

## FROM THE PRESIDENT...

There are a number of new and upbeat developments to report, and one sad, though not unexpected event that many of you are aware of. The latter is the passing of John V. Krutilla, in my judgment the seminal figure in the modern study of environmental and resource economics. I would like to say just a few words about John's accomplishments before going on to the new items.

**John V. Krutilla.** Virtually John's entire career was spent at Resources for the Future (RFF) in Washington, D.C., where in the 1950s and 1960s he made major contributions to the theory and practice of benefit/cost analysis and its application to water resource development projects. But it was "Conservation Reconsidered", published in the *American Economic Review (AER)* in 1967, that opened up whole new areas of inquiry, first explored in the Natural Environments program at RFF, which he founded and directed, and then more widely in the profession. John's basic insight was that the traditional concern of resource conservation—saving stocks of commercial extractive resources for future generations—had become somewhat outmoded due to processes of substitution and technical change, largely market-driven, in the economy. The focus now was more appropriately conservation of the natural environments (and the ecological processes and the values they supported) that might otherwise be developed for the mining or harvesting of extractive resources. The article went on to explore and apply a number of concepts—irreversibility, option value, the asymmetric implications of technical change and evolution of consumer preferences for the valuation of produced goods and environmental amenities, and others—that have been central to much subsequent work in environmental and resource economics. A good deal of the early work at least, including applications to then-celebrated empirical cases, was done by John and his associates at RFF in the 1970s and 1980s. Much more about John's life and contributions can be found on the RFF web page ([www.rff.org](http://www.rff.org)).

**New Management.** As I write, AERE is coming under new management, at least in part. As you saw in your membership renewals last month, all membership

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related services are being taken over by a professional management team from the American Agricultural Economics Association (AAEA). This will have the twin benefits of providing better services—such as credit card payments for all members and on-line transactions—and freeing our Executive Director, Marilyn Voigt, to focus on substantive activities including grant and Workshop management, production of the *AERE Newsletter*, membership development, and support of the AERE Board.

**Revised JEL Codes.** Pursuing a suggestion from Trudy Cameron, AERE Board members Vic Adamowicz and Ian Parry, on behalf of AERE, have worked with the editors of the *Journal of Economic Literature (JEL)*, with further input from Trudy, to develop a new subject classification scheme that reflects the development of the field of environmental economics. As you will see in the current issue of the *JEL*, the existing scheme mentions the environment only as an afterthought in the Q2 category, renewable resources (along with Q1, agriculture; Q3, nonrenewable resources; and Q4, energy). There will henceforth be a Q5, environmental economics, with nine subheads that reflect the scope and diversity of research in this area. Not all of our suggestions were accepted, but I think it's fair to say the new version is a great improvement.

**AERE Committees.** Margaret Slade has agreed to serve on the Publication of Enduring Quality Committee, replacing Gardner Brown, who rotated off after serving last year as Chair, and Nick Flores has agreed to serve on the Program Committee, replacing last year's Chair George Parsons. This year's Chairs are Bob Deacon (Publication) and Carlo Carraro (Program). A complete list of the membership of the AERE standing committees—Workshop, Program, Publication of Enduring Quality, and Nominations—appears at the end of this newsletter and is now available on the AERE website. Many thanks to the outgoing members for their dedicated service.

**Update on Planning for World Congress.** The committee planning the next World Congress, the third one, to be held in 2006, has now received proposals from four local organizing committees: Istanbul, Turkey; Pucon, Chile (a ski resort one hour by air south of Santiago); Chengdu, China; and Kyoto, Japan. Preliminary proposals were also received from Cape Town, South Africa and Delhi, India, but these were withdrawn from the final competition. The AERE Board expects to receive the detailed final proposals within the next month, in time for consideration at our January meeting in San Diego, California. Of course they will need to be considered by our colleagues with the

European Association of Environmental and Resource Economists (EAERE), and perhaps by the Latin American and Caribbean Association of Environmental and Resource Economists (ALEAR) as well.

**AERE Workshops.** The 2003 Workshop held in Madison, Wisconsin was quite a success and very well attended. The 2004 Workshop, "Distributional Effects of Environmental Policy", organized by Don Fullerton, will be held in Estes Park, Colorado, June 13-15. Please see the Call for Papers in this newsletter for details, and note that paper proposals are due on December 31st.

**Other Upcoming Events.** The major near term event is, of course, the Allied Social Science Associations (ASSA) meetings in San Diego on January 3-5, 2004. AERE has eight sessions, described in detail on page 11 of this newsletter. I particularly want to call to your attention the joint session with the American Economic Association (AEA) on uncertainty in environmental decisionmaking, featuring a presentation by Kenneth Arrow on the precautionary principle. I hope to see many of you at the annual AERE business meeting and luncheon to be held on Sunday, the 4<sup>th</sup>, at the Manchester Grand Hyatt, Regency D & E. (If you misplaced the reservation from that was mailed earlier this month, you will be able to sign up on-line via AERE's Web Page ([www.aere.org](http://www.aere.org)). Note also the Calls for Papers for the somewhat more distant meetings: EAERE, to be held in Budapest, Hungary, June 25-28, 2004; AAEA, in Denver, Colorado, August 1-4, 2004; and ASSA again, January 7-9, 2005, in Philadelphia.

I would like to close with some words of thanks: to Marilyn Voigt, for her ongoing work on behalf of the association and especially for the crucial role she has played in facilitating the transition to AAEA management of member services, and to John Whitehead and Gernot Wagner for their continued work on the AERE Web Page. I also want to acknowledge, with gratitude, all of the continuing volunteer labor from Board and committee members, especially the committee Chairs, on whom so much of the burden falls for making AERE a vibrant and responsive organization.

**Anthony C. Fisher**  
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## AERE ANNOUNCEMENTS

### AERE BOARD OF DIRECTORS' MEETING

The annual meeting of the AERE Board of Directors will be held on Saturday, January 3<sup>rd</sup>, from 5:30 to 8:00 p.m. at the Manchester Grand Hyatt (Gibbons Room). Anyone with matters to be brought before the Board should contact the president, Anthony C. Fisher (see contact information above).

Please note the new telephone and e-mail contact information for Marilyn M. Voigt, AERE's Executive Director:

AERE  
1616 P Street NW, Suite 410, Room 400  
Washington, DC 20036-1400  
Telephone: 202-328-5125  
Fax: 202-939-3460  
E-mail: [voigt@aere.org](mailto:voigt@aere.org)

### AERE ANNUAL MEETING AND LUNCHEON

All 2003 members of AERE are invited to attend the annual meeting and luncheon on Sunday, January 4<sup>th</sup>, at the Manchester Grand Hyatt San Diego (Regency D & E). Luncheon reservation forms were mailed to all current members of AERE in mid-November. A form is also posted on the AERE Web Page. This year, everyone has the option to pay by credit card. The on-line registration option should be available by early December—please check the AERE Web Site for up-to-date information. Return the form to the AERE Membership Office in Ames, Iowa **by Friday, December 24th**, to insure your place. Please make your reservations on time as we are unable to guarantee seating for walk-ins.

### NEW JOURNAL FOR AERE?

Last January, the AERE Board appointed an *ad hoc* committee to examine the desirability of introducing a new AERE journal—not a substitute for *JEEM* but a complement. The committee consists of Charles Kolstad (Chair), Hilary Sigman and Bill Provencher. The Committee is to report back to President Fisher and the Board this coming January.

The Committee would very much appreciate hearing from AERE members regarding suggestions or comments for a new journal. Please send you comments to:

Charlie ([kolstad@econ.ucsb.edu](mailto:kolstad@econ.ucsb.edu))  
Bill ([provencher@aae.wisc.edu](mailto:provencher@aae.wisc.edu)) or  
Hilary ([sigman@econ.rutgers.edu](mailto:sigman@econ.rutgers.edu))

### NEW AERE MEMBERSHIP OFFICE

Please direct any questions or requests regarding your membership, subscription to *JEEM*, luncheon reservations, receipts, or related membership matters to the AERE Business office at:

415 S Duff Avenue, Suite C  
Ames, IA 50010-6600  
Telephone: 515-598-5028  
Fax: 515-233-3101  
E-mail: [info@aere.org](mailto:info@aere.org)

preferably **by the beginning of December.**

### *JOURNAL OF ENVIRONMENTAL ECONOMICS AND MANAGEMENT (JEEM)*

Those of you who paid for a print subscription to *JEEM* received a nice surprise late in the year—all print subscribers were given electronic access to the journal for 2003 at no additional charge. Members who paid \$75.00 for print and electronic subscriptions will be receiving refunds of \$25.00 by the end of this year. In addition, Elsevier has changed its subscription policy for 2004. All AERE members will pay one rate (\$50.00) for *JEEM* and will receive both a print copy and electronic access to the issues.

## AERE WORKSHOP 2003

The 2003 AERE summer workshop was held at the Edgewater Hotel in Madison, Wisconsin on June 15-17. The topic of the workshop was how to incorporate spatial dimensions into the economic analysis of environmental and natural resource issues. Sixty-eight participants attended, and were treated to a lively and interesting program.

Environmental and resource problems are inherently spatial, in the sense that what happens at one place affects what happens at other places in ways that depend on their spatial relationship. With the wide availability of desktop GIS programs, economists can now access and manipulate a wealth of spatial data related to environmental and resource issues. The sixteen workshop papers explored how economic theory, models, and econometric methods can be extended to explicitly account for spatial dimensions, and to take advantage of this new computing capability.

Papers presented at the workshop included theoretical treatments of spatially-explicit processes and behavior, advances in econometric methods used to analyze spatial data, and case studies demonstrating the importance of accounting for space when regulating environmental quality or managing natural resources. Environmental and resource issues considered included land use change, hedonic pricing models, fishery management and behavior of harvesters, environmental compliance, and spatial optimization of land and water systems.

While the papers considered a wide range of environmental and resource issues, workshop participants commented on the parallels among the papers with regards to the issues that arise when models and methods are adapted to incorporate spatial considerations. A common theme that was mentioned several times through the workshop was the parallel between how we treat space in our models and statistical analysis, and how we treat time.

