

Interim Report Findings from DMVEP Awards

Grant: 9520288

PI Name: Baron, Jonathan

Title: Development of a Theory of Values and Their Measurement

Amount / Duration (months): \$134,939 / 24

Abstract:

A theory of values and their measurement is developed on the basis of two distinctions among types of values: protected values vs. well-behaved values, and fundamental vs. proxy values. Protected values, in contrast to well-behaved values, resist tradeoffs with other values and concern means rather than ends. Proxy values are stand-ins for fundamental values, to which they are related through beliefs (often uncertain).

Research Areas:

Research Category:

EV 1: New method or theory

Research Topic(s):

Measuring utility, values

Methods:

Primary:

Experiment

Secondary:

Findings:

- In utility measurement tasks, subjects judge the relative utility of two or more objects relative to some zero value. If the subject is asked to produce an amount of money that matches the utility of a certain environmental change, the task is similar to contingent valuation. The biases associated with utility measurement are discussed.
- Several problems of measurement result from the way in which people think about values. These involve difficulty in separating different kinds of values from one another, as well as other difficulties, which are discussed.
- In value measurement, individuals tend to focus on costs rather than the benefits. Judgments of willingness-to-pay for projects are strongly affected by any hints about the costs, holding constant the benefits. This doesn't serve the purpose of value measurement, as it cannot be determined how much people value the end itself (the benefit).
- "Protected values" are concerned more with actions rather than with outcomes. It's something of a moral prohibition; it's the action and intention that matters. Individuals resist responding on WTP for things they value in a special way.

Grant: 8826617

PI Name: Bockstael, Nancy

Title: The Impact of Farmland Preservation Programs

Amount / Duration (months): \$80,860 / 24

Abstract:

The objective is to identify the features of farmland preservation programs that increase the likelihood of landowner participation. Given a specific set of program features, the resulting spatial pattern of preservation can then be predicted.

Research Areas:

Research Category:

D1: Methods and processes

Research Topic(s):

Farmland preservation

Methods:

Primary:

Modeling/Theory Development

Secondary:

General

Findings:

No report.

Grant: 8824679

PI Name: Brookshire, David

Title: Preference Formation and Elicitation in Valuing Non-Market Goods

Amount / Duration (months): \$184,998 / 24

Abstract:

The general research objective of this interdisciplinary project is to investigate the interaction between value formation and value elicitation. The methods employed in this research include a unique combination and sequencing of field surveys and laboratory experiments.

Research Areas:

Research Category:	EV 2: Modification of existing method
Research Topic(s):	Value formation, value elicitation

Methods:

Primary:	Survey
Secondary:	CV-related

Findings:

- The evidence compiled to date supports sensitivity to scope of the good. Estimates of mean WTP are extremely sensitive to the distributional assumption, while estimates of median WTP are much more conservative and stable. The evidence also supports insensitivity to the group-size reminder.
- Of significance is the absence of evidence supporting the "contribution model." Further, our results suggest that telephone surveys may be credible as an alternative to in-person interviews for investigating particular issues in contingent valuation studies.

Grant: 9613458, 8825313

PI Name: Burtraw, Dallas

Title: Effective Environmental Policy in the Presence of Distorting Taxes

Amount / Duration (months): \$400,000 / 24

Abstract:

This project examines the economics of various approaches to environmental policy, taking into account their interaction with preexisting taxes in the US economy. The theoretical and numerical models developed in the project are applied to the U.S. electric utility industry. The project investigates the use of tax revenues to subsidize investments in more efficient or less polluting technologies.

Research Areas:

Research Category:

EV 2: Modification of existing method

Research Topic(s):

Environmental taxes

Methods:

Primary:

Modeling/Theory Development

Secondary:

Other, economic

Findings:

- Preexisting distortions away from economic efficiency raise the cost of environmental regulations to the economy in almost all contexts. Preexisting taxes are an important example of a distortion that raises the cost of environmental regulations.
- The extra cost that is identified in the context of preexisting taxes is an increasing function of the magnitude of preexisting tax rates.
- The extra cost that is identified in the context of preexisting taxes varies significantly according to the type of policy instrument used to impose environmental regulations. The key characteristic is the ability of the instrument to raise revenues that can be used to reduce other preexisting taxes.
- Regulatory design and the decision whether to raise revenue with environmental regulations can be equally as important in terms of economic efficiency as the decision to convert fixed emissions quotas into tradable emissions permits. Tax interactions put the permit system that fails to raise revenue at a significant efficiency disadvantage relative to a revenue-raising environmental tax.

Grant: 8824698

PI Name: Carson, Richard T.

Title: Comparative Statistics of Approaches to Eliciting Economic Values

Amount / Duration (months): \$265,000 / 24

Abstract:

This project investigates a number of stated preference approaches to eliciting information useful for estimating the economic value of a change in an environmental amenity, ranging from an open-ended question which directly elicits agents' WTP for the change to a binary discrete choice question which simply asks agents whether they are willing to pay the stated cost of the change. The research also examines a number of other common approaches, including payment cards, bidding games, double-bound discrete choice, and discrete choice conjoint analysis. Elicitation methods based on ratings and complete rankings are also considered.

Research Areas:

Research Category:

EV 3: Applications and testing

Research Topic(s):

Surveys

Methods:

Primary:

Survey

Secondary:

CV-related

Findings:

- It is difficult to make any general claims about the prospects of particular response elicitation format without further specifying the context being used. It is this context-dependence that appears to give rise to a variety of conflicting claims made in the literature.
- These results will help provide a consistent basis upon which to make predictions about the optimal response to any particular survey question. The model should help researchers make informed decisions about what types of survey questions should be used in different contexts. The model also provides a link between observable behavior in political and private markets and responses to consequential surveys.

Grant: 8824710

PI Name: Cummings, Ronald G.

Title: Valuing Environmental Damages with Stated Preference Methods

Amount / Duration (months): \$115,000 / 12

Abstract:

Two new designs for CV surveys were developed and tested in laboratory experiments. They were found to elicit responses to hypothetical valuation questions that are indistinguishable from parallel valuation questions requiring actual payment.

Research Areas:

Research Category:

EV 3: Applications and testing

Research Topic(s):

Contingent valuation, stated preference

Methods:

Primary:

Experiments

Secondary:

Findings:

- Observations indicate that the model surveys developed for this study eliminate hypothetical bias. There were no significant differences between subjects' responses to evaluation questions in real referenda and in hypothetical referenda using these designs.
- In other words, respondent behavior in hypothetical surveys using either of these two designs comports with behavior observed when actual payments are required.

Grant: 8824705

PI Name: Davis, Graham

Title: Valuing the Stock and Flow of Mineral and Renewable Assets in National Income Accounting

Amount / Duration (months): \$101,000 / 24

Abstract:

The objectives are to assess and critique methods of valuing the stock and depletion of commercial mineral resources, and to improve on and supplement these methods for producing valuation methodologies that take into account price, stock, and development uncertainty.

