlining the results for the comprehensive exams, for both the microeconomics and macroeconomics components for 2009-11. The most recent results are highlighted in gray.

SLO A1 (Students explain and manipulate complex economic models): Evidence from passage rates of comprehensive exams: 2009-11

	Macroeconomics component			**Microeconomics component**		
	2009	**2010**	**2011**	**2009**	**2010**	**2011**
Number taking	15	15	9	16	15	11
Passed at PhD	8 (53%)	9 (60%)	5 (55%)	8 (50%)	6 (40%)	7 (64%)
Passed at MA level	4 (26%	4 (26%)	3 (33%)	1 (6%)	4 (26%)	1 (9%)
Failed at both levels	3 (20%)	2 (13%)	1 (11%)	7 (44%)	5 (33%)	3 (27%)

The 2011 results reveal that while not all students can explain and manipulate complex economic models, a majority can: 55 percent of students passed the macro component at the PhD level and 64 percent passed the micro component at the PhD level. Compared to the past two years, the share passing the microeconomics component has increased while the share failing both components has decreased.

The table below examines comprehensive exam results in greater detail over the time frame 2009-11. It was during this timeframe that the department switched to administering exams once per year in August. The sample of 34 includes only students who were taking the comprehensive exam for the first time during this period and omits one student who sat for only one portion of the exam. Several facts are notable. First, over this time period, 38% of students passed both the microeconomics and macroeconomics portions of the core exam on the first attempt. This is quite a strong result and shows that a large share of students is able to explain and manipulate complex economic models to the satisfaction of the faculty. Of the 21 students who did not pass on the first attempt, 5 (15%) dropped from the PhD program (taking an MA or dropping from the program completely) while 12 (35%) made a second attempt at the core exam.[1] 42% of those students making a second attempt at the core exam passed. (For comparison, the top tier economics PhD programs have an attrition of at least 30.5 % by the completion of year three and the attrition rate increases with lower tiers (Stock, Finegan and Siegfried, 2009).) This is again strong evidence that a significant share of students are able to explain and manipulate complex models.

SLO A1 (Students explain and manipulate complex economic models): Aggregate results of core exams 2009-2011 and effectiveness of second attempts

Total number of students	34	
	Number	**Percent**
PhD Pass on first attempt	13	0.38
Opportunity for second attempt not yet available	4	0.12
Dropped PhD program	5	0.15
Took core exam second time	12	0.35
Conditional on remaining in PhD program and having opportunity to take core exam a 2nd time		
Attempted but did not pass	7	0.58
PhD Pass on second attempt with 1st attempt score of:		
• PhD/MA	4	0.33
• MA/MA	0	0
• Fail/MA	0	0
• Fail/Fail	1	0.08
• Total	5	0.42

a Excludes 3 students whose first attempt was prior to Aug 2009 and one student who sat for only one portion of the exam

1 Four of the students in this sample are at the beginning of their second year and thus have not yet had an opportunity at a second attempt.

It is worth noting that all but one of the students who passed on his/her second attempt had passed half of the core exam at the PhD level and the other half at the MA level on the first attempt. In fact, there is but one notable outlier who failed part of the core on the first attempt (in fact failing both parts) who was able to pass both the micro and macro components on the second attempt.

These results suggest that we may want to examine the timing of when comprehensive exams are given. Those students who eventually pass were very close to passing the first time. Is it a good policy to keep them waiting for a year before re-taking the exam and perhaps delaying other parts of their program, such as completing the research requirement? The above results show that a student who does poorly on the comprehensive exam on the first attempt has a very low probability of passing on the second attempt. This student will have to wait an additional year to (likely) find out that he/she does not pass on the second attempt. This hinders student progress (particularly if they end up switching to an MA thesis) and is costly for the department if they are receiving student funding.

We examine students' ability to explain and manipulate complex economics models in greater detail by examining how they do on theory versus application questions on the microeconomic component of the 2011 comprehensive exam. The table below breaks out questions by general type of question and question content. The results show that when the students work on a problem that looks similar in format and nature to problems which they have had significant exposure in classes (i.e., A2 and C2), they do well. When there is something out of the ordinary (functional form in A1 or presentation in B2), they leave their comfort zone. When the question is something that has not been covered extensively in a course, they shy away from the problem as shown by the small number of students answering C1 and B1.