### **Workshop Committee:**

Chair: Richard Ready, The Pennsylvania State University

Don Fullerton, The University of Texas at Austin,  
Laura Taylor, Georgia State University

## AERE WORKSHOP 2004

### *Distributional Effects of Environmental Policy*

**June 13-15, 2004**  
**The Stanley Hotel**  
**Estes Park, Colorado**

The next AERE Workshop will be held at The Stanley Hotel in Estes, Colorado—a historic hotel that offers a return to simple pleasures. Clean mountain air. Genuine hospitality. Outdoor fun. In 1909, F.O. Stanley opened his grand hotel, nestled high on the eastern slope of the Rockies, six miles from Rocky Mountain National Park. White-pillared Georgian architecture recalls the graciousness of a by-gone era and the rich history of The Stanley Hotel.

Please see the Call for Papers on page 5 of this newsletter.

### **Workshop Committee:**

Chair: Don Fullerton, The University of Texas at Austin

Richard Ready, The Pennsylvania State University  
Gardner Brown, University of Washington

## **AERE Newsletter**

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# CALLS FOR PAPERS

## AERE WORKSHOP 2004

### *Distributional Effects of Environmental Policy*

The next AERE workshop will be held at the Stanley Hotel on June 13-15, 2004, in Estes Park, Colorado.

Who gains and who loses when pollution worsens or when government acts to contain it? This year's AERE Workshop will focus on the distribution of costs and benefits. The topic is broad because it can relate to any environmental or natural resource problem, and it can relate to any type of policy such as taxes, permits, or mandates. Furthermore, papers can study any socioeconomic breakdown of households into groups based on income, age, gender, or ethnicity. Or, papers can compare rich and poor nations, or regions, or cities, or even locations within a city ("environmental justice"). We intend that this variety of topics will be unified by the focus on methodology and positive economic analysis: how to use the best available data and techniques to provide the best objective information to policymakers about who actually gains and loses. We also want to emphasize studies that take distributional effects seriously, rather than to follow existing literature on issues of economic efficiency (such as how to measure total costs and benefits, the optimal amount of protection, or the cost-minimizing choice of policy).

Theoretical papers might investigate the conditions under which environmental or natural resource policy is likely to raise a particular output price and affect certain consumers, or to lower a particular factor price and affect suppliers of that factor. Empirical papers might estimate either the distribution of the costs of protection or the benefits of protection (i.e., the costs of pollution). Studies might use the tools of tax incidence to analyze who pays a tax on gasoline, or a proposed tax on emissions, or the implicit tax that is imposed on firms by existing or proposed environmental mandates. Other studies might use computable general equilibrium models to simulate the distributional effects of major policies. Still other studies might use existing valuation methods in new ways in order to further the methodology for measuring the benefits of protection separately for different income or demographic groups. We expect the results of the workshop to provide

important information for policymakers who must weigh distributional effects with other objectives.

To present a paper at this workshop, please submit an abstract of no longer than three double-spaced pages to Don Fullerton, Workshop Chair, at the address below. **Abstracts are due December 31, 2003.** Expenses of paper presenters will be covered up to a maximum of \$1,000, including airfare, ground transportation, hotel, meals, and incidental workshop-related expenses. For paper presenters from LDCs, the maximum coverage of travel expenses can be increased if needed and if funding is available. The registration fee for paper presenters will also be waived. All conference presenters and attendees must be AERE members. Nonmembers may join at the time of registration. Authors will be notified of the status of their submissions by early February. Accepted papers are due May 1, 2004 and must not be published before the time of the workshop. Further information, including registration forms and travel and lodging information, will be mailed to AERE members in early 2004.

**Send abstracts to Prof. Don Fullerton:**

**By U.S. Mail or Overnight Service:**

**Department of Economics  
University of Texas at Austin  
Austin, TX 78712  
Telephone: 512-475-8519**

**By E-mail:**

**[dfullert@eco.utexas.edu](mailto:dfullert@eco.utexas.edu)**

**(Please use "AERE Abstract" as the subject.)**

**No facsimiles, please.**

**AMERICAN AGRICULTURAL ECONOMICS  
ASSOCIATION (AAEA)**

The 2004 Summer meeting of the AAEA will be held in Denver, Colorado on August 1-4, 2004. Prof. James E. Wilen from the University of California at Davis is serving as chair of the AERE Program Committee. This year, all submissions are to be sent electronically via e-mail. Only .pdf files will be accepted as electronic format. No submissions will be accepted via facsimile or postal mail.

Authors wishing to have a paper considered for the AERE sessions should send a 2-3 page .pdf file by e-mail to:

James E. Wilen ([aere2004@primal.ucdavis.edu](mailto:aere2004@primal.ucdavis.edu)).

The file should contain the following information:

- (I) name and institutional affiliation of paper presenter and co-author(s);
- (II) title of paper;
- (III) address and e-mail address of paper presenter;
- (IV) up to six key words;
- (V) JEL codes;
- (VI) long abstract of the paper (about 1,000 words).

The phrase "AAEA Submission" should appear in the subject line of the e-mail. Papers submitted without all the required information will not be considered. Electronic acknowledgements of submissions will be sent to all submitters. The deadline to submit is **January 15, 2004**.

Proposals for complete sessions are also encouraged. Organizers of proposed sessions should submit abstracts of papers following the above instructions. Papers may be accepted or rejected on an individual basis unless the organizer specifically requests the session be considered only in its entirety.

**Prof. James E. Wilen**  
**Dept. of Agricultural and Resource Economics**  
**University of California, Davis**  
**Davis, California 95616**  
**USA**

**ALLIED SOCIAL SCIENCE ASSOCIATIONS  
(ASSA)**

The 2005 Winter meeting of the ASSA will be held in Philadelphia, Pennsylvania on January 7-9, 2005. Prof. James E. Wilen of the University of California at Davis is serving as chair of the AERE Program Committee. This year, all submissions are to be sent electronically via e-mail. Only .pdf files will be accepted as electronic format. No submissions will be accepted via facsimile or postal mail.

Authors wishing to have a paper considered for the AERE sessions should send a 2-3 page .pdf file by e-mail to:

James Wilen ([aere2004@primal.ucdavis.edu](mailto:aere2004@primal.ucdavis.edu)).

The file should contain the following information:

- (I) name and institutional affiliation of paper presenter and co-author(s);
- (II) title of paper;
- (III) address and e-mail address of paper presenter;
- (IV) up to six key words;
- (V) JEL codes;
- (VI) long abstract of the paper (about 1,000 words).

The phrase "ASSA Submission" should appear in the subject line of the e-mail. Papers submitted without all the required information will not be considered. Electronic acknowledgements of submissions will be sent to all submitters. The deadline to submit is **May 15, 2004**.

Proposals for complete sessions are also encouraged. Organizers of proposed sessions should submit abstracts of papers following the above instructions. Papers may be accepted or rejected on an individual basis unless the organizer specifically requests the session be considered only in its entirety.

**Prof. James E. Wilen**  
(See address above)

## **AERE NEWSLETTER**

The AERE Newsletter is soliciting essays about natural resource and environmental economics issues of general interest to the membership. These essays can be relatively short (6-10 double spaced pages) and address a topic that does not fit into the traditional journal outlet. There is currently no backlog, so your essay would likely be published in the following *AERE Newsletter*. Marilyn Voigt and I need your essay in February for the May issue and August for the November issue. If you wish to float an idea by me, feel free to contact me.

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Telephone: 970-491-2485

## **EUROPEAN ASSOCIATION OF ENVIRONMENTAL AND RESOURCE ECONOMISTS (EAERE)**

### **Thirteenth Annual Conference**

**June 25 – 28, 2004**  
**Budapest, Hungary**

The European Association of Environmental and Resource Economists (EAERE) is an international scientific association with legal seat in Siegen, Germany (since May 1992), and secretariat headquarters in Mannheim, Germany. The aims of the association are to contribute to the development and application of environmental and resource economics as a science in Europe, to improve communication and contacts among teachers, researchers and students in environmental and resource economics in the different European countries, to develop and encourage cooperation between university level teaching institutions and research institutions in Europe.

The meeting is organized by the Institute of Environmental Sciences at the Budapest University of Economic Sciences and Business Administration (BUESPA). The BUESPA is located in Budapest, the capital of Hungary, and celebrated its 50th anniversary in 1998. It is the biggest institution in Hungary offering instruction in the economic and business sciences.

The conference will start with an evening reception on June 25th (Friday), and finish with a lunch on June 28<sup>th</sup> (Monday). All the events will be organized in the

University's buildings. The accommodations will be in hotels which are within walking distance from the University.

Deadline for submissions: **February 15, 2004**. For further information contact:  
[eaere2004@enviro.bke.hu](mailto:eaere2004@enviro.bke.hu)

## **NORTHEAST AGRICULTURAL AND RESOURCE ECONOMICS ASSOCIATION (NAREA)**

### **2004 NAREA Annual Meeting**

**June 20 – 23, 2004**  
**Halifax, Nova Scotia**

The 2004 Northeast Agricultural and Resource Economics Association (NAREA) Annual Meeting will be held jointly with the Canadian Agricultural Economics Society (CAES) in Halifax, Nova Scotia, June 20-23, 2004. All selected-paper sessions will be organized jointly by NAREA and CAES selected-paper chairs to ensure topical and quality sessions.

**Proposals for Symposia** have no restrictions on format or content, but should emphasize audience discussion. Symposium proposals should include:

- 1) Title;
- 2) Description of the topic
- 3) Reason why the topic is timely and of interest to the membership;
- 4) Suggested format and description of the presentation; and
- 5) Names and affiliations of presenters.

**Selected-papers** will be selected based on an extended abstract of no more than two pages, double-spaced, in a 12 point font. Abstracts not meeting these criteria will not be considered. The Selected-Papers Committee will review abstracts in terms of problem statement, methods, results, and relevance to NAREA membership. Individuals whose abstracts are selected will be notified on or about April 1, 2004 and will be asked to write a paper for presentation at the meetings in Halifax, Nova Scotia. Final papers must be submitted to the Chair of the Selected-Papers Committee no later than June 1, 2004. Individuals who do not submit a completed paper by June 1, 2004 will not have abstracts of their selected-papers published in the *Agricultural and Resource Economics Review*.