Research Areas:

Research Category:

EV 2: Modification of existing method

Research Topic(s):

National economic accounts, mineral resources, mining

Methods:

Primary:

Modeling/Theory Development

Secondary:

National account

Findings:

- Many of the valuation rules currently used are by necessity simple, with rules that are modified to suit national income accounting needs. Resultant valuations are subject to substantial error. We present reformulated rules that we feel are more consistent with the economic and financial principles of valuation.
- The Hotelling Valuation Principle, used worldwide for mineral reserve valuation in national income accounting, performs poorly when tested against actual reserve values. The investigators uncover biases in the net price rule, allow for non-constant returns to scale and heterogeneous reserves, and consider the effects of capital constraints on production.
- We present a model of reserve valuation under price uncertainty, with the important finding that the Hotelling Valuation Principle is an upper bound on reserve value under uncertainty, rather than a lower bound.
- We take a first step toward valuing unproved, undeveloped mineral assets using a binomial lattice approach.

Grant: 9815876

PI Name: Dietz, Thomas M.

Title: Local Environmental Decision Making: Non-Mandated Environmental Policies and Public Participation

Amount / Duration (months): \$101,600 / 24

Abstract:

Fifty localities that have been recognized by national organizations for their adoption of voluntary environmental policies are being compared to localities without voluntary policies in the same state or region. The research examines how social, economic, and political factors influence the adoption of voluntary, innovative local environmental policies.

Research Areas:

Research Category:

D3: Other considerations

Research Topic(s):

Environmental decision making, public participation

Methods:

Primary:

Secondary Data Analysis

Secondary:

Other, decision making

Findings:

- While the quantitative analysis identified Democratic partisanship as the most important factor, the initial five case studies suggested that politics more generally facilitated or inhibited policy adoption.
- Economic constraints were far and away the most inhibiting issue these communities overcame (64%). Local officials identified administrative factors (42%) as the second most common barrier, followed by social barriers (38%), political factors (27%), technical factors (25%), then legal problems (20%).
- Citizen influence in the various policy stages occurred more heavily at the beginning and end stages. In most cases, participating citizens were wealthier, better educated, and already active in the community.
- Investigators created two statistical databases and created a statistical program to aid simulations for logistic regression applications for analysis of regional civicness and economic performance.

Grant: R824693

PI Name: Dietz, Thomas

Title: Towards a Social Psychology of Stated Preferences

Amount / Duration (months): \$179,990 / 24

Abstract:

An embedded experiment in a national survey manipulates question wording to focus respondents on different values for some relatively familiar and some relatively unfamiliar problems. The research investigates whether different cues contained in the context of questions highlight different values and lead to different stated preferences.

Research Areas:

Research Category:

D3: Other considerations

Research Topic(s):

Stated preference, social psychology, value elicitation techniques

Methods:

Primary:

Survey

Secondary:

CV-related

Findings:

- The researchers investigated the use of contingent valuation methods for evaluating environmental policies that have substantial impacts on aspects of the world whose social value may not be adequately captured by market prices. Results lend some support of the use of contingent valuation methods in environmental policy.
- While WTP is related to the key variables of the values / beliefs / norm theory of environmental concern, and especially to the willingness to sacrifice dimension of that theory, WTP is not identical to willingness to sacrifice.
- The negative results also lend support to the use of CVM in that changes in payment vehicle and in the kinds of impact information provided in a survey had no effect on stated WTP.
- Variation in individual WTP is driven substantially by differing beliefs about the sensitivity of the biosphere to human intervention and to some extent by differing values regarding environmental change.

Grant: R824706

PI Name: Fischhoff, Baruch

Title: Eliciting Environmental Values: A Constructivist Approach

Amount / Duration (months): \$99,987 / 24

Abstract:

The research involves both theoretical (analyses of existing studies, integrative essays, conceptual analyses) and empirical approaches (focus group discussions, structured open-ended interviews, experiments) to address three foci: (1) how to compose complex questions, (2) how to help respondents produce the best answers possible, and (3) how to characterize the definitiveness of the resulting responses.

Research Areas:

Research Category:

D1: Methods and processes

Research Topic(s):

Eliciting environmental values

Methods:

Primary:

Modeling/Theory Development

Secondary:

General

Findings:

- Concerning people's conceptualization of the effects of budgetary constraints on contributions to environmental goods, the results suggest that people have an understanding of the general issue, which they then have difficulty applying in specific cases.
- The investigators found a willingness among citizens to participate actively in this exercise, and to probe sensibly the supplementary analyses that were made available to them.

Grant: R824671

PI Name: Flores, Nicholas

Title: Environmental Values and National Economic Accounts: A Theoretical Inquiry

Amount / Duration (months): \$40,000 / 17

Abstract:

The objective is to develop a basic theoretical model using economic preference and production theory to determine the contribution of the environment to overall economic welfare.

Research Areas:

Research Category: EV 1: New method or theory

Research Topic(s): National economic accounts

Methods:

Primary: National account

Secondary:

Findings:

- Preliminary findings suggest that even when the environment is properly priced in accordance with consumer preferences and producer technologies, some adjusted measures provide little insight into how welfare adjusts with time.
- Under certain circumstances, adjusted measures may in fact provide the wrong signal, in that the adjusted account may show an increase over time while welfare has instead declined.
- In cross-country comparisons, environmentally adjusted, net consumption measures will, in many cases, preserve the ordering provided by existing accounts that ignore the environment's contribution to the economy.
- Preliminary results suggest that even when environmental values are correctly measured and accounts are adjusted accordingly, the measures should be interpreted with caution. If environmentally adjusted economic accounts are to become an integral part of decision makers' information sets, the potential shortcomings of these accounts need to be recognized.

Grant: R825309

PI Name: Geoghegan, Jacqueline

Title: Ecosystem Valuation: Policy Applications for the Patuxent Watershed Ecological Economics Model

Amount / Duration (months): \$104,685 / 12

Abstract:

The economic and ecological costs and benefits of a number of proposed government policies are estimated, using the joint Ecological Economics Patuxent Watershed Model. This linked ecological and economic model makes possible inquiry into issues of ecosystem valuation.

Research Areas:

Research Category:

EV 3: Applications and testing

Research Topic(s):

Cost-benefit analysis, watershed management

Methods:

Primary:

Secondary Data Analysis

Secondary:

Hedonic estimation

Findings:

- (Preliminary) Econometric results on residential land values demonstrate that individuals value the contribution of open spaces in their neighborhood differently when they are purchasing residential land.
- (Preliminary) "Private" open space (such as agricultural and forestry land uses) are not as highly valued as permanent open space (parklands).

Grant: 9525582

PI Name: Gregory, Robin S.

Title: Methods Development in using Constructive Survey Approaches to Value Nonmarket Environmental Resources

Amount / Duration (months): \$200,000 / 41

Abstract:

The research investigates two environmental survey approaches: the decision pathways approach, which asks respondents a series of interrelated questions, each of which has several answers, and the value integration approach, which identifies the components of value relevant to the issue and assists respondents to make informed tradeoffs.

Research Areas:

Research Category:

EV 1: New method or theory

Research Topic(s):

Ecosystem valuation

Methods:

Primary:

Survey

Secondary:

CV-related

Findings:

- The findings of this project provide evidence that public values for complex environmental assets are not known in advance but rather are constructed in the course of an elicitation process.
- This perspective argues for the adoption of environmental survey and small-group approaches that help participants to understand the attributes and implications of their own values, as well as technical facts, to a greater extent than is typically done at present by economists or policy analysts.
- Two new tools, decision-pathway and value-integration surveys, are accessible and policyrelevant aides.