SLO A1 (Students explain and manipulate complex economic models): 2011 Microeconomics Results by Question Type and Question Content

	A1	**A2**	**B1**	**B2**	**C1**	**C2**
Question Type	Theory	Theory	Application	Application	Application	Application
Question Content	Duality; Functional Form	Game Theory	Price Discrimination	Market Type; WTP; Marshallian/Hicksian	Expected Value; Uncertainty	Constrained Optimization
N	11	11	4	7	2	9
AVG	1.73	2.27	1.5	1.57	2	2.25
STDEV	1.1	1.1	1	1.13	1.41	0.92
Pass	27.3%	63.6%	75.0%	28.6%	50.0%	44.4%
MP	36.4%	9.1%	0.0%	14.3%	50.0%	22.2%
MP	18.2%	18.2%	0.0%	42.9%	0.0%	33.3%
MF	18.2%	9.1%	25.0%	14.3%	0.0%	0.0%

68% received a P or MP on the theory questions and 71% received a P or MP on the application questions 71%. Both are strong results. For future years, it would be helpful to break questions out on a finer level to more accurately assess theory versus application and to conduct this type of analysis for both microeconomics and macroeconomics.

Assessment via research requirement

Four students presented their research requirement paper to the department in 2010-11. Relevant to this SLO, all attending faculty members as well as their committee scores their presentation on a number of objectives. In the middle of the academic year, these objectives were updated to better reflect our SLOs. Three students were evaluated using this new instrument. One of the new objectives specifically asked for an evaluation of how well the student achieves SLO A1. Each objective is scored out of five points, where a five is best. The results for each student as well as the average are shown below. These results show that on average students are doing a reasonable job of explaining and manipulating complex economic models.

SLO A1 (Students explain and manipulate complex economic models): Evaluation of research requirement					
	Student 1	**Student 2**	**Student 3**	**Average**	**St Dev**
Student explains and manipulates complex economic models	4	2.4	4	3.5	.92

Assessment via dissertations

Two students completed a doctoral dissertation in 2010-11. Relevant to this SLO, each member of their committee scores their dissertation on substance, methodology, and an evaluation of the work as a whole. Each objective is scored out of five points, where a five is best. For 2010-11, the averages for each student as well as the average of the graduating cohort are shown below in gray. The two previous years are also reported.

SLO A1 (Students explain and manipulate complex economic models): Evaluation of dissertations								
	2008-09 (n=4)		**2009-10 (n=2)**		**2010-11 (n=2)**			
	Avg	**Std Dev**	**Avg**	**Std Dev**	**Student #1**	**Student #2**	**Avg**	**Std Dev**
Substance	4.08	1.18	3.125	.53	4.5	4.0	4.25	.35
Methodology	4.33	1.15	3.5	.7	4.75	4.0	4.4	.53
Evaluation of Work as Whole	4.17	1.23	3.1	.53	4.5	4.0	4.25	.35

We learned that on average, dissertations received solid scores on substance, methodology, and an evaluation of the work as a whole. This suggests that students who complete the PhD are able to explain and manipulate complex economic models. The results are comparable to previous years.

B1. Students use appropriate econometrics to explore economic issues and test hypotheses.

Students' ability to use appropriate econometrics to explore economic issues and test hypotheses was assessed using three instruments:

- Econometrics exam
- Research requirement
- Dissertations

Assessment via econometrics exam

The design of the comprehensive exam in econometrics allows the examination committee to ascertain if the individual student has a complete knowledge of the material covered in the three course sequence in econometrics. These classes emphasize an applied econometric approach. The 2011 results were fairly consistent with the 2010 results: during the January 2011 exam (when students take the exam for the first time), 83% of the students passed at the PhD level. Over the six test periods, 77% of all test-takers passed the econometric exam at the PhD level. This suggests that students have the skills to properly apply econometrics to exploring economic issues and testing hypotheses.