For each selected-paper submission, include a separate page with the following information:

- 1) Title of the Paper;
- 2) Corresponding Author (Name, Address, Phone/FAX/email);
- 3) Name of Presenting Author—is the presenter a member of NAREA? (Yes or No);
- 4) 50-Word Abstract (for publication in the *Agricultural and Resource Economics Review*);
- 5) Paper's subject area (choose from the following list)
  - a. Consumer
  - b. Environment
  - c. Marketing
  - d. Rural/ Regional Development
  - e. Resources
  - f. Trade
  - g. Production
  - h. Other - Specify

**Symposia and Selected-Papers** can be submitted either by mail or electronically. Mailed proposals must be postmarked **no later than February 15, 2004**. Electronic submissions must also be sent by this date. If submitting electronically, please name the file as follows: NAREA *yourlastname.doc*. Please contact Eliza Mojduszka, Chair of the Selected-Papers Committee, with any questions (732-932-9155, ext. 222 or email [mojduszka@AESOP.Rutgers.edu](mailto:mojduszka@AESOP.Rutgers.edu)).

**To Submit by Mail:**

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Cook Office Building, Room 102  
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New Brunswick, N.J. 08901

**To Submit by Email**

[mojduszka@AESOP.Rutgers.edu](mailto:mojduszka@AESOP.Rutgers.edu)

**Please, no FAX submissions.**

**NORTHEAST AGRICULTURAL AND  
RESOURCE ECONOMICS ASSOCIATION  
(NAREA)**

**2004 NAREA Workshop**

**June 23, 2004  
Halifax, Nova Scotia**

**Call for Abstracts**

The 2004 “*International Trade and the Environment*” Workshop will be held in Halifax, Nova Scotia, on June 23, 2004 immediately following the joint annual meetings of the Northeastern Agricultural and Resource Economics Association (NAREA) and the Canadian Agricultural Economics Society (CAES). The objective of the Workshop is to stimulate research and discussion to improve our understanding of the complex interrelationships between international trade, natural resource use, and the environment, particularly as they relate to agriculture, forestry, and fisheries. Such issues are of increasing policy relevance. U.S. Executive Order 13141 and the U.S. Trade Act of 2002 require environmental assessments of trade agreements during the negotiation process. The environment was a key topic of negotiation in the recently concluded U.S.-Singapore free trade agreement, and a commitment to enforce existing environmental laws was part of the recently concluded U.S.-Chile free trade agreement. Workshop topics of interest include:

- Strengths and weaknesses of previous environment assessments of trade agreements, and how knowledge gained from these assessments can be applied to improve assessments of currently proposed trade agreements.
- Major developments in the trade and environment literature during the past decade, and how these developments can be applied to improve assessments of the environmental impacts of currently proposed trade agreements.
- Whether specially created international environmental bodies (such as the Commission for Environmental Cooperation, established concurrently with NAFTA) and environmental side-agreements are desirable.
- Whether the quantitative models currently available to assess the environmental impacts of trade agreements are adequate and, if not, the kinds of models that would be required and the data and parameter requirements of those models.

**MONTE VERITÀ CONFERENCE ON  
SUSTAINABLE RESOURCE USE AND  
ECONOMIC DYNAMICS (SURED)**

**June 7-10, 2004**

**Monte Verità Seminar Center  
Ascona, Switzerland**

- Impacts of international trade on natural resource use in the northeast United States, Canada, and other countries, particularly land use in agriculture in forestry, and the resulting positive and negative externalities.

- Given the time- and location-specific nature of agriculture's externalities, how environmental impacts of agricultural activities should be modeled for international trade negotiation purposes.

Workshop proceedings will be published in a special issue of *Agricultural and Resource Economics Review* (ARER) if accepted after the journal's normal review process. An honorarium of \$1,000 will be provided upon submission of the paper to ARER by July 15, 2004. To submit a paper for consideration by the Workshop's selected paper committee, please e-mail a five-page abstract (Word, WordPerfect, or Adobe Acrobat attachment) to Dr. David Abler at the address below. The five-page limit relates to text only and excludes tables, figures, and literature cited. The deadline for abstracts is **January 30, 2004**. Authors will be notified of the status of their abstract submissions by March 15, 2004. Full papers must be received from notified authors by **May 14, 2004** to be considered for inclusion in the program. NAREA must receive papers by July 15, 2004 to be considered for expedited review in ARER. Further information concerning the workshop will be provided on the NAREA website ([www.narea.org](http://www.narea.org)) and in upcoming issues of the *NAREA Newsletter*, the *AERE Newsletter*, and *The Exchange*.

Send abstracts to Dr. David Abler at:

[d-abler@psu.edu](mailto:d-abler@psu.edu).

The Institute of Economic Research at ETH Zurich and CentER (Tilburg) are organizing the Monte Verità Conference on Sustainable Resource Use and Economic Dynamics. The conference will be held at the Monte Verità Seminar Center, beautifully located on a hill above Ascona in the Southern part of Switzerland.

Contributions from the following fields are welcome:

- environmental economics
- resource economics
- energy economics
- economic dynamics
- growth theory

The conference is open to all interested researchers. Special sessions are planned for papers on economic dynamics related to environmental issues, such as dynamics of resource and energy markets, capital accumulation, substitution mechanisms, and induced technical progress. For Ph.D. students there will be the possibility to present their work in regular sessions or in young economists sessions.

The deadline for submission is **January 31, 2004**. Only papers in English are considered. They have to be submitted electronically. To submit a paper, an e-mail has to be sent to [sured@wif.gess.ethz.ch](mailto:sured@wif.gess.ethz.ch) with the paper attached as pdf-file. Each submitted paper should indicate the e-mail and physical address of the corresponding author, an abstract, JEL classification and up to five key words. Ph.D. students who want to be considered for the young economists sessions should indicate so on the cover page of their paper.

A decision on the acceptance of papers will be made by the organizing committee, based on expert opinion from external referees. Authors will be notified in March 2004. Accepted speakers will be asked to register within three weeks after notification to be included in the final program.

More information on the conference is available at:

<http://www.wif.ethz.ch/sured>

**THE SPANISH AND PORTUGUESE  
ASSOCIATION OF ENVIRONMENTAL AND  
NATURAL RESOURCE ECONOMICS  
(AERNA)**

**1st Conference of AERNA**

**June 18-19, 2004  
University of Vigo  
Vigo, Spain**

The Spanish and Portuguese Association of Environmental and Natural Resource Economics (AERNA) was founded in 2001 by a group of academics and researchers from universities and research centers in Portugal and Spain. A major objective of AERNA is to foster interactions among researchers in the field, and therefore this conference intends to be a first step that should be regularly continued in different places of Spain and Portugal. It is being organized by the Department of Applied Economics of the University of Vigo.

**Program**

On Friday, June 18, before the Conference starts, there will be a *Workshop on International Environmental Agreements* with the special participation of: Scott Barrett, The Johns Hopkins University, Baltimore, Maryland, USA.

The Conference will begin on Friday afternoon and finish on Saturday night. On Friday there will be a panel session on: *The European Market of Tradeable Permits for Greenhouse Gases* organized by: Juan C. Císcar, Institute for Prospective Technological Studies, with participation of representatives from industries, the European Union, and academics. In addition, there will be presentations by:

- M. Carmen Gallastegui, University of the Basque Country
- José M. Naredo
- Anastasios Xepapadeas, University of Crete

**Call for Papers**

Economists and other researchers interested in Environmental and Natural Resource Economics, including nonmembers of AERNA, are invited to participate. The Head of the Scientific Committee is Professor Carmelo J. León from the University of Las Palmas de Gran Canaria. Papers should be sent before the **February 15, 2004** in PDF or Word format, preferably by e-mail, to: [congresoaerna@daea.ulpgc.es](mailto:congresoaerna@daea.ulpgc.es)

The paper should have a title and abstract, names and surnames of authors, affiliations and complete address (including email) of the presenting author. The email message with the paper must indicate the research area, among the following:

1. Biodiversity
2. Climate Change
3. International trade and the environment
4. Sustainable development
5. Ecological foundations of economics
6. Environmental indicators and valuation
7. Macroeconomics and the environment
8. Modelling of economic and environmental systems
9. Decision and participation processes
10. Natural resources
11. Regulation and environmental policy
12. Others
13. Workshop: International Environmental Agreements

The Scientific Committee will select the papers to be presented and debated in the Conference, informing on the acceptance or rejection before April 15, 2004. The authors of accepted papers should be registered in the conference before May 15, 2004. This is a necessary condition for the final acceptance of the paper.

Other information, including registration information can be found at: [www.aerna.org](http://www.aerna.org). For any query please contact: [comparada@uvigo.es](mailto:comparada@uvigo.es)

# MEETINGS

## ALLIED SOCIAL SCIENCE ASSOCIATIONS (ASSA)

January 3-5, 2004  
San Diego, California

### AERE / AEA JOINT SESSION

#### Uncertainty in Environmental Decisionmaking: Beyond Certainty Equivalence (D81, D83, Q21, Q25)

**Chair:** Anthony Fisher, University of California  
(UC), Berkeley

**Date/Time:** Monday, January 5th, 10:15 a.m.

**Place:** Manchester Grand Hyatt G

#### **Papers:**

*The Precautionary Principle and Rational Decision-Making*, Kenneth Arrow, Stanford University

*The Dynamic Formation of Willingness to Pay*, Catherine Kling, Iowa State University

*Optimal Stopping Rules in Resource and Environmental Economics*, Jon M. Conrad, Cornell University

#### **Discussant:**

Michael Hanemann, UC Berkeley

### AERE PAPERS SESSIONS

#### Session 1

#### Representing Technological Change in Models for Climate Policy Analysis: Lessons from Different Approaches

**Chair:** Henry Jacoby, Massachusetts Institute of  
Technology (MIT)

**Date/Time:** Saturday, January 3rd, 8:00 a.m.

**Place:** Manchester Grand Hyatt, Molly A&B

#### **Papers:**

*Modeling Technological Change in Transition Economies: Implications for Energy Use and Carbon Emissions in China (O3, P2, Q0, D58)*, Karen Fisher-Vanden, Dartmouth College