Grant: 9815382

PI Name: Gregory, Robin S.

Title: Prescriptive Group Decision Processes for Risk Management

Amount / Duration (months): \$249,606 / 24

Abstract:

The investigators will examine the theory of group decision processes, in order to assist stakeholders participating in risk or environmental management controversies to provide useful input to the design of actions and policies. In addition, they will test the effectiveness of these recommendations by establishing criteria for measurement of a "better" decision and designing experiments to test and compare various approaches to group decision making.

Research Areas:

Research Category:

D2: Applications

Research Topic(s):

Group decision making process, stakeholder involvement

Methods:

Primary:

Experiments

Secondary:

Findings:

- Experiments have successfully demonstrated an approach for reducing embedding and these results have been summarized in a paper titled, "Decision Structuring as a Response to Embedding," by R. Gregory et al. (to be sent out for journal review)
- We are working on papers about group processes and decision making based on an EPA coastal estuary project recently completed in Tillamook, Oregon. These papers address public involvement and multiattribute valuation mechanisms.
- The use of a structured decision making approach for evaluating risk communication is the topic for a paper on evaluating NASA's role in the risk communication process surrounding space policy decisions.
- The research has resulted in preparation of a paper focusing on methods for helping resource managers to properly identify objectives, assess tradeoffs, and define alternatives.

Grant: R825824

PI Name: Halstead, John M.

Title: A Comparison of Direct Methods for Valuing Environmental Policies: A Case Study in New Hampshire's White Mountains

Amount | Duration (months): \$159,071 / 24

Abstract:

This study examines means of determining how one aspect of air quality change--visibility-affects consumer surplus and the regional economy, and provides a direct comparison between two of the primary methods of direct valuation, the contingent valuation method (CVM) and conjoint analysis (CA).

Research Areas:

Research Category:

EV 3: Applications and testing

Research Topic(s):

Ecosystem valuation, air quality, New Hampshire, case study

Methods:

Primary:

Survey

Secondary:

CV-related

Findings:

- Preliminary findings indicate there may be subtle differences in the responses to those surveys using the contingent valuation method as compared to the conjoint analysis method.

Grant: R825312

PI Name: Hammitt, James

Title: Valuation of Risks to Human Health: Insensitivity to Magnitude?

Amount / Duration (months): \$377,584 / 36

Abstract:

The goal is to reduce the problem of insensitivity to magnitude variation in CV methods relating to health and environmental studies. Two different survey methods and various communication tools are being tested.

Research Areas:

Research Category:

EV 3: Applications and testing

Research Topic(s):

Contingent valuation

Methods:

Primary:

Survey

Secondary:

CV-related

Findings:

- Results suggest that contingent valuation can provide valid estimates of WTP for mortality risk reduction if appropriate methods are used to communicate the risk change to respondents.
- Preliminary analysis suggests that people do not hold a constant risk posture across pairs of lotteries, but that their preferences depend on the life expectancy and other factors.
- In the results of a phone survey on WTP for an automobile safety device, the investigators consistently found statistically significant differences in WTP using the indifference-risk approach but not using the conventional framework.

Grant: R825825

PI Name: Harvey, Charles M.

Title: A Decision Analysis Framework for Groundwater Remediation

Amount / Duration (months): \$205,000 / 36

Abstract:

The research develops a comprehensive framework for the evaluation of alternative strategies for the cleanup and containment of pollution at a contaminated groundwater site. The framework includes both the identified physical processes and the identified issues of social values. Decision analysis models are linked to groundwater hydrology models.

Research Areas:

Research Category:

D2: Applications

Research Topic(s):

Groundwater remediation

Methods:

Primary:

Modeling/Theory Development

Secondary:

General

Findings:

No report.

Grant: R825310

PI Name: Herriges, Joseph A.

Title: Updating Prior Methods for Non-Market Valuation: A Bayesian Approach to Combining Disparate Sources on Environmental Values

Amount / Duration (months): \$210,199 / 24

Abstract:

The overall goal of this research is to develop techniques for combining and transferring nonmarket valuations. The project will develop and test Bayesian procedures for combining disparate sources of nonmarket valuations and lay a foundation for applying Bayesian techniques to nonmarket valuation.

Research Areas:

Research Category:

EV 2: Modification of existing method

Research Topic(s):

Ecosystem valuation, Bayesian approach, wetlands

Methods:

Primary:

Modeling/Theory Development

Secondary:

Contingent Valuation

Findings:

No results included in annual report.

Grant: R826615

PI Name: Herriges, Joseph A.

Title: An Examination of Utility Consistent Approaches to Modeling Corner Solutions in Recreation Demand

Amount / Duration (months): \$134,759 / 24

Abstract:

The research (1) investigates modeling, specification, and econometric issues associated with utility consistent corner solution models in recreation demand; (2) compares traditional approaches of modeling recreation demand to the utility consistent methods; and (3) applies utility consistent methods to data sets describing recreation use of the Wisconsin Great Lakes Region and Iowa Wetlands.

Research Areas:

Research Category:

EV 3: Applications and testing

Research Topic(s):

Recreation demand, Wisconsin Great Lakes Region, Iowa Wetlands

Methods:

Primary:

Modeling/Theory Development

Secondary:

General

Findings:

No report.

Grant: R825822

PI Name: Hulse, David W.

Title: Establishing Correlations between Upland Forest Management Practices and the Economic Consequences of Stream Turbidity in Municipal Supply Watersheds

Amount / Duration (months): \$320,000 / 36

Abstract:

This project will prepare and apply a framework for estimating the downstream costs from increased sedimentation and determining the extent to which sediment stems from land and reservoir management activities. It will focus on estimating the sediment costs incurred by the City of Salem, Oregon and its water users from such activities in the Santiam watershed, and work with stakeholders and other interest groups to identify and evaluate policy alternatives for managing these costs.

Research Areas:

Research Category:

D2: Applications

Research Topic(s):

Ecosystem valuation, watershed management

Methods:

Primary:

Secondary Data Analysis

Secondary:

Other, economic

Findings:

The current status of the data does not allow conclusive determinations regarding key project questions.

Grant: 9613045

PI Name: Kanninen, Barbara J.

Title: Optimal Experimental Design for Conjoint Analysis

Amount / Duration (months): \$82,563 / 36

Abstract:

This project will determine optimal attribute levels and choice sets for conjoint analysis questions that, given a fixed number of observations, will provide the most information possible about parameter estimators of interest such as mean or median WTP. This research will extend the existing literature on optimal design of conjoint analysis surveys.

Research Areas:

Research Category:

EV 2: Modification of existing method

Research Topic(s):

Conjoint analysis, experimental design

Methods:

Primary:

Survey

Secondary:

Conjoint analysis / MAU

Findings:

- For the multinomial choice model, best information about model parameters can be obtained using the main effects factorial array and using the quantitative attribute to balance responses.
- For D-optimal designs, the optimal number of distinct choice sets is directly proportional to the number of attributes and inversely proportional to the number of alternatives specified for each choice set.
- The quantitative solutions, though dependent on the model parameters, can be approximated by using a sequential approach to collecting data, where the quantitative attribute is updated to move empirical response rates closer to the optimal ones.