SLO B1 (Students use appropriate econometrics to explore economic issues and test hypotheses): Evidence from passage rate of econometrics exam

	Jan 2009	Aug 2009	Jan 2010	Aug 2010	Jan 2011	Aug 2011
Number taking	3	1	10	1	6	1
PhD pass	1 (33%)	1 (100%)	9 (90%)	1 (100%)	5 (83%)	0 (0%)
MA pass	0 (0%)	0 (0%)	1 (10%)	0 (0%)	0 (0%)	1 (100%)
Fail	2 (66%)	0 (0%)	0 (0%)	0 (0%)	1 (17%)	0 (0%)

Assessment via research requirement

Four students presented their research requirement paper to the department in 2010-11. Relevant to this SLO, all attending faculty members as well as their committee scores their presentation on a number of objectives. In the middle of the academic year, these objectives were updated to better reflect our SLOs. Three students were evaluated using this new instrument. One of the new objectives specifically asked for an evaluation of how well the student achieves SLO B1. Each objective is scored out of five points, where a five is best. Students are scoring well on this objective, averaging 4.0 out of a possible 5.

SLO B1 (Students use appropriate econometrics to explore economic issues and test hypotheses): Evaluation of research requirement

	Student 1	Student 2	Student 3	Average	St Dev
Student uses appropriate econometrics to explore economic issues and test hypotheses.	4.75	3.14	4	4.0	0.81

Assessment via dissertations

The following table examines the results for dissertations, which typically have a significant econometric component. Relevant to this SLO, each member of their committee scores their dissertation on substance and methodology. Each objective is scored out of 5 points. The scores for each student as well as the average of the graduating cohort are shown below for 2010-11. We also report the average and standard deviations for the previous two years. We learned that students are scoring well on the methodology criterion suggesting that they are appropriately applying econometrics to address economic issues and to test hypotheses. The results for this year are consistent with previous years.

SLO B1 (Students use appropriate econometrics to explore economic issues and test hypotheses): Evaluation of dissertations								
	2008-09 (n=4)		**2009-10 (n=2)**		**2010-11 (n=2)**			
	Avg	**Std Dev**	**Avg**	**Std Dev**	**Student #1**	**Student #2**	**Avg**	**Std Dev**
Substance	4.08	1.18	3.125	0.53	4.5	4.0	4.25	0.35
Methodology	4.33	1.15	3.5	0.7	4.75	4.0	4.4	0.53

B2. Students undertake original economic analysis.

Whether students are undertaking original economic analysis was assessed using three instruments:

- Research requirement
- Dissertation
- Student publications

Assessment via research requirement

As noted earlier, three students were evaluated on their research requirement using a new instrument that specifically asked that the student be rated on whether they had undertaken original economic analysis. This objective is scored out of five points, where a five is best. The results for each student as well as the average are shown below. The average score was 3.9, with a fairly large standard deviation of 1.03

SLO B2 (Students undertake original economic analysis): Evaluation of research requirement					
	Student 1	**Student 2**	**Student 3**	**Average**	**St Dev**
Student undertakes original economic analysis	4.5	2.71	4.5	3.9	1.03

Assessment via dissertations

All dissertations are assessed on their originality (out of a possible five points where a five is

best). In 2010-11, two students completed dissertations. They scored quite well on originality, averaging 4.13. This score is within the range of previous years.

SLO B2 (Students undertake original economic analysis): Evaluation of dissertations								
	2008-09 (n=3)		**2009-10 (n=2)**		**2010-11 (n=2)**			
	Avg	**Std Dev**	**Avg**	**Std Dev**	**Student #1**	**Student #2**	**Avg**	**Std Dev**
Originality	4.75	0.75	3.13	0.53	4.25	4.0	4.13	.18

Assessment via student publications

Another indicator of original economic analysis is peer-reviewed student publications. In 2009 there were 8 publications co-authored with current or former graduate students, in 2010 there were 12 such co-authored articles, and to date in 2011, there have been six co-authored . The articles are listed in Appendix I. A graduate student was first author on 19 of these publications.