*Modeling Induced Technological Change with a Backstop Technology (O33, 041, Q43, Q48)*, David Popp, Syracuse University, Maxwell School of Public Administration

*Induced Technological Change and the Cost of Climate Policy (O33, Q25, C68)*, Ian Sue Wing, Boston University

*Technology Detail in a Multi-Sector CGE Model: Transport Under Climate Policy (C68, L91, Q28, C48)*, Andreas Schafer and Henry Jacoby, MIT

*Energy Technology and Climate Change (Q2, Q3, Q4)*, Jae Edmonds, Pacific Northwest National Laboratory and University of Maryland, College Park

#### **Discussants:**

Richard Garbaccio, U.S. Environmental Protection Agency

Larry Goulder, Stanford University

#### Session 2

#### Energy, Technology and Climate Change

**Chair:** Carlo Carraro, University of Venice and  
Fondazione Eni Enrico Mattei (FEEM),  
Italy

**Date/Time:** Saturday, January 3rd, 10:15 a.m.

**Place:** Manchester Grand Hyatt, Molly A&B

#### **Papers:**

*Carbon Policies and Technological Change: Effects on Consumer Surplus in Electricity Generation (Q25, Q28, Q4, D58)*, Molly K. Macauley and Jhih-Shang Shih, Resources for the Future (RFF)

*Public and Private Sector Roles in Fostering Technological Change in Global Climate Change Policy Development (O3, Q3)*, John P. Weyant, Stanford University

*Driving Behavior, Policies, and Vehicle Emissions in the U.S. and Japan (Q25, Q48, R48)*, Don Fullerton and Li Gan, University of Texas at Austin

*The Effect of Improved Fuel Economy on Vehicle Miles Traveled and on Carbon Dioxide Emissions: An Analysis for California (Q25, Q48, R48)*, Kenneth Small and Kurt Van Dender, University of California, Irvine

*Regime Switching and the Shape of the Emission-Income Relationship (C25, O1, Q2)*, Nektarios Aslanidis and Anastasios Xepapadeas, University of Crete, Greece

**Discussants:**

Winston Harrington, Resources for the Future  
Larry Goulder, Stanford University  
Carlo Carraro, University of Venice and FEEM

**Session 3**

**Environmental Policy and Economics: A Roundtable of Former Senior Staff Economists of the President's Council of Economic Advisers (Q18, Q28, Q38, Q48)**

**Chair:** Robert Stavins, Harvard University  
**Date/Time:** Saturday, January 3rd, 2:30 p.m.  
**Place:** Manchester Grand Hyatt, Molly A&B

**Panelists:**

Andrew Keeler, University of Georgia  
Alan Krupnick, Resources for the Future  
John List, University of Maryland, College Park  
Adele Morris, U.S. Department of the Treasury  
Steven Polasky, University of Minnesota  
William Pizer, Resources for the Future  
Jason Shogren, University of Wyoming

**Session 4**

**Impact of Climate Change on Agricultural Productivity and Rural Income**

**Chair:** Ariel Dinar, The World Bank  
**Date/Time:** Sunday, January 4th, 8:00 a.m.  
**Place:** Manchester Grand Hyatt, Molly A&B

**Papers:**

*Measuring Climate Change Impacts with Satellite versus Weather Station Data (O13, Q25)*, Pradeep Kurukulasuriya, Yale University (Yale); Robert Mendelsohn, Yale; Alan Basist, National Oceanic and Atmospheric Administration (NOAA); Felix Kogan, NOAA

*Impacts of Climate Change on Poor Countries (O13, Q25)*, Larry Williams, Electric Power Research Institute (EPRI); Robert Mendelsohn, Yale; Ariel Dinar, The World Bank

*Climate Change and Rural Income (O13, Q25)*, Robert Mendelsohn, Yale; Alan Basist, NOAA; Pradeep Kurukulasuriya, Yale; Ariel Dinar, The World Bank

*Nor any Drop to Drink: Climate Change and the Future of Irrigated Agriculture (Q0, Q1, Q5)*, Wolfram Schlenker, Michael Hanemann, and Anthony Fisher, University of California (UC), Berkeley

**Discussants:**

Richard Howitt, UC Davis  
Charles D. Kolstad, UC Santa Barbara  
David Zilberman, UC Berkeley  
Michael Greenstone, MIT

**Session 5**

**Valuing Risk Reductions in Health Outcomes**

**Chair:** J.R. DeShazo, University of California, Los Angeles (UCLA)  
**Date/Time:** Sunday, January 4th, 10:15 a.m.  
**Place:** Manchester Grand Hyatt, Molly A&B

**Papers:**

*Moving Beyond the Value of a Statistical Life: A New Theoretical and Empirical Approach (D81, II)*, J.R. DeShazo, UCLA, and Trudy Ann Cameron, University of Oregon

*Preference Tradeoffs for Drinking Water Risks: Diarrhea or Death (H42, Q26)*, Alan J. Krupnick, Resources for the Future (RFF); Victor Adamowicz, University of Alberta, Canada; Diane Dupont, Brock University, Canada; Spencer Banzhaf, RFF; Michael Batz, RFF

*Behavioral Reactions to Ozone Alerts: What Do They Tell Us About Willingness-to-Pay for Children's Health? (I18, Q2)*, Carol Mansfield, Research Triangle Institute (RTI); George Van Houtven, RTI; F. Reed Johnson, RTI; Douglas Crawford-Brown, University of North Carolina; Zachary Pekar, RTI

*The Value of Statistical Life Over a Worker's Life Cycle (J3, II)*, W. Kip Viscusi and Joseph Aldy, Harvard Law School

*How Much is a QALY Worth? Admissible Utility Functions for Health and Wealth (D61, D81, I10)*, James K. Hammitt, Harvard University

**Discussants:**

W. Kip Viscusi, Harvard Law School  
 Reed Johnson, Research Triangle Institute  
 Michael Hanemann, UC Berkeley  
 Thomas J. Kniesner, Syracuse University, Maxwell  
 School of Public Policy

**Session 6**

**The Economics of Pollution Abatement Costs:  
 The PACE Survey and Beyond**

**Chair:** Robert Stavins, Harvard University  
**Date/Time:** Sunday, January 4th, 2:30 p.m.  
**Place:** Manchester Grand Hyatt, Molly A&B

**Papers:**

*Least-Cost Air Pollution Control: A CGE Joint Production Framework (Q28)*, Carl A. Pasurka, U.S. Environmental Protection Agency (U.S. EPA); Deborah Vaughn Aiken, Occupational Safety and Health Administration (OSHA); Rolf Färe, Oregon State University; Shawna Grosskopf, Oregon State University

*A Change of PACE: A Comparison of the 1994 and 1999 Pollution Abatement Costs and Expenditures Survey (Q2, C81, L0)*, Randy Becker, U.S. Bureau of the Census; Ronald Shadbegian, U.S. EPA, National Center for Environmental Economics (NCEE) and University of Massachusetts

*Environmental Performance of Polluting Plants: A Spatial Econometric Approach (Q25, Q28)*, Wayne B. Gray, Clark University; Ronald Shadbegian, U.S. EPA, NCEE and University of Massachusetts

*Estimating the Cost Savings from Incentive-Based Environmental Policies when Costs are Heterogeneous (Q21, Q28, C213)*, Richard Newell, Resources for the Future (RFF); William A. Pizer, RFF; Jhih-Shyang Shih, RFF

**Discussants:**

Michael Greenstone, MIT  
 Amanda Lee, U.S. Office of Management and Budget (OMB)  
 Cynthia Morgan, U.S. EPA, NCEE and University of Massachusetts  
 Ann Wolverton, U.S. EPA, NCEE and University of Massachusetts

**Session 7****Environmental Models and Assessments**

**Chair:** Anastasios Xepapadeas, University of Crete, Greece  
**Date/Time:** Monday, January 5th, 8:00 a.m.  
**Place:** Manchester Grand Hyatt, Molly A&B

**Papers:**

*Uncertainty in Self-Enforcing International Environmental Agreements (D8, F0, Q0)*, Charles D. Kolstad, University of California, Santa Barbara

*Voluntary Programs for Climate Change: The Role of Information (Q0, L51, D8)*, John W. Maxwell and Thomas P. Lyon, Indiana University, Kelley School of Business

*Perceived Environmental Value in Revealed Data: Evidence from Housing Market (C5, D6, H41, Q0)*, Sudip Chattopadhyay, San Francisco State University; John B. Braden, University of Illinois (UI) at Urbana-Champaign; Arianto Patunru, UI at Urbana-Champaign

*Estimating the Public Value of Information from Environmental Groups (C91, D81, Q29, D44)*, Matthew Rousu, RTI International; Wallace E. Huffman, Iowa State University; Jason F. Shogren, University of Wyoming; Ababayehu Tegene, U.S. Department of Agriculture (USDA)

*Habit Formation in a Random Utility Model of Recreation Demand (Q26, Q2, H4)*, George R. Parsons, University of Delaware; D. Matt. Massey, U.S. Environmental Protection Agency (U.S. EPA); Clay Evans, Federal Reserve Bank of Philadelphia

**Discussants:**

Anastasios Xepapadeas, University of Crete, Greece  
 Charles D. Kolstad, UC, Santa Barbara  
 George R. Parsons, University of Delaware  
 Sudip Chattopadhyay, San Francisco State University  
 Matthew Rousu, RTI International

## Session 8

### Tradable Permits, Compensation and Efficiency: Complements or Substitutes?

**Chair:** Karen Palmer, Resources for the Future  
**Date/Time:** Monday, January 5th, 1:00 p.m.  
**Place:** Manchester Grand Hyatt, Molly A&B

#### **Papers:**

*Achieving Compensation and Efficiency When Designing a Carbon Trading Program (Q25, Q28, Q9,D58)*, Anne E. Smith, Martin T. Ross, and W. David Montgomery, Charles River Associates

*The Efficiency and Distributional Consequences of Emission Allowance Allocation in the Electricity Sector (Q25, Q4, Q28, L11, L94)*, Dallas Burtraw and Karen Palmer, Resources for the Future (RFF)