Grant: R826611

PI Name: Keller, L. Robin

Title: Assessing Preferences for Environmental Decisions with Long-Term Consequences

Amount / Duration (months): \$181,851 / 24

Abstract:

The research applies multi-attribute utility analysis to examine time preferences; expands previous research on discount rates for monetary consequences to non-monetary consequences; conducts experimental studies to find out what factors have an impact on monetary and nonmonetary discount rates; cross-validates the experimental results with a study of professional analysts; and develops sound assessment procedures to help policy makers determine appropriate discount factors.

Research Areas:

Research Category:

D2: Applications

Research Topic(s):

Decision analysis

Methods:

Primary:

Survey

Secondary:

Conjoint analysis / MAU

Findings:

No report.

Grant: R824711

PI Name: Krupnick, Alan J.

Title: Mortality Risk Valuation and Stated Preference Methods: An Exploratory Study

Amount / Duration (months): \$114,882 / 24

Abstract:

The research focuses on the effect of current age and age of life extension on WTP. An explicit CV instrument, administered in-person with visual aids and a "think-aloud" protocol, is used to help to reveal how individuals process and interpret key concepts (such as small probabilities, tradeoffs, mortality risks, hazard rate etc.) in valuing mortality risk reductions.

Research Areas:

Research Category:

EV 3: Applications and testing

Research Topic(s):

Mortality risk, stated preference, contingent valuation, air quality

Methods:

Primary:

Survey

Secondary:

CV-related

Findings:

- Preliminary results from the pre-tests of the mortality risk questionnaire indicate that individuals are able to distinguish between different magnitudes of small probabilities and are able to make judgments on future risks.
- CV studies of mortality risk present convincing evidence that small changes in probabilities are not being successfully communicated to respondents. This gap can be bridged through carefully designed questionnaires administered in person with extensive use of visual aids.

Grant: R825821

PI Name: Krupnick, Alan J.

Title: Cost-benefit and Uncertainty Analysis for Ambient Ozone Reductions: Development and Demonstration of an Integrated Model and Framework

Amount / Duration (months): \$300,000 / 36

Abstract:

The first goal of the research is to model the ozone non-attainment problem by integrating a stochastic photochemical model of ozone formation into an economic framework for controlling emission of the precursors of ozone under uncertainty. The second objective is to demonstrate how to conduct analyses of alternative ozone reduction policies using this modeling approach and integrating stochastic multi-objective programming models.

Research Areas:

Research Category:

EV 3: Applications and testing

Research Topic(s):

Cost-benefit analysis, ozone reduction

Methods:

Primary:

Modeling/Theory Development

Secondary:

Other, economic

Findings:

No report.

Grant: R826608

PI Name: Krupnick, Alan J.

Title: The Valuation of Mortality Risk Reductions: Application of Two New Survey Instruments

Amount / Duration (months): \$270,000 / 24

Abstract:

The project uses the dichotomous-choice CV approach to administer in person one of two alternative instruments to a sample of 2,000 adults. Major objectives are (i) to develop and test methods for estimating WTP for mortality risk reductions over a person's life cycle; and (ii) to provide the policy community with credible estimates for use in benefits assessments.

Research Areas:

Research Category:

EV 3: Applications and testing

Research Topic(s):

Mortality risk, air pollution

Methods:

Primary:

Survey

Secondary:

CV-related

Findings:

No report.

Grant: R824687

PI Name: Mansfield, Carol

Title: Improving the Responses to Willingness to Accept Questions Using Alternate Forms of Compensation

Amount / Duration (months): \$51,402 / 17

Abstract:

In a survey, respondents are offered three options: receipt of cash as compensation for allowing a decline in environmental quality, receipt of a public good as compensation, or a choice between cash or the public good. Results will indicate whether difficulties in eliciting WTA are due to perceptions of cash as a bribe, difficulties in mentally trading cash for public goods, or other psychological reactions to cash.

Research Areas:

Research Category:	D3: Other considerations
Research Topic(s):	Willingness to accept

Methods:

Primary:	Survey
Secondary:	CV-related

Findings:

- Preliminary results suggest that even when cash is worth more to the individuals than the public good in a simple choice framework, they're more likely to accept compensation in the form of a public good when faced with a "public bad" such as a landfill or local airport noise that would impact their entire community.
- When people are asked whether they would accept compensation to allow a decline in environmental quality, they prefer public goods to cash.

Grant: R826614

PI Name: Mayer, Alex

Title: Multi-Objective Decision Making for Environmental Remediation

Amount / Duration (months): \$253,571 / 36

Abstract:

The objective of the research is to develop, apply and test new algorithms to solve multiobjective groundwater remediation problems. The work focuses on objectives of minimizing cost, risk, and time.

Research Areas:

Research Category:

D2: Applications

Research Topic(s):

Multi-objective decision making, groundwater remediation

Methods:

Primary:

Modeling/Theory Development

Secondary:

General

Findings:

No report.

Grant: R826619

PI Name: Montgomery, Claire

Title: Land Management with Biological and Economic Objectives

Amount / Duration (months): \$131,089 / 27

Abstract:

The research combines biological models of wildlife population dynamics and of timber stand growth with a financial evaluation of timber harvest in a unified framework that can be used by land managers to assist in developing effective management decisions.

Research Areas:

Research Category:

D1: Methods and processes

Research Topic(s):

Bioeconomic model, forest management

Methods:

Primary:

Modeling/Theory Development

Secondary:

General

Findings:

No report.

Grant: 9729229

PI Name: Norton, Bryan

Title: A Multi-Criteria, Dynamic, and Place-Based Approach to Ecosystem Valuation

Amount / Duration (months): \$94,997 / 12

Abstract:

This project explores a new approach to ecosystem valuation by developing a multi-criteria system of environmental valuation for use within locally based ecosystem management processes. The research examines linkages between emerging theories of multi-criteria decision making and new, iterative, and participatory processes for identifying, clarifying, and reconciling competing values.

Research Areas:

Research Category:	EV 1: New method or theory
Research Topic(s):	Preferences and perceptions

Methods:

Primary:	Survey
Secondary:	Non-CV survey

Findings:

This planning grant resulted in development of instruments to evaluate two propositions: (1) individuals' preferences and perceptions can and do change in contexts of community participation processes, and (2) individuals value aspects of the environment in ways that are non-compensable in economic terms.

Grant: R824709

PI Name: Opaluch, James

Title: Developing Conjoint Stated Preference Methods for Valuation of Environmental Resources within their Ecological Context

Amount / Duration (months): \$125,972 / 24

Abstract:

The research investigates conjoint analysis with respect to two questions: 1) the usefulness of valuation methods that do not rely exclusively on money-measures of value; and 2) the potential to extend available methods of resource valuation when individuals face cognitive limits.