C1. Students effectively present their work to peers and PhD economists.

Whether students effectively present their work to peers and PhD economists was assessed using two instruments:

- Academic placements, student publications, presentations at conferences
- Research requirement

One out of the two Economics PhD students graduating in 2010 obtained an academic position. In addition, the 26 publications co-authored with graduate students or former graduate students since 2009, are indicators of effective presentation (see Appendix A). Students also presented at a number of conferences over the past year.

As noted earlier, a new instrument for evaluating research requirements was implemented in 2010. Three students were evaluated under this updated methodology. Students score quite high on the ability to effectively present their work to peers and PhD economists (4.17 out of 5, on average).

SLO C1 (Students effectively present their work to peers and PhD economists): Evaluation of research requirement					
	Student 1	**Student 2**	**Student 3**	**Average**	**St Dev**
Student effectively presents their work to peers and PhD economists	4.75	3	4.75	4.17	1.01

C2. Students effectively present their work and economics ideas to interdisciplinary and general audiences, including undergraduate students.

Whether students effectively present their work and economics ideas to interdisciplinary and

general audiences, including undergraduate students:

- Awards and presentations at conferences
- Undergraduate teaching

Assessment via awards and conference participation

In 2010-Economics students were awarded Robert Wood Johnson Foundation Center Doctoral Fellowships and Dissertation Fellowships, one Latin American and Iberian Institute Dissertation Fellowship and one Dean's Dissertation Scholarship from the UNM Office of Graduate Studies. Receiving these awards signals that these students were able to translate their research ideas and results into non-technical language that was compelling to a general audience.

In academic year 2010-2011 Economics graduate students presented at professional conferences no less than three occasions.

Assessment via undergraduate teaching

Nineteen students served as PTIs during Fall 2010 and Spring 2011. The average IDEA summary evaluation score was 3.8 (st dev = 0.50) out of 5. A score of 3.9 is considered "good" by IDEA. This is calculated as the average of their score on the three department-identified relevant objectives (gaining factual knowledge, learning fundamental principles, and learning to apply course material), and their ratings on being an excellent teacher, and an excellent course. These scores reflect that PhD students are able to effectively convey economic ideas to undergraduates.

In addition, we received very few complaints about our PTIs in 2010-2011. This suggests that our graduate student PTIs are generally effective at communicating economics ideas to general audiences of undergraduate students.

4. Describe the departmental process by which faculty reviewed the assessment procedures and results and decided on the actions and/or revisions that were indicated by them

The faculty discussed results of the comprehensive exams at meetings in January and September.

Because of our recent Academic Program Review, there has been significant discussion of the PhD program. A self-study of the program was conducted and an external committee visited and evaluated the program. In a Spring 2011 faculty meeting, a presentation was made on student funding and optimal cohort sizes. During the faculty retreat in August, the faculty discussed the number of fields and the optimal size for the program. The faculty approved significant changes to the curriculum, including changes in fields, field courses, and course material. Discussion on admission standards, recruitment, and timing of the core exams will be held during the 2011-2012 academic year.

A meeting to discuss this report will be held in late October.

5. Describe the actions and/or revisions that were implemented in response to the assessment processes and results.

Over the last several years, a number of actions have been implemented in response to the assessment.

In order for students to better present economics to a general audience, a professional development training programs for PhD instructors was established in 2008-2009. Since then, three to four workshops for PhD instructors, led by the graduate and undergraduate directors, have been held each semester. As part of this program, PTIs conduct peer evaluations. A mini-handbook is given to all new instructors. In addition, this year, new PTIs were required to participate in university teacher training, through the Department of Communication and Journalism. 3 students participated this year.