*Are Emissions Permits Regressive? (Q28, H22, H23)*, Ian W. H. Parry, RFF

*Cost-Effectiveness vs. Hot Spots: Determining the Optimal Size of Emissions Permit Trading Zones, (Q2, L51, D81)*, Roberton C. Williams III, University of Texas at Austin and NBER

#### **Discussants:**

Tom Tietenberg, Colby College  
Larry Goulder, Stanford University

### **NORTHEAST AGRICULTURAL AND RESOURCE ECONOMICS ASSOCIATION (NAREA)**

#### **2004 Joint NAREA/CAES Meetings**

**June 20 – 23, 2004  
Halifax, Nova Scotia, Canada**

The 2004 NAREA annual meetings will be held jointly with the Canadian Agricultural Economics Society (CAES) in Halifax, Nova Scotia, Canada at the Delta Halifax hotel on June 20 - 23. The meetings open with a reception on Sunday followed by two full days of meetings on Monday and Tuesday. A post conference workshop, *International Trade and the Environment*, will also be held at the Delta Halifax hotel and will follow our regular meetings with a full day on Wednesday, June 24<sup>th</sup>. The deadline for submission of CAES Selected-Papers abstracts is **January 15, 2004** (contact John Cranfield at [jcranfie@uoguelph.ca](mailto:jcranfie@uoguelph.ca)). CAES Principle-Paper Session outlines are also due by

**January 15, 2004** (contact Jill Hobbs at [hobbs@duke.usask.ca](mailto:hobbs@duke.usask.ca)). The deadlines for NAREA Selected-Papers and Organized Symposia abstracts are **February 15, 2004** (contact Eliza Mojduszka at [mojduszka@AESOP.Rutgers.edu](mailto:mojduszka@AESOP.Rutgers.edu)).

The Delta Halifax hotel is just steps from the Historic Properties and just one block from the Halifax waterfront. The meeting site offers a variety of dining and entertainment venues within walking distance from the hotel that are sure to please you and your family. Room rates are \$159 (Canadian) single and double occupancy. You can reserve rooms with a view of the harbor at \$189 (Canadian). Halifax offers a great start for a tour of the Maritime Provinces. Please make your reservations by **May 19, 2004**. Registration materials will be available on the NAREA (<http://www.narea.org/>) and CAES (<http://caes-scae.org/caes-e.htm>) websites after the first of the year. For further information, contact Dan Lass ([dan.lass@resecon.umass.edu](mailto:dan.lass@resecon.umass.edu)) at the University of Massachusetts or Stephen Clark ([sclark@nsac.ns.ca](mailto:sclark@nsac.ns.ca)) at the Nova Scotia Agricultural College. We hope to see you there. Nova Scotia has lots to offer for the whole family!

### **SOUTHERN ECONOMIC ASSOCIATION (SEA) MEETINGS**

**November 21-23, 2003  
Marriott Rivercenter Hotel  
San Antonio, Texas**

**AERE  
and the  
Southern Committee for Environmental and  
Resource Economics (SCREE)**

#### **Session 1**

#### **Consumer Behavior and the Environment**

**Chair:** Glenn C. Blomquist  
University of Kentucky

#### **Papers:**

“Episodic Flooding and the Cost of Sea Level Rise,”  
Jeffrey A. Michael, Towson University

“Flood Hazards, Insurance, and House Prices - A Hedonic Property Price Analysis,” Okmyung Bin, East Carolina University and Stephen Polasky, University of Minnesota

“Modeling Wildlife Watching Consumption: A Double Hurdle Approach,” Yeong Nain Chi, Jack Coburn Isaacs, Jorge L. Icabalceta, Herb A. Holloway,

David R. Lavergne, Louisiana Department of Wildlife and Fisheries

“The Impact of Beach Nourishment on Beach Hotel Visits,” Christopher F. Dumas and Paul J. Seel, University of North Carolina at Wilmington

**Discussants:**

Paul J. Ferraro, Georgia State University,  
Lisa Cave, University of Kentucky  
Jonathan I. Eisen-Hecht, Duke University  
Ken Baerenklau, University of California, Riverside

**Session 2**

**Environment Policy and Valuation**

**Chair:** John C. Whitehead  
University of North Carolina at Wilmington

**Papers:**

“The Environmental Kuznets Curve and the Kyoto Protocol: A Study of Greenhouse Gases and Economic Development,” Lisa Cave and Glenn C. Blomquist, University of Kentucky

“Attribute-Based Methods for Nonmarket Valuation: Suggestions for a “Best Practice” Methodology,” Jonathan I. Eisen-Hecht and Randall A. Kramer, Duke University

“Voluntary Approaches to Pollution Control: Evaluating Japan’s New Pollutant Release and Transfer Register,” Paul J. Ferraro and Toshihiro Uchida, Georgia State University

“On the Use of Voluntary Incentives to Promote Adoption of Conservation Technologies: the Case of Agricultural Nonpoint Source Phosphorus Pollution,” Ken Baerenklau, University of California, Riverside

**Discussants:**

Jeffrey A. Michael, Towson University  
Okmyung Bin, East Carolina University  
Yeong Nain Chi, Louisiana Department of Wildlife and Fisheries  
Christopher F. Dumas, University of North Carolina at Wilmington

**Session 3**

**Economic Analysis of Ecosystems**

**Chair:** Juan Aguirre, School for Field Studies

**Papers:**

“On the Scarcity Value of Ecosystem Services,” Amitrajeet A. Batabyal, Rochester Institute of

Technology; James R. Kahn, Washington and Lee University; Robert O’Neill, Oak Ridge, Tennessee

“Indigenous Perspectives on Ecosystem Services: Petroleum Transportation on the Amazon River,” James Casey and James R. Kahn, Washington and Lee University; Alexandre Rivas, Universidade do Amazonas

“Combining Survey and Satellite Data to Investigate Land-Use in Rondônia, Brazil: A Spatial Model Application,” Jill L. Caviglia-Harris and Daniel W. Harris, Salisbury University

“Where Will The Food Come From?” Lynn E. Dellenbarger, Dellenbarger & Associates and Lihong Zhu, Washington State University

**Discussants:**

Nicolas Sisto, ITESM – Campus Monterrey  
Jill L. Caviglia-Harris, Salisbury University  
Amitrajeet A. Batabyal, Rochester Institute of Technology  
James R. Kahn, Washington and Lee University

**Session 4**

**International Environmental Economics**

**Chair:** James R. Kahn  
Washington and Lee University

**Papers:**

“Using GIS to Verify Survey Data, Estimate Response Bias and Improve on Deforestation Modeling: An Application for Households in Rondônia, Brazil,” Jill L. Caviglia-Harris and Daniel W. Harris, Salisbury University

“Organic Certification in Costa Rica; A preliminary Assessment in Coffee and Vegetables,” Juan Aguirre, School for Field Studies

“The MesoAmerican Environment Development Project: Integrating Research, Teaching and Service Learning,” James Casey, Washington and Lee University

“The Recreational Value of Forests in Developing Countries: Case of the Cuenca de la Esperanza, Guanajuato, México,” Nicolas Sisto, ITESM – Campus Monterrey

**Discussants:**

Jill Caviglia-Harris, Salisbury University  
Lynn Dellenbarger, Dellenbarger and Associates  
James R. Kahn, Washington and Lee University  
Alexandre Rivas, Universidade do Amazonas

# ESSAYS

## The State of the Journal

by Joseph A. Herriges

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Iowa State University  
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I am now in my third year as Managing Editor of *JEEM* and, while I have had the opportunity to provide brief reports on the journal to *AERE* members at our annual luncheons, it seems like an opportune time to provide the membership with additional details regarding what has been happening with the journal. In part, this article is meant to summarize some of the changes that have occurred at *JEEM* over the past two and half years and those that are planned for the near future. Beyond this, however, I hope to provide members with a picture of the composition and disposition of articles submitted to the journal, including the division between empirical and theoretical papers and the range of topics covered by the manuscripts we have received.

### Changes in the Journal's Operations

There have been a number of changes in recent years in the way manuscripts are handled at *JEEM*. The most significant change, of course, has been the switch from the Associate Editor model, in which all communications with authors occurs through the Managing Editor and the Associate Editors remain anonymous in the review process, to the use of Co-Editors who communicate directly with authors. One benefit of this system is that it provides for fewer steps between the opinions expressed by the reviewers and the authors themselves. At the same time, it requires greater communications among the Editorial Board members in order to insure consistency in the treatment of papers. The Association has been fortunate in terms of the caliber and dedication of those currently serving as Co-Editors for *JEEM* (Anna Alberini, Rob Innes, Larry Karp, Chuck Mason, Bill Provencher, and Tasos Xepapadeas), as well as those who served during the transition period (Brian Copeland and Steve Polasky).

Some other changes at *JEEM* have been aimed at easing the submission process for authors and

streamlining the review of manuscripts. These include the introduction of:

- *Electronic Submissions*: Authors can now submit their papers electronically as PDF files (For details, see the "Guide to Authors" listed in the back of the journal or online at <http://www.econ.iastate.edu/jeem/>). The goal here is to reduce the overall review time by eliminating the time papers spend in the mail, while also reducing postage and paper costs for both authors and the journal. At this point in time, nearly sixty percent of submissions to *JEEM* arrive electronically.
- *Credit Cards*: Visa and MasterCard can now be used to pay for submission fees. Currently, nearly a third of all submission fees are paid for using credit cards, virtually eliminating the use of wire transfers. Checks are used for the balance of submission fees.

These changes are part of *JEEM*'s ongoing efforts to facilitate the submission process and to provide authors with timely reviews. However, none of this would be possible without the cooperation and dedication of individual reviewers. While we cannot fully compensate reviewers for their time and effort, we have instituted a reward program as a token of our appreciation. Reviewers who complete a requested review in a timely fashion (i.e., within 30 days of the initial request) receive a \$40 reduction in the fee for their next submission to *JEEM*. In the first year of this program, 180 such rewards have been issued.