Research Areas:

Research Category:

EV 2: Modification of existing method

Research Topic(s):

Ecosystem valuation, conjoint stated preference methods

Methods:

Primary:

Survey

Secondary:

Conjoint analysis / MAU

Findings:

- Conjoint methods have considerable promise in identifying values for environmental amenities, but conjoint faces many of the same challenges as contingent valuation when it comes to measuring monetary values for environmental commodities.
- Informal evidence also showed other possible problems in monetary values. Specifically, at least some respondents ignored costs, unless they couldn't make a choice based only on environmental values, and some respondents selected the more costly alternative believing that the cost was an indicator of the level of environmental desirability provided by a program, which was not the case.
- Conjoint surveys might not provide an advantage over contingent valuation when attempting to estimate monetary values of environmental amenities.

Grant: R826610

PI Name: Opaluch, James J.

Title: Environmental Policy and Endogenous Technical Change: A Theoretical and Empirical Analysis

Amount / Duration (months): \$325,000 / 36

Abstract:

The research develops a framework for identifying cost savings from environmental policy that encourages innovation and applies it to the offshore oil industry.

Research Areas:

Research Category:

DI: Methods and processes

Research Topic(s):

Offshore oil

Methods:

Primary:

Secondary Data Analysis

Secondary:

Other, economic

Findings:

No report.

Grant: 9613493

PI Name: Pfeffer, Max J.

Title: Policy, Norms, and Values in Forest Conservation: Protected Area Buffer Zone Management in Central America

Amount / Duration (months): \$415,759 / 36

Abstract:

This project will evaluate the role of values in environmental behavior, contrasting experiences in Costa Rica and Honduras. The objectives are: 1) to determine the sources of environmental norms and values in economically less-developed settings; 2) to specify relationships between environmental norms and values and forest conservation behaviors in protected area buffer zones; 3) to evaluate outcomes of self-reported forest conservation behaviors with objective measures of forest management and change; 4) to develop policy recommendations on protected area buffer zone management.

Research Areas:

Research Category:

D3: Other considerations

Research Topic(s):

Deforestation, Central America

Methods:

Primary:

Survey

Secondary:

Non-CV survey

Findings:

- Semi-structured interviews were conducted in Costa Rica and Honduras to begin distinguishing locally held conceptual models about forest conservation. Initial interviews suggest that some conceptual orientations are only loosely related to empirical facts.

Grant: 9727375

PI Name: Poe, Gregory L.

Title: Demand Revealing Mechanism for Contingent Valuation Validity Tests: an Experimental Approach Using Appropriate Populations

Amount / Duration (months): \$99,487 / 12

Abstract:

This research has two objectives. The first is to use laboratory experiments to develop a better public goods auction mechanism that can be used as a criterion for public goods validity tests, thus enabling an accurate measure of hypothetical bias in public goods valuation. The second is to provide a more realistic test of the single shot provision point mechanism in field settings, in order to evaluate mechanism effects on hypothetical as well as actual payments.

Research Areas:

Research Category:

EV 3: Applications and testing

Research Topic(s):

Methods:

Primary:

Experiments

Secondary:

Findings:

None

Grant: R824707

PI Name: Rausser, Gordon

Title: Deriving Biodiversity Option Value Within a Model of Biotechnology Research and Development

Amount / Duration (months): \$80,000 / 24

Abstract:

The project derives formulas for computing biodiversity option values within a dynamic model of biotechnological innovation. The approach employs formal economic models and rigorous methods of analysis to clarify the economic effects of introducing new goods, the role of genetic materials as an input to the research and development process, and the imputed option value of the existing stock of genetic resources.

Research Areas:

Research Category:

EV 2: Modification of existing method

Research Topic(s):

Biodiversity

Methods:

Primary:

Modeling/Theory Development

Secondary:

General

Findings:

- The researchers investigated the economic value of biodiversity as an information resource. They found that when scientific models are sufficiently rich to provide useful guides to the search process, promising materials can command significant information rents. Information creates value not so much by increasing the likelihood of a lucrative discovery, but by decreasing search costs in expectation.
- An increase in the payoff to research success has virtually no effect on genetic resource rents. Furthermore, improvements in search technology actually lower the value of promising leads.
- Results of a numerical simulation suggest that bioprospecting information rents could, under reasonable assumptions, be large enough to finance meaningful biodiversity conservation.

Grant: 8825995

PI Name: Rausser, Gordon

Title: Stigma of Environmental Damage on Residential Property Values

Amount / Duration (months): \$42,260 / 12

Abstract:

The hedonic price technique is used to test for stigma from environmental damage on residential property values. Level of environmental quality can be considered to be a qualitative characteristic of a differentiated good market. Consumers can choose the level of environmental quality through their choice of house. Housing prices may include premiums for locations in areas with high environmental quality; price differentials may be viewed as implicit prices for different levels of environmental quality.

Research Areas:

Research Category:

EV 3: Applications and testing

Research Topic(s):

Hazardous waste cleanup, residential property values

Methods:

Primary:

Secondary Data Analysis

Secondary:

Hedonic estimation

Findings:

- Media coverage and high prior risk perception increase current perceived risk. Increased perceived risk surrounding the hazardous waste site, in turn, lowers property values.
- Perceived risk, weighted by distance, has the expected negative relationship with housing price.
- Stigma can be caused by both path dependence and uncertainty, rather than uncertainty alone. Stigma is not the only outcome after contamination. Recovery is also possible.
- Only houses located in a very close proximity to a site are stigmatized. The effect of a site diminishes rapidly with distance.

Grant: R825996

PI Name: ReVelle, Charles

Title: Delineating Optimal Wetland Habitat Corridors for Inclusion in Migratory Flyways

Amount / Duration (months): \$227,858 / 24

Abstract:

The objective of this research is to develop a methodology for systematically identifying and evaluating alternative configurations of wetland habitat sites which could be set aside as protected migration habitat corridors within the Atlantic flyway.

Research Areas:

Research Category:

D1: Methods and processes

Research Topic(s):

Wetlands, migratory flyways

Methods:

Primary:

Modeling/Theory Development

Secondary:

General

Findings:

- The number of sites required in migratory flyways declines as the maximum distance between successive sites is allowed to decrease.
- The models show precisely the range of maximum distances over which a given number of sites is optimal. In the model runs that consider multiple species, the results clearly illustrate the benefits of joint modeling of species.

Grant: 9727376

PI Name: Russell, Clifford S.

Title: Citizen's Preferences for Environmental Options: Evidence on Existence and Triggering

Amount / Duration (months): \$199,979 / 24

Abstract:

This research investigates the possibility that some people may have available two or more preference orderings over unfamiliar environmental options. It tests the hypothesis that by stressing one or another of several "themes" for the questions can trigger predictably different response patterns across subsamples.

Research Areas:

Research Category:

EV 3: Applications and testing

Research Topic(s):

Influencing stated preferences, recreational park

Methods:

Primary:

Survey

Secondary:

Non-CV survey

Findings:

- The survey instrument, with queries fashioned according to one of three frames, was sent to 4500 individuals. Survey net response rate was 54%. Analysis of the respondents vs. nonrespondents does not provide evidence that non-response bias relevant to the purpose of the study is a problem.
- The best level chosen by those exposed to the ecological /'committed' frame was significantly below that chosen by those exposed to the 'private' frame for both forest and lake.
- The public / 'altruistic' frame did not elicit responses so consistent with our hypotheses. For the forest activities, the public frame did elicit a significantly higher best level than the private frame. But for the lake activities it did not.
- For every frame, the worst levels were higher than the best levels on average. Though the size of the difference was smallest for the public frame, we did not see the hypothesized reversal of the positions of best and worst.