An issue that was identified in previous years' assessment is that graduate students tend to present their research requirement papers later in the program (i.e., in their last year), rather than earlier on. Ideally, the research requirement is supposed to take place earlier in their academic career than what we currently are observing. We have attempted to address this issue by more clearly articulating to students the expectation that they should complete this requirement by the end of the third year, providing an informational handout at the start of the second year that reminds students of the need to create a committee on studies. In addition, this year the graduate director and academic advisor met with each of the different cohorts at the beginning of the academic year and stressed the importance of timely completion of the research requirement. The new graduate student orientation emphasized the importance of forming a committee on studies and completing the research requirement in a timely manner. Finally, when students complete their research requirement during the third year, faculty have made a point of this during their introductions at the presentation. Our qualitative perception is that the newer cohorts of students are completing their research requirement earlier on in their program, as intended.

Faculty have felt that students may not accurately understand the comprehensive nature of the exams and were not allocating enough time for studying. A panel of graduate students was convened at the new graduate student orientation to convey the methods by which successful students had studied for the exams and the time required to successfully pass. Individual meetings were held with students who did not pass, to determine a course of action for the upcoming year. To identify whether there are systematic areas of theory where students have gaps in knowledge previous exams and exam reports with grades by question should be analyzed in more detail. A first attempt at this type of analysis was made this year for the microeconomics component. This type of analysis will require more planning in the creation of the exam to ensure that the types of questions can be appropriately categorized.

There is a need to institutionalize the collection of graduate student data (presentations, publications, etc).

References

Stock, W.A. T. Aldrich Finegan, and J.J. Siegfried. 2009. "Completing an Economic PhD in Five years: Let the Data (Literally) Speak for Themselves" *The American Economic Review: Papers & Proceedings* 99(2):624-629.

Appendix A: Student Publications

Current Dept. Faculty Dept. of Economics | **Former Faculty (While at UNM)** | **Graduate Student (Current or former)**

Forthcoming 2011

Baker, J., A. Alcantara, and X. Ruan. 2011 . "A Stochastic Version of the Brass PF Ratio Adjustment of Age-Specific Fertility Schedules". *PLoS One*. Forthcoming.

Baker, J., A. Alcantara, and X. Ruan. 2011 . "The Impact of Incomplete Geocoding on Small Area Population Estimates." *Journal Of Population Research*. Forthcoming.

Katuwal, H. and A. Bohara"Coping with Poor Water Supplies: Empirical Evidence from Kathmandu, Nepal", *Journal of Water and Health*. Forthcoming

Milligan, M. , A. Bohara, and José A. Pagán "Assessing Willingness to Pay for Cancer Prevention ", *International Journal of Health Care Finance and Economics*. Forthcoming.

2011

Harris, M., S. Gibson, C. Wang, D. Barber III and S. Orazov. 2011. A Multi-country Perspective of Students' Entrepreneurial Attitudes. *International Journal of Entrepreneurship and Small Business.* Vol. 12, no. 3. pp. 373 – 394.

Koirala, B., H. Li and R. Berrens. 2011. "Further Investigation of Environmental Kuznets Curve Studies Using Meta-Analysis." ***International Journal of Ecological Economics and Statistics***, 2011: 22(S11): 13-32.

2010

Binder, M., J. Chermak, J. Gilroy, K. Krause, J. Thacher. 2010. Gender Pay Differences for the Same Work: Evidence from a United States Public University. ***Feminist Economics***. 16 (4): 16 (4)..

Broadbent, C., D. Brookshire, D. Coursey, V. Tidwell. 2010. Creating Real Time Water Leasing Market Institutions: An Integrated Economic and Hydrological Methodology. ***Journal of Contemporary Water Research & Education***, 144: 50-59.

Broadbent, C., J. Grandy and R. Berrens . 2010. Testing for Hypothetical Bias in a Choice Experiment Using a Local Public Good: Valuing Bosque Restoration." ***International Journal of Ecological Economics and Statistics***, Vol. 19:1-19.

Brookshire, D., D. Goodrich, M. Dixon, L. Brand, K. Benedict, K. Lansey, J. Thacher, C. Broadbent, S. Stewart, M. McIntosh and D. Kang. 2010. Ecosystem Services and Reallocation Choices: A Framework for Preserving Semi-Arid Regions in the Southwest. ***Journal of Contemporary Water Research & Education***, 144: 1-14.