Finally, there have been changes to the length and appearance of the journal. The cosmetic changes to *JEEM* (i.e., the slightly larger size of the journal and changes to the page format) are a result of Elsevier's acquisition of Academic Press and the new parent company's efforts to establish some uniformity across the journals they publish. The change to the length of the journal, however, was in response to the greater number of papers submitted to and accepted by *JEEM* and the growing backlog of papers waiting to be published. While the final acceptance rate has stayed roughly constant over the past decade (hovering around 17%), submissions have been on the rise. For five of the past six years, submissions have exceeded 240 manuscripts

per year, setting or tying record levels in all but 2000. The current year's submissions are likely to be second only to last year's pace of 272 manuscripts, spurred by the World Congress in Monterey. To accommodate the growth in accepted manuscripts, beginning in 2001 the number of pages per issue was increased by almost fifty percent to 178 pages (eight to nine articles). At the same time, a page limit was established for new manuscripts of forty double-spaced pages (including tables, graphs, footnotes and references) and a supplementary issue of the journal was printed in March 2003 to help reduce the existing backlog. The time lag between acceptance and printing of a manuscript has been reduced from fifteen months to approximately eight months. Moreover, electronic versions of forthcoming papers are usually available online within three months of a paper's acceptance.

There is one more change currently underway at *JEEM*. Space constraints in the journal typically prohibit the publication of supplementary materials associated with an article; e.g., copies of the survey instrument used in a contingent valuation study, lab instructions in an experimental exercise, or sensitivity analysis conducted to support the main conclusions of a paper. Instead, authors promise to provide such materials upon request. The problem with this system is that, while most authors abide by this promise, there is no real enforcement mechanism and access to the supplementary material can be impeded. To remedy this situation, we have developed an online archive for supplementary materials

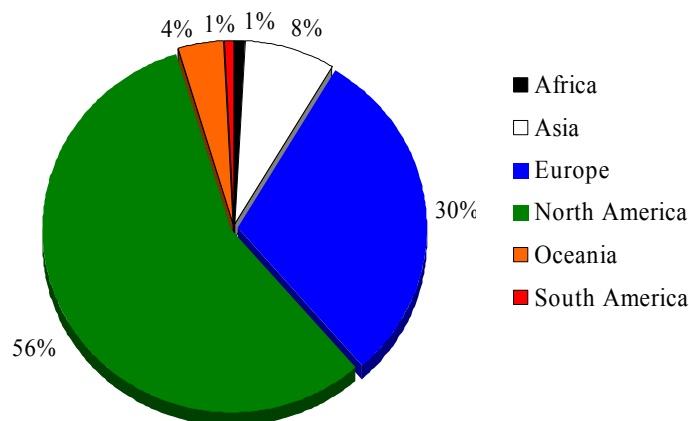
that is accessible through AERE's webpage for *JEEM* (<http://www.aere.org/journal/index.html>). Moreover, future articles will direct readers to the archive site, where the materials will be organized by volume and issue of the journal and stored in PDF format, rather indicating that the material is "...available from the authors upon request." At this point in time, we will not be archiving the actual data sets used by authors in a paper, as some journals do, but this is a possibility down the road.

### The Composition and Disposition of *JEEM* Submissions

One of the main advantages of being the Managing Editor of *JEEM* is that one gets to see the breadth of topics being studied in the field and who is working on them. This section provides an overview of the papers that we have received during my tenure as Managing Editor, with the hope of providing some insights into both the review process and what is going on in Environmental and Resource Economics.

Figure 1 provides a regional breakdown of the papers submitted in the past two and half years based on the country of origin of the corresponding author. While we received papers from thirty-six different countries in this period, the majority of the submissions (86%) are from North America and Europe. Among European countries, France, Germany, The Netherlands, Norway,

Figure 1: Submissions by Region



and the United Kingdom were the most frequent contributors, with twenty papers or more submitted to *JEEM* from each of these countries. Outside of Europe, the U.S. (340), Canada (39), and Australia (20) were the other countries in this category.

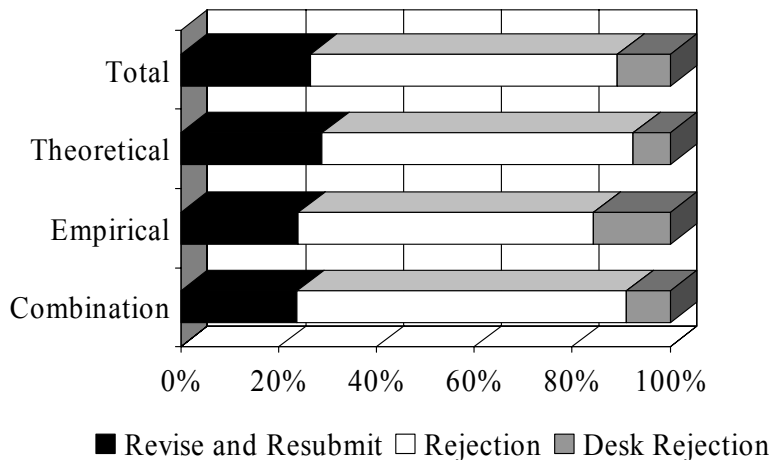
A second division of *JEEM* submissions is in terms of their theoretical versus empirical emphasis. *JEEM* is not focused exclusively on either type of paper. Instead, the goal of *JEEM* is to publish papers that offer new analytical results or methods dealing with natural resource and environmental issues – advances that may potentially influence the course of future research – or new empirical findings relevant to important policy decisions. Thus, we receive a mixture of theoretical and empirical papers. During the past two and half years, for example, 51% of the articles were theoretical in nature, 37% were empirical, and the remaining 12% are a combination of theory and empirics.

Figure 2 provides a breakdown of the disposition of *JEEM* submissions in 2001 to 2003 (i.e., among those for which decisions have been reached). The breakdown is provided both for all manuscripts and by whether the paper is empirical or theoretical in nature. The grey segments in Figure 2 indicate those papers that were rejected without being sent out for review (so-called

“desk rejections”). In these cases, after having been read by myself and/or another member of the Editorial Board, the manuscript is deemed to lie outside the scope of papers published in *JEEM*. In many cases, this is simply because the paper is not focused on environmental or natural resource issues. In other cases, papers are rejected because they are a review of the literature, which *JEEM* does not typically publish, or an editorial regarding government policy. Regardless of the specific reason, it is the Editorial Board’s general view that it is best to let authors know early on in the review process that a paper is not a good fit with the *Journal*, rather than dragging out the review process and unnecessarily burdening reviewers. The author’s submission fee is refunded in these situations. To date, the desk rejection rate has averaged 11%.

The solid black segments in Figure 2 indicate papers that were offered the option of revising and resubmitting their manuscript to *JEEM*. Approximately one in four papers are in this category. This does not, of course, mean that the papers are eventually published in *JEEM*, as the authors may be either unable to address the concerns raised by reviewers or choose to submit their paper elsewhere. Again, the overall acceptance rate for the journal remains at approximately 17%.

Figure 2: The Disposition of Papers



As Figure 2 indicates, the revise and resubmit rates are similar for theoretical, empirical, and combination papers. However, the desk rejection rate is roughly double among empirical manuscripts (14% versus 7%). This is due in large part to the fact that many of these empirical papers are too narrowly focused on a local environmental issue without clear implications for broader policy concerns. This problem arises less frequently in the case of theoretical papers.

Another concern of authors regarding their submissions to a journal is turnaround time; the time from initial submission to the receipt of a decision regarding their paper's fate. *JEEM* has always placed considerable emphasis on providing authors with timely reviews. Historically, turnaround times have ranged from just over six weeks to approximately 17 weeks in 2000. In recent years, we have striven to reduce the turnaround times, while maintaining the quality of the reviews that authors receive. In 2001 and 2002, turnaround times averaged 13.5 and 12.7 weeks, respectively. Based on manuscripts received in the first five months of this year, the turnaround time is down again so far this year to 12.2 weeks.

Finally, Table 1 provides a breakdown of submitted papers by topic area and by year. The topic areas are based on a proposed expansion of the JEL codes currently under development by the *AERE* Board. Submitted papers were assigned a primary JEL code.<sup>1</sup> Table 1 provides one digit categories (i.e., Q1 through Q5), as well as selected two-digit categories (e.g. Q22: Fisheries). While there are additional two-digit categories, the ones reported in Table 2 were the dominant ones among the submitted papers. Finally, I have broken out some additional sub-categories for emphasis. For example, under the valuation of environmental benefits, I have separate out those focusing on revealed preference methods (e.g., travel cost and hedonic models) and those based on stated preference methods (e.g., contingent valuation and contingent behavior).

Clearly the main one-digit categories are Renewable Resources (Q2) and Environmental Economics and Policy (Q5), accounting for 93% of all submissions. Within the Renewable Resources category, papers dealing with fisheries and forestry dominate, though there appears to be some decline in forestry submissions

over the last three years. Within the Environmental Economics and Policy category (Q5), the Valuation (Q51) and Regulation (Q58) two-digit categories stand out. Indeed, together they make up roughly a third of all papers submitted to *JEEM*. In the past year, stated preference papers alone have made up nearly 10% of submitted papers. The importance of the Regulation category (Q58) is not surprising given that it covers a wide range of topics, from voluntary pollution control agreements to double dividends. However, much of this literature is focused on research into mechanism design and evaluation. Half of the papers in this category address issues surrounding tradable permit and/or tax systems.

Among the remaining two-digit categories, a number of topic areas may be worth highlighting. First, climate change and transboundary pollution (Q54) remains a relatively popular area of research, constituting just over eight percent of all submissions to *JEEM*. Among these papers, there has been considerable emphasis on the design of international agreements (not surprising in light of the developments surrounding the Kyoto Protocols). Second, within the Development and Trade category (Q56), submissions have declined over the past three years. This is partially due to the decline in research on Environmental Kuznets curves, which were popular 2001. Third, and finally, there has been a rise recently in papers addressing spatial issues in environmental economics. This development is not apparent in the numbers reported in Table 1, as the associated papers cross over a variety of topic areas, including land development, spatial econometrics, and in the modeling of the interface between economics and ecology. Further developments in this area are likely to continue as both computational capabilities and the available spatially detailed databases continue to grow.