Grant: R824699

PI Name: Russell, Clifford

Title: Innovations in the Valuation of Ecosystems: A Forest Application

Amount / Duration (months): \$139,327 / 24

Abstract:

This project experiments with the use of Multi-attribute Utility (MAU) methods as a basis for structuring direct surveys of WTP to maintain ecosystems in particular conditions. Results from MAU methods are compared to a more conventional CV approach.

Research Areas:

Research Category:

EV 3: Applications and testing

Research Topic(s):

Ecosystem valuation, case study, southern Appalachian forest

Methods:

Primary:

Survey

Secondary:

Conjoint analysis / MAU

Findings:

- "Multi-attribute utility" does work as a tool when asking questions concerning a multidimensional ecosystem. The questions can be simplified enough that poorly educated respondents can answer. The survey is long, even after many simplifications.
- Concerning the matter of blended forests, people who have worked through all of the material do not have much trouble when asked to consider changing combinations of all six attributes. Thus, we've seen no intransitivity implied by the preference statements, suggesting no serious confusion.
- Results suggest that a large investment of time and effort in familiarizing respondents with aspects of a complex problem may be as important as the details of the questioning technique employed to seek their preferences and even their WTPs.

Grant: 9815471

PI Name: Sabatier, Paul A.

Title: When Do Watershed Stakeholder Negotiations Work? A Multiple Lens Approach

Amount / Duration (months): \$150,683 / 12

Abstract:

This project investigates: 1) whether consensus-based negotiations are more successful than conventional methods in designing and implementing specific management projects. 2) the relative ability of three theoretical frameworks-to explain whether watershed negotiations reach and implement legally-binding agreements. Data will come from personal interviews and surveys of participants in 60 watershed negotiations.

Research Areas:

Research Category:

D2: Applications

Research Topic(s):

Watershed management, stakeholders, partnerships

Methods:

Primary:

Survey

Secondary:

CV-related

Findings:

- Examined ecological and demographic factors affecting stakeholder partnerships and found the most important ecological factors to be habitat fragmentation, amount of vegetation, and distance from a major road.
- Literature to date on watershed partnerships has been dominated by interpretivist case studies, which tend to view each situation as highly idiosyncratic.

Grant: 9613495

PI Name: Sagoff, Mark H.

Title: Aggregative and Deliberative Contexts for Valuation: A Philosophical Contribution to Experimental Research in Environmental Decision Making

Amount / Duration (months): \$158,043 / 24

Abstract:

Recent philosophical research on democracy and deliberative processes sees the individual, rather than serving as a bearer of prior preferences, as joining in a social process in which public values are constructed. The present research attempts to assess the extent to which the valuation of environmental goods can benefit from discursive, information-rich, and deliberative experimental methods.

Research Areas:

Research Category:

EV 1: New method or theory

Research Topic(s):

Normative judgments, aggregative approaches

Methods:

Primary:

Philosophical

Secondary:

Findings:

- This research examines the relation between economic value as it relates to welfare and willingness to pay (WTP). The research undertaken in this project defends the conclusion that WTP and welfare, within economic theory, are logically equivalent by definition.
- Empirical research consistently has shown that the WTP respondents express on CV studies often reflects what they believe to be right, good, or appropriate from the perspective of the community, not what they believe will benefit them.
- The research found that WTP has no clear relation to any goal or good that society might have a reason to pursue. The research found that one could meaningfully ask why WTP serves as a measure of social value. Having a preference for which he or she is willing to pay may give the individual a reason to try to satisfy it--and should be free to do so, for example in open and equitable markets.
- The P.I. defended the view that regulatory agencies, rather than seeking to maximize welfare, attempt (and should attempt) to 'design for dilemmas.' These agencies pursue their legal and political mandates while at the same time accommodating legitimate economic interests. The agency should see its task not as an economic problem but as a design problem. Stakeholder groups are often better equipped than governmental experts to identify technical means to reconcile political goals with economic interests.

Grant: R826612

PI Name: Salzman, James

Title: Improved Ecosystem Management through Ecosystem Service Valuation: A Legal, Economic, and Scientific Decision Making Model

Amount / Duration (months): \$163,265 / 17

Abstract:

A team of economists, ecologists and legal scholars are working to transform research on ecosystem services into practically useful and significant decision making models that can be used in the contexts of CERCLA site remediation, wetlands banking, and natural resource damages. Empirical research tests the hypothesis that ecosystem services are generally not explicitly valued in agency decision making procedures.

Research Areas:

Research Category:	EV 3: Applications and testing
Research Topic(s):	Ecosystem valuation

Methods:

Primary:	Modeling/Theory Development
Secondary:	General

Findings:

- Based on an assessment of ecosystem services in different settings, researchers determined that ecosystem services are not considered explicitly, although their value can be captured in some instances by use of "umbrella indicators."
- Researchers are using the COPE model to evaluate wetland mitigation banking trades at Little Pine Island in Florida. Results not included in interim status report.

Grant: 9602155

PI Name: Satterfield, Theresa

Title: Distinguishing Values from Valuation in a Policy-Relevant Manner

Amount / Duration (months): \$195,406 / 24

Abstract:

This project will attempt to improve methods for value elicitation. Contemporary techniques such as WTP and cost benefit analysis provide a narrow economic measure of value and fail to include emotional or moral content that is at the core of any value. This research will develop and utilize three experimental techniques for eliciting values embedded in narratives and discourse, and rich in moral and emotional context.

Research Areas:

Research Category:

D1: Methods and processes

Research Topic(s):

Ecosystem valuation, stakeholders

Methods:

Primary:

Experiment

Secondary:

Findings:

- Narrative valuation frames appear to improve respondents' ability to read about a subject, consider a range of values as diverse as cost and spirituality, and then link that content to a specific policy choice.
- Results offer new insights for designing value elicitation tools that permit greater representation of noneconomic dimensions of value in the context of policy decisions.
- Results of an experiment were surprising: the impact of the forest-management narratives on the policy choices was very different from the impact of the statements, despite the substantially identical content. Support for the policy options between the two conditions differed by as much as 40 percentage points. The pattern of impact was not always consistent, just vastly different. Thus, we could only conclude that our task participants listened to and responded differently to narratives as compared to statements.

Grant: 9815473

PI Name: Scholz, John T.

Title: Negotiating For Sustainable Development: An Evaluation of the CBEP Decision Process

Amount / Duration (months): \$100,141 / 36

Abstract:

The research investigates community-based environmental protection agreements in U.S. watersheds. The research uses a transaction cost framework to analyze the factors constraining and facilitating cooperation among the administrators, politicians, and interest groups that negotiate policy agreements cutting across many political jurisdictions.

Research Areas:

Research Category:

D3: Other considerations

Research Topic(s):

Sustainable development, stakeholders

Methods:

Primary:

Survey

Secondary:

Non-CV survey

Findings:

Currently analyzing first round of survey data.

Grant: R824688

PI Name: Schulze, William

Title: Can Contingent Valuation Measure Passive-Use Values?