Chary, S. and A. Bohara. 2010. Energy Consumption in Bangladesh, India, and Pakistan: A Cointegration Analysis. ***Journal of Developing Areas,*** 44(1): 41-50.

Chary, S. and A. Bohara, "Carbon Emissions, Energy Consumption, and Income in SAARC countries," *South Asia Economic Journal*, (II:I, 2010: 21- 30)

Halim, N., Ruan, X. and A. Bohara "Healthy Mothers, Healthy Children: Does Mothers' Demand for Antenatal Care Matter for Child Health in Nepal?", Sep. p1-15, 2010, *Oxford Journal of Health Policy and Planning*.

Izon, G., M. Hand, M. Fontenla, and R. Berrens. 2010. A Hedonic Pricing Analysis of Inventoried Roadless Areas and Wilderness Areas in New Mexico. ***Contemporary Economic Policy***, (Published online: DOI: 10.1111/j.1465-7287.2009.00190.x).

Mozumder, P., and R. Berrens. 2010. Social Context, Financial Stakes and Hypothetical Bias: An Induced Value Referendum. ***Applied Economics***, First published online, 2/2/2011 DOI:10.1080/00036846.2010.491468.

Nepal, M., A. Nepal and K. Grimsrud "Unbelievable but Improved Cookstoves are not Helpful in Reducing Firewood Demand in Nepal" *Environment and Development Economics*. Forthcoming. doi: 10.1017/S1355770X10000409, Published online by Cambridge University Press on October 26, 2010.

Price, J., D. McCollum and R. Berrens. 2010. Insect Infestation and Residential Property Values: An Hedonic Analysis of the Mountain Pine Beetle Epidemic. ***Forest Policy and Economics***, 12(6):415-422

Thacher, J., J. Chermak, K. Grimsrud, K. Krause, Price, J. 2010. Invasive Alien Weeds and Western Cattle Ranching: Lessons Learned from Yellow Starthistle in New Mexico, ***Western Economic Forum***, *Western Economic Forum*. 9 (1): 19-26.
2009

Brookshire, D., C. Broadbent, D. Coursey, and V. Tidwell. 2009. Water Leasing: Evaluating Temporary Water Rights Transfers in New Mexico through Experimental Methods, ***Natural Resources Journal***, Vol 49: 707.

Katuwal, H. and A. Bohara. 2009. Biogas: A Promising Renewable Technology and Its Impact

on Rural Households in Nepal. ***Renewable & Sustainable Energy Reviews,*** 13(9): 2668-2674.

Li, H., H. Jenkins-Smith, C. Silva, R. Berrens, and K. Herron. 2009. Public Support for Reducing US Reliance on Fossil Fuels: Investigating Household Willingness to Pay for Energy Research and Development. ***Ecological Economics***, 68(3):731-742.

Mozumder, P., A. Bohara, R. Berrens, N. Halim. 2009. Private Transfers to Cope with a Natural Disaster: Evidence from Bangladesh. ***Environment and Development Economic*s**, 14(2):187-210.

Mozumder, P., R. Helton, and R. Berrens. 2009. Provision of a Wildfire Risk Map: Informing Residents in the Wildland Urban Interface. ***Risk Analysis***, 29(11):1588-1600.

Nepal, M., R. Berrens, and A. Bohara. 2009. Assessing Perceived Consequentiality: Evidence from a Contingent Valuation Survey on Global Climate Change. ***International Journal of Ecological Economics and Statistics***, 14(P09):14-29.

Shepherd, C., K. Grimsrud, and R. Berrens. 2009. Determinants of National Fire Plan Fuel Treatment Expenditures: A Revealed Preference Analysis for Northern New Mexico. ***Environmental Management***, 44(4):776-788.

Vazquez-Mazariegos, W., J. Hernandez-Arce, P. Mozumder and R. Berrens. 2009. Household Willingness to Pay for Safe Drinking Water: Evidence from Parral, Mexico. ***Journal of Environmental Management***, 90(11):3391-3400.