## Conclusions

It is difficult as the Managing Editor of *JEEM* to assess the state of the journal and how well it is serving the needs of the profession. That is a judgment that is best left to others. The journal does continue to attract high quality papers on a diverse set of issue in environmental and nature resource management and the process of handling the papers, at least from my vantage point, continues to proceed smoothly. Moreover, independent rankings of journals suggest that *JEEM* is

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<sup>1</sup> Any assignment of papers to specific categories is a matter of judgment and subject to error as papers may address issues in several categories. Thus, one should view the results in Table 1 as providing a "broad brush" view of submissions to *JEEM*.

Table 1: Submissions by Topic Area				
Expand JEL Area	Percentage of Total Submissions			
	Total	2001	2002	2003
Q1: Agriculture	1.3	0.9	2.6	0.0
Q2: Renewable Resources and Conservation	16.7	20.2	13.6	17.0
Q22: Fisheries	6.1	5.8	5.5	7.5
Q23: Forestry	4.8	7.2	4.0	2.9
Q3: Nonrenewable Resources	3.6	2.7	3.3	5.2
Q4: Energy	1.5	0.4	2.6	1.2
Q5: Environmental Economics and Policy	76.5	75.8	77.9	75.0
Q51 Valuation of Environmental Benefits	15.8	17.9	14.7	14.8
• Revealed Preference	4.5	6.3	2.6	5.2
• Stated Preference	8.8	8.1	8.8	9.8
Q52: Pollution Control Costs and Distributional Effects	4.3	5.8	4.4	2.3
Q53: Air and Water Pollution, Noise, hazardous and solid waste	4.3	3.1	5.5	4.0
Q54: Climate, transboundary pollution, environmental federalism	8.3	8.1	8.1	8.1
• International Agreements	4.0	5.4	2.6	4.6
Q55: Technological Innovation	3.4	1.8	4.8	3.5
Q56: Environment and Development; environment and trade; sustainability, environmental accounting	10.2	13.0	9.2	8.2
Q57: Ecology and economics, biodiversity conservation	5.4	4.9	6.6	4.0
Q58: Government policy; environmental taxes, tradable permits, command and control, and regulation	17.2	16.1	16.9	19.1

held in high regard in the profession. A recent article by Kalaitzidakis, Mamuneas, and Stengos, forthcoming in the *European Economic Review*, ranks *JEEM* 25<sup>th</sup> among Economic journals, just behind the *Journal of Labor Economics* and just ahead of the *RAND Journal*. The current status of the journal is, of course, due largely

to the efforts of my predecessors and their Editorial Boards, the authors who have contributed to the journal, and the many reviewers whose timely, high quality reviews have made this journal possible. The goal of the current Editorial Board at *JEEM* is to maintain and enhance the quality of the journal as an outlet for research into environmental and natural resource issues.

**The Pace of PACE at the  
U.S. Environmental Protection Agency**

**Rich Iovanna, Kelly Maguire, and  
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**National Center for  
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**Introduction**

Understanding pollution abatement costs is requisite to sound environmental decision making. Accordingly, the U.S. Environmental Protection Agency's (EPA) National Center for Environmental Economics (NCEE) initiated an agreement in 1998 with the Bureau of Census to reinstate the dormant Pollution Abatement Costs and Expenditures (PACE) survey. Because the need for the estimates provided by the survey had, if anything, increased since the survey was discontinued in 1994, EPA committed funds to collect 1999 data.

The PACE survey provides estimates of the annual pollution prevention, treatment, disposal and recycling expenditures by manufacturing facilities in the United States. As such, the survey provides valuable insights into the costs of environmental protection. However, while the goal of the PACE survey is simple enough, to accurately estimate private sector pollution abatement costs and expenditures in the U.S., implementation of this goal has turned out to be a formidable challenge. In the process of re-instituting the PACE survey, NCEE encountered a host of challenges, some previously unresolved but many new. This essay provides a brief description of the survey's history and the uses of the PACE data. It then presents the issues encountered in developing the 1999 survey and a description of the information in the 1999 survey. We conclude with some

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of EPA's intentions regarding future PACE survey efforts.

**History and Uses**

With the exception of 1987, the Bureau of Census collected annual pollution abatement costs and expenditures data from 1973 through 1994, when the survey was discontinued due to budget cuts. Recognizing a continued need for the data both within and outside the EPA, the survey was re-instituted by EPA via an inter-agency agreement with Census to collect 1999 information. The lengthy hiatus served as an opportunity for reflect and to address concerns that the survey had not kept abreast of the evolution of the regulatory environment and of industry responses to it. Throughout its history the PACE data have been a resource for both EPA and researchers in general. At EPA, the PACE data provide a valuable source of information to conduct regulatory analyses, meet Congressional mandates, and satisfy Executive Orders, such as E.O. 12866.<sup>2</sup> For example, Former Senator Thompson sponsored amendments to budget legislation that requires the Office of Management and Budget to submit annual reports to Congress on the costs and benefits of regulatory programs (e.g., Federal Register, 2003). The PACE data serve as the cornerstone of the estimates for the costs of environmental regulations.

PACE data have also been used to satisfy provisions inherent to EPA's enabling statutes, themselves. Section 812 of the 1990 Clean Air Act Amendments, for instance, requires EPA to submit detailed reports on the costs, benefits, and economic impacts of all air pollution regulations. The first of these reports looked retrospectively at efforts to reduce air pollution from 1970 to 1990 (USEPA, 1997). This report used the PACE data as the basis for the manufacturing industries' expenditures for reduced air pollution.

While EPA is likely the largest single user of the PACE data, numerous research papers have been written using both the publicly available industry level data, as well as the establishment level data, the latter of which requires special approval by the Bureau of Census in order to access the records.

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<sup>2</sup> Executive Order 12866 requires all federal agencies assess the benefits and costs of economically significant regulatory actions (Federal Register 1993).

## The 1999 Survey

In an effort to redesign the PACE survey to address some of the current and anticipated uses of the data, several challenging issues regarding the scope and content of the survey emerged. The most fundamental scope consideration is that of whether or not to limit the inquiry to firms' out-of-pocket costs. Were the survey to also garner information such as lost productivity, EPA would be closer to a metric more meaningful for decision making at the National level: social costs. This is because, not only would the survey results be more comprehensive in terms of the true costs faced by a facility, but such information would facilitate estimation of dead-weight losses as well. Wisely, given the challenges associated with requesting information on even relatively straightforward out-of-pocket costs, the 1999 survey does not collect information regarding lost productivity.

A second issue is whether the focus should fall exclusively upon regulatory costs or more broadly upon pollution abatement. Historically, the PACE survey has encompassed, though not differentiated among, costs attributable to regulatory requirements, non-regulatory programs, and those incurred voluntarily. The survey also made no distinction between costs imposed by Federal, state and local levels of government. EPA chose the same route for the 1999 survey as that taken historically since reporting on costs at such a fine level is a task for which facility record keeping is yet manifestly unsuited.

The third issue relates to the treatment of situations when pollution is prevented incidentally, such as when capital turnover occurs and a more efficient production process is adopted. Abatement in this case is purely an artifact of profit maximization or technological change, rather than the consequence of a commitment to environmental protection. Although there are no incremental costs (there may be even cost savings) attributable to emission and/or discharge reductions, respondents can assume just the opposite and erroneously equate and report the entire costs of the new production technology with pollution abatement cost. Although initial versions of the 1999 survey included both some discussion of this issue and an opportunity to offer estimates of costs savings, some commentators found any treatment at all so unrealistic that they were struck from the final version of the survey.

As for changes, the 1999 survey introduces language more amenable to today's technology. Most notably, the 1999 survey distinguishes between pollution prevention and pollution treatment, which were previously referred to as "production process enhancements" and "end-of-pipe" technologies, respectively. Given the advent of integrated technologies and addressing pollution in a more holistic manner, pollution prevention more accurately reflects industry nomenclature. However, we asked only for aggregate, establishment-wide values due to reviewer concerns that finer categories, such as by media, would be difficult for establishments to discern. We did maintain distinctions across media and between hazardous/non-hazardous abatement for pollution treatment, disposal, and recycling costs.

Lastly, a shortcoming of earlier efforts was how the costs of basic or public health services and those of environmental protection were conflated. The preponderance of historical solid waste costs were more accurately that of disposal, i.e., the transport of wastes away from the facility, rather than their abatement. The short-term fix for the 1999 survey was that of separating out disposal costs from those associated with abatement. A true solution would include a means by which to obtain data on costs of activities undertaken by landfills to comply with the Resource Conservation and Recovery Act (RCRA). While other changes were incorporated into the 1999 survey, these are some of the highlights.

The 1999 survey was mailed to approximately 21,000 establishments in manufacturing, mining, and electric utility industries based on a sample drawn from the Census of Manufacturers, Census of Mining, and Standard Statistical Establishment Lists (for electric utility industries), respectively. The sample was stratified by size within industries and region. The survey was sent to establishments with more than 20 employees; a small sample (approximately 500) of smaller establishments was surveyed to test the assumption that these establishments contribute negligible amounts to overall pollution abatement expenditures. As a Bureau of Census survey, responding to the PACE survey is required by law and we achieved an overall response rate of 83 percent. The survey report can be found at:

[www.census.gov/prod/2002pubs/ma200-99.pdf](http://www.census.gov/prod/2002pubs/ma200-99.pdf)

The bulk of the survey collected pollution treatment capital expenditures and operating costs by air, water, solid waste, and multi-media categories, as well as the percent of these costs allocated to the treatment of

hazardous and non-hazardous pollution. In addition, the survey collects on- and off-site disposal and recycling costs. The 1999 survey did not collect the finer details of operating costs (e.g., wages, materials) in an effort to reduce respondent burden. As mentioned above, the survey collected pollution prevention estimates as an aggregate estimate for the establishment (i.e., this figure is not broken down by media or other categories). These estimates are all reported by industry, to the 6-digit NAICS code, as well as by state. While we could not stratify the sample by state because of limits on the sample size, we felt that these estimates were more meaningful to report than the regional estimates.

As a new addition to the 1999 survey, we collected information on site-cleanup costs, as well as costs for habitat protection, monitoring and testing and administrative costs associated with environmental protection. We also collected data on payments to governments for permits and the value of tradeable permits bought and sold. These categories reflect new ways of doing business for many establishments and thus are worthy of being included in the PACE survey.