Amount / Duration (months): \$385,000 / 24

Abstract:

The objective is to address questions about the ability of CV responses to accurately predict actual behavior by comparing alternative CV elicitation methods (open ended, payment card, dichotomous choice, multiple bounded discrete choice, and conjoint / stated preference) with actual participation in a utility green pricing program.

Research Areas:

Research Category:	EV 3: Applications and testing
Research Topic(s):	Contingent valuation

Methods:

Primary:	Survey
Secondary:	CV-related

Findings:

- A one-shot provision point mechanism with money-back guarantee and proportional rebate of excess contributions was tested. The results show that this relatively simple mechanism is empirically demand revealing in the aggregate when used with large groups who have heterogeneous valuations for the public good.
- Field and laboratory experiments were used to test the use of a provision point mechanism to finance renewable energy programs. In contrast to most green pricing programs, relatively high participation is found in the field, while laboratory results suggest that demand revelation is achieved by the mechanism in a single shot environment with a large group of potential participants.
- Provision point mechanisms should be used in contingent valuation validity testing, and employs such a mechanism in a validity study of green electricity pricing. Some upward hypothetical bias is found even when this improved mechanism is used.
- The researchers compared phone and mail responses using a contingent valuation questionnaire. Social desirability effects were more prevalent in phone responses to subjective questions, but do not appear to affect hypothetical participation decisions. Neither mode (phone or mail) appears to dominate from the perspective of providing more valid estimates of actual participation decisions.

Grant: 9815472

PI Name: Shabman, Leonard A.

Title: The Contribution of Economic Information to Environmental Decision-Making

Amount / Duration (months): \$149,666 / 24

Abstract:

Case studies, published materials, and agency guidelines will be used to develop a model of causal relationships between analytical results and final decision outcomes. The preliminary model will be refined through interviews with analysts, lawyers, and public officials involved in the relevant decision process. The pattern model will be used to identify how specific economic information affects final decision outcomes.

Research Areas:

Research Category:

D3: Other considerations

Research Topic(s):

Economics, environmental decision making

Methods:

Primary:

Secondary Data Analysis

Secondary:

Other, decision making

Findings:

- Uniform and general statements about the credibility and influence of different forms of economic information cannot be made. The same form of economic information can have different influence at different times and in different decision settings.
- There is a trend toward greater reliance on negotiation processes to make environmental decisions and less emphasis on analysis of benefit and cost computation as a precondition for any decision.
- The extension to FERC licensing, to water project design and operation and to wetlands permitting decisions is more striking. This raises the question about what form and content of economic analysis might be most credible and influential in decision process that are explicitly organized around stakeholder negotiation.

Grant: R826609

PI Name: Smith, V. Kerry

Title: The Role of Locational Equilibria and Collective Behavior in Measuring the Benefits of Air Pollution Policies

Amount / Duration (months): \$199,948 / 36

Abstract:

The research has three objectives: (1) to extend the spatial equilibrium estimator (SEE) framework to include environmental public goods and to allow for a more detailed characterization of sources of heterogeneity in household preferences; (2) to apply the SEE framework along with conventional hedonic property value and multinomial logit frameworks in the Los Angeles area; (3) to compare the benefit estimates (and sensitivities) implied by each framework for a set of policy alternatives.

Research Areas:

Research Category:

EV 3: Applications and testing

Research Topic(s):

Housing prices, air quality, California

Methods:

Primary:

Secondary Data Analysis

Secondary:

Hedonic estimation

Findings:

Results not included in final report.

Grant: R826616

PI Name: Sohngen, Brent

Title: Estimating the Cost of Carbon Sequestration in Global Forests

Amount/ Duration (months): \$87,401 / 24

Abstract:

The project develops methods for estimating the welfare impacts of alternative forestry strategies for mitigating carbon dioxide emissions. The specific objectives are to (1) develop a model of the marginal cost of carbon sequestration in forests; (2) develop a global carbon storage database for forested Biomes; (3) develop alternative strategies for carbon sequestration in forests and estimate costs.

Research Areas:

Research Category:

EV 2: Modification of existing method

Research Topic(s):

Marginal costs, carbon' sequestration

Methods:

Primary:

Modeling/Theory Development

Secondary:

General

Findings:

No report.

Grant: R825311

P1 Name: Solow, Andrew

Title: Decision making under Uncertainty in the Conservation of Biological Diversity

Amount / Duration (months): \$271,463 / 24

Abstract:

The goal of this project is to develop and evaluate methods for setting species conservation priorities when information is incomplete, in the context of selecting a subset of potential sites for the establishment of biological reserves. The research focuses on three issues: (1) estimating the probability that a species is present in a particular site; (2) identifying the subset of potential sites with maximal expected species coverage; and (3) exploring the extent to which species number can proxy for more refined measures of biological diversity. Alternative approaches will be evaluated in a sequence of experiments using a modified version of the N. American Breeding Bird Survey data set. The project should result in a set of practical methods to guide conservation decision making.

Research Areas:

Research Category:

D1: Methods and processes

Research Topic(s):

Biodiversity

Methods:

Primary:

Experiments

Secondary:

Findings:

No findings included in progress report.

Grant: R825307

PI Name: Swallow, Stephen

Title: Stated Preference Valuation Using Real Money for Forested Wetlands

Amount / Duration (months): \$165,081 / 24

Abstract:

The objectives are to identify critical ecosystem attributes of forested wetlands that contribute to the quality of life and ecological quality, to develop a model of public preferences for alternative attributes and to estimate money measures of value for wetland attributes by survey method which calibrates hypothetical dollar value to real dollar value.

Research Areas:

Research Category:

EV 2: Modification of existing method

Research Topic(s):

Ecosystem valuation, wetlands, New England

Methods:

Primary:

Survey

Secondary:

CV-related

Findings:

- The researchers set out to develop a quantitative model of public preferences for forested wetland attributes in southern New England. The following forest attributes were determined to be important: richness and uniqueness of inhabiting species, accessibility to public, potential for educational uses, location to water bodies, uniqueness of ecosystem functions, size of parcel, characteristics of neighboring land, and adjacency to sanctuaries and other protected land.
- Other important concerns include: preservation of rare ecosystems, linking habitats and large protected area, and protection of many species and large areas of ecological landscape.
- Preliminary study results suggest that hypothetical willingness-to-pay exceeds real WTP, but this may still reflect the free-riding problem (rather than a flaw in the hypothetical survey) or the result may reflect the nature and magnitude of value for the good being offered.
- The preliminary study also found that the specified purpose of monitoring and certain socioeconomic characteristics of the respondents significantly affect a respondent's decision to support volunteer water quality monitoring.

Grant: R826618

PI Name: Teisl, Mario F.

Title: Environmental Labeling of Electricity: Label Design and Performance

Amount / Duration (months): \$72,573 / 24

Abstract:

The research analyzes survey data to measure the effects of providing environmental information on electricity purchase behavior. Primary objectives are to identify the types of environmental information that consumers find useful and understand factors that influence the ability to comprehend and utilize information.

Research Areas:

Research Category:

D3: Other considerations

Research Topic(s):

Environmental labeling, electricity deregulation

Methods:

Primary:

Survey

Secondary:

Non-CV survey

Findings:

- Researchers tested the relative effectiveness of different environmental labeling programs on consumers' choices and rankings of electricity suppliers. In general, Type I environmental labels for electricity suppliers did not alter consumer choice or rankings. More detailed Type III environmental labels altered both choice and rankings.
- Preliminary analysis indicates that an environmental seal of approval used on a product marketed as being low price leads some individuals to view the product as being more expensive despite the low price claim.
- Consumers seem more concerned with the overall cleanliness of electricity, measured in terms of reduced air emissions, rather than the fuels used in electricity production.

Grant: R825826

PI Name: Thayer, Mark

Title: Improving Air Quality Benefit Estimates from Hedonic Models

Amount / Duration (months): \$124,931 / 12

Abstract:

The research critically examines the relative importance of data aggregation, attribute tradeoffs, and variation caused by space and time within a hedonic benefit study using a single, pooled cross-section, time-series data set. The primary focus is on the hedonic price of air quality.

Research Areas:

Research Category:

EV 3: Applications and testing

Research Topic(s):

Hedonic models, air quality

Methods:

Primary:

Secondary Data Analysis

Secondary:

Hedonic estimation

Findings:

- The researchers examined the relative importance of data aggregation, attribute tradeoffs, and variation caused by space and time within a hedonic benefit study. Results indicate that air pollution, as measured by ozone, total suspended particulates, and visibility, is a significant determinant of home sale price.
- Preliminary analysis indicates that previous studies, based both on the hedonic price method and the contingent valuation method, have seriously underestimated the economic value of visibility improvements.

Grant: 9613035

PI Name: Toman, Michael A.

Title: The Transition to "Green" Technology: Implications of Irreversibility and Nonconvexity

Amount / Duration (months): \$71,250 / 12

Abstract:

This research is on the development and adoption of green technology policy tools. This project consists of dynamic modeling of technology adoption decisions taking into account sunk costs, uncertainty and the potential for multiple equilibria.

Research Areas:

Research Category:

D1: Methods and processes

Research Topic(s):

Green technology, economic modeling

Methods:

Primary:

Modeling/Theory Development

Secondary:

Other, economic

Findings:

- If the environment is relatively unpolluted initially then the shadow price of 'dirty' consumption may rise above its long-term level before declining. This 'overshooting' provides the economic rationale for investment in clean capacity.
- The implementation of a nonmonotonic shadow price path in a real policy context is not trivial, so the analysis underscores a dilemma in 'getting prices right.'
- If investment is irreversible, there is more cumulative investment if the environment is dirty initially than if it starts clean.

Grant: 9727797

PI Name: Trumbo, Craig W.

Title: Planned Behavior, Environmental Values and Domestic Water Conservation. A Longitudinal Case Study of the California-Nevada Truckee River Watershed

Amount / Duration (months): \$204,098 / 36

Abstract:

This study uses mail survey methods to examine attitudes and behaviors toward water conservation throughout the Truckee River Watershed in California and Nevada. Understanding how the diverse set of interests within the watershed can cooperate to share a vital, highly variable, and ultimately limited resource will offer valuable lessons.

Research Areas:

Research Category:

D3: Other considerations

Research Topic(s):

Watershed management, domestic water conservation, California-Nevada Truckee River Watershed

Methods:

Primary:

Survey

Secondary:

Non-CV survey

Findings:

- Initial survey data were collected and are undergoing analysis. Collection of second survey data will test predictions of voluntary adoption of water meters.
- We are finding that social norms, attitude toward water conservation, and self-efficacy are very strong predictors of intention to conserve.
- Preliminary findings suggest that targeted communications are at least partially effective in promoting water conservation behaviors in the communities of the watershed.
- Analysis to date has focused on differences in orientation toward water conservation in the communities in the Truckee River Watershed. We find relatively few differences between the communities in terms of demographics or environmental values, but do find significantly different factors predicting intention to conserve, especially when comparing rural and urban communities.

Grant: R825308

PI Name: VanHoutven, George

Title: Valuing Reductions in Environmental Sources of Infertility Risk Using the Efficient Household Framework

Amount / Duration (months): \$170,971 / 26

Abstract:

This research develops and evaluates a methodology for assessing the magnitude of human values associated with reducing infertility risks from environmental sources. The research uses focus groups and other techniques to test hypotheses about how measures of economic welfare based on households' observed or stated decisions relate to the preferences of the individual adult members living in that household.

Research Areas:

Research Category:

D2: Applications

Research Topic(s):

Environmental risk, household decisions

Methods:

Primary:

Survey

Secondary:

CV-related

Findings:

- The research extended the collective model of household decision making to demonstrate its relevance for measuring consumer surplus. The analysis highlights how the concept of an "income sharing rule," which is central to the collective model, can be used to distinguish household members' preferences. It is possible to elicit consumer preferences for reducing infertility risks. In the two pilot surveys, female respondents provided answers to the WTP question that were consistent with economic theory.
- Findings were generally consistent with a "unitary" model of household infertility-related decisions. Under such a framework, household expenditure decisions are treated as if they were the result of maximizing a single utility function subject to a single "pooled" budget constraints.
- Findings indicate a general convergence of preferences between partners regarding childbearing issues. Furthermore, there is little evidence to contradict the income pooling hypothesis for infertility-related decisions. Nevertheless, we cannot firmly reject the collective view of the household, particularly for other types of household decisions.

Grant: 9613626

PI Name: Webler, Thomas

Title: Factors Influencing Participation of Local Governmental Officials in Environmental Policy Making and Implementation

Amount / Duration (months): \$119,100 / 24

Abstract:

This research explores the factors that influence the decision of local government officials to participate in national and regional policy making and implementation efforts, examining particularly decisions about whether or not and how to participate in environmental policy making initiatives sponsored by EPA.

Research Areas:

Research Category:

D3: Other considerations

Research Topic(s):

Local government, watershed management

Methods:

Primary:

Survey

Secondary:

Non-CV survey

Findings:

- Findings are based on interviews with local government officials from three estuary projects in New England. The local officials were asked to rank factors in a way that represented their decision making rationale.
- Availability of time is not the primary factor influencing local government official's decisions to participate in collaborative environmental policy making initiatives sponsored by the EPA.
- People will make time for a project that they believe is needed, has reasonable and clear objectives, will make a tangible difference, and can realistically be expected to accomplish its limited set of objectives, given the resources available.
- Local government organizations with a strong environmental ethic and an ability to make a contribution are likely participants.
- When soliciting participation by local governmental officials, EPA's Watershed Management Project should pay special attention to specifying the project's objectives and ought to make certain that the project is perceived capable of meeting those objectives.

Grant: R825827

PI Name: Werner, Carol

Title: Promoting Proper Use of a Household Hazardous Waste Facility: A Systems Approach

Amount I Duration (months): \$128,211 / 15

Abstract:

The Salt Lake City / County Household Hazardous Waste Facility (HHW Facility) is used as an opportunity to study attitude, motivation, and behavior change. The project uses a combination of individual persuasion and small group involvement to effect change and support the change on a long-term, internalized basis.

Research Areas:

Research Category:

D3: Other considerations

Research Topic(s):

Behavior, household hazardous waste

Methods:

Primary:

Experiments

Secondary:

Findings:

- The researchers worked with church groups on a household toxics reduction program. The data are being analyzed.