### **Next Steps**

While the 1999 survey was implemented as a one-time survey only, the ultimate goal is to reinstate the survey on an annual basis. This will provide EPA with timely information needed for analyses and will better enable researchers to answer questions of interest, particularly those that require longitudinal data.

Before the next attempt to collect PACE data is made, however, there is understandable interest in identifying a means by which to validate survey responses and ascertain the degree to which PACE survey responses deviate from “true” pollution abatement expenditures. While research exists on validity tests of household data, there have been few published formal efforts regarding establishment survey data. We speculate that the paucity of research reflects the fact that establishment surveys typically report confidential data not readily accessible at the establishment level (aggregate statistics are published) and the costs associated with conducting such tests, say via on-site visits to establishments, are prohibitive. Nonetheless, there are two means by which establishment survey data can be validated: plant visits or modeling the values of interest. The Toxic Release Inventory (TRI) Data Quality Report (USEPA, 1998) appears to be the singular example of the former. This

report reflects an independent, engineering assessment of toxic releases from TRI firms. The results from these visits are compared to reported results for the same plant. Discrepancies are reported as errors, calculated as the simple difference between the reported and actual release. Results show that TRI releases are often under-reported by facilities.

Alternatively, a modeling approach could be used to independently validate the survey results. While this approach has been widely applied in the context of PACE, the standard assumption that production and abatement decisions are separable contradicts the current state of affairs and renders most models ill-suited to measure any but the most obvious of abatement costs. More recent work, however, acknowledges that establishments are now operating in a pollution prevention paradigm, whereby decisions are made jointly. Researchers have augmented both production and cost functions in order to estimate both visible and hidden costs. For example, Färe, Grosskopf, and Pasurka (2002) compare PACE data reported by electric utility firms in the EIA-767 Survey administered by the Department of Energy to estimates derived from modeling the joint production of both good and bad (i.e., pollution) outputs. Their results show that the survey data provide lower costs than those derived from a modeling approach. Joshi, Krishnan, and Lave (2001) incorporate a measure of regulatory stringency into a cost function to ascertain the impact it has on traditional cost pools. They, too, find that estimated costs exceed reported costs.

After considering various options, EPA has elected to take a two-pronged approach to assessing the PACE survey. EPA is establishing a peer-review panel of individuals from outside the Agency who are conversant with PACE data and/or establishment surveys. These individuals will opine at critical junctures during the development of the next phase of the PACE survey. The hope is that, by eliciting an independent group’s input, we will resolve some of the outstanding issues regarding the survey. EPA will also elicit the support of environmental engineers who are familiar with the production processes used by the major industry groups in the PACE sample. The purpose of the engineering support is to assist EPA in designing a survey that will reflect processes in ways familiar to industry respondents, such as by suggesting nomenclature, definitions, and illustrative examples. Engineers will conduct a handful of site visits both to develop and validate the survey. The hope is that the combined effect

will result in a survey that is both familiar to the respondents and captures the full scope of pollution abatement costs.

EPA is currently engaged in these activities with contractor support with the hopes of pre-testing a survey instrument in 2004. Based on the results of the pre-test, the survey will be finalized in hope of administering it on a full-scale basis.

## Conclusions

While EPA did manage with the 1999 survey to resolve some of the issues hampering earlier versions, such as outdated nomenclature, there remain a variety of outstanding issues that are likely to invite criticism. Much of the work ahead is in terms of honing survey definitions and design, particularly as regards pollution prevention, and implementing the survey on a more frequent basis. Further improvements to the survey will undoubtedly enhance the ability of the PACE survey to measure pollution abatement costs comprehensively. Measuring pollution prevention is a particularly difficult challenge. However, the research and public policy benefits are high. The PACE data will provide a basis to understand firms' responses to pollution control, the pattern of expenditures on abatement, and the productivity of reducing pollution per unit of abatement.

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# Will Cinderella Ever Be Invited to the Asymmetric Instruments Ball? The Case for Considering Emission Taxes With Thresholds

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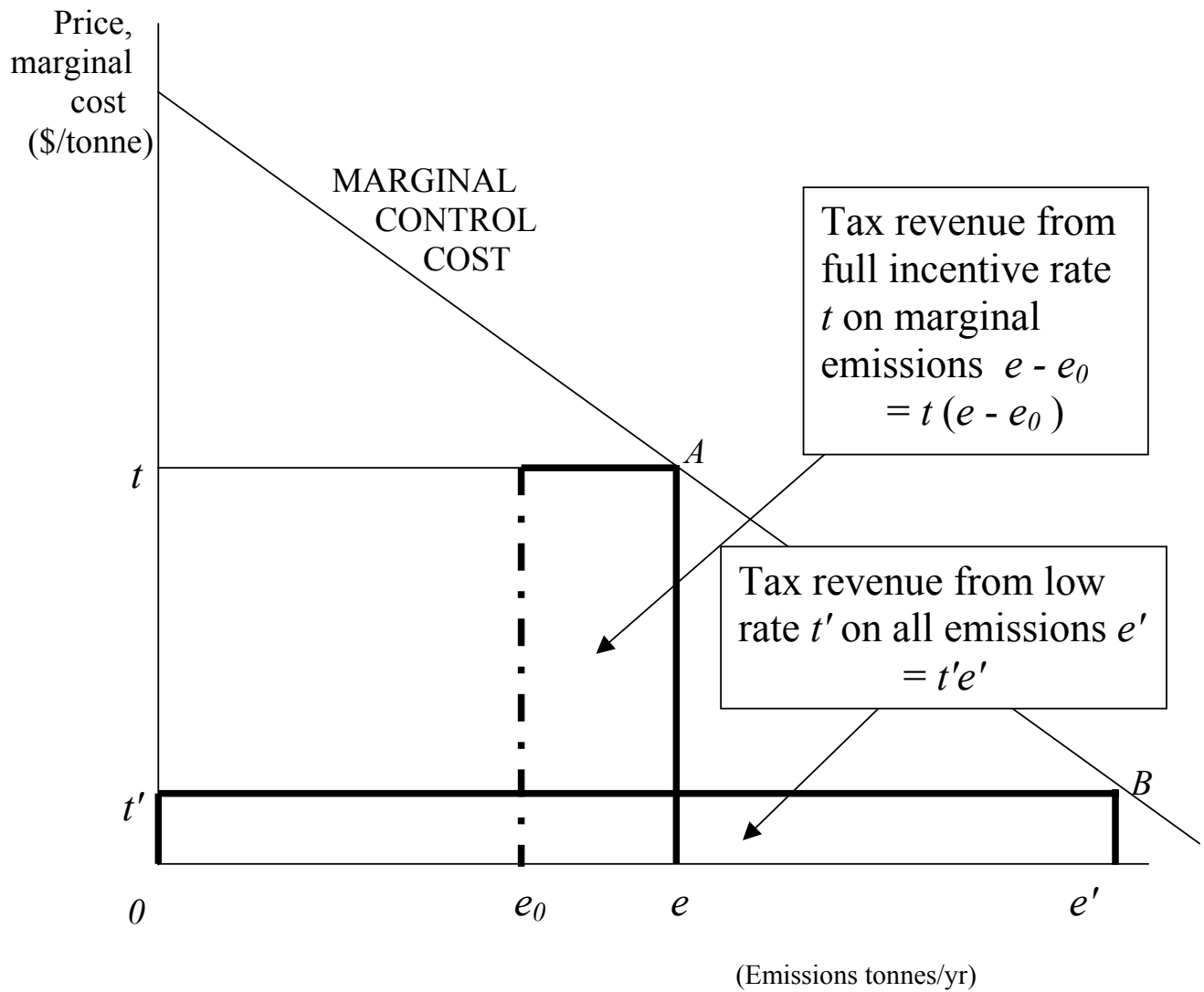
Website: <http://cres.anu.edu.au/~pezzey>

A Cinderella idea in any field of research might be defined as one which has some intrinsic merit, but gets overlooked because of a poor early reception and then a self-perpetuating lack of publicity. Influential writers once gave the idea a bad press, so almost no one writes about it, so almost no one hears about it, so almost no one writes about it. This seems to have been the fate of an idea in environmental economics published at least four times in journals since 1980, the latest occasion being my forthcoming article in *Environmental and Resource Economics*. The idea is very largely ignored by economists who compare market-based instruments (MBIs) of environmental policy such as emission taxes and tradeable emission permits. What leads me to promote it yet again is the belief that real progress on some of the biggest issues in environmental and resource economics may be at stake. In particular, achieving significant control of greenhouse gas (GHG) emissions may prove impossible unless some version of it is put into practice. The idea may also prove useful for enabling prices for traded resources like water to be increased substantially from current, unsustainably low levels.

So what is the idea? It could have many names: three are emission taxes with thresholds, environmental

pricing with partial exemptions, and resource charges with inframarginal allowances. All these MBIs amount to the same formula: that a user of an environmental resource should pay the authority that manages the resource an amount  $t(e-e_0)$  dollars per year, where  $t$  is a tax, price increase, charge, levy or fee (say in dollars per tonne),  $e$  is the resulting level of resource use (say in tonnes per year), and  $e_0$  is some baseline or threshold level of use which is exempt from payments.  $e_0$  could be anywhere between 0 (a pure tax) and the original, uncontrolled level of emissions (Mumy 1980). For GHG control,  $t$  would be a tax in dollars per tonne of CO<sub>2</sub>-equivalent, and  $e$  would be a socially desirable level of GHG emissions. For water use,  $t$  would be the difference between a current, heavily subsidised price, and a price reflecting the true environmental scarcity of water, while  $e$  would be consumption at the latter price. The basic idea can be seen from Figure 1, a standard marginal-cost-versus-emissions diagram for one user, where point A represents the instrument just mentioned. Here, the threshold  $e_0$  is shown between 0 and  $e$ , but it could exceed  $e$  for some users, resulting in a payment from the authority.

In all cases, the aim is that the threshold  $e_0$  makes it politically much more acceptable to set a tax rate  $t$  at the full incentive rate, which will send the correct scarcity signal to influence users' marginal decisions, and thus achieve static and dynamic efficiency in emissions control. The improved acceptability comes from revenue  $te_0$  not being transferred from users to the authority. Experience has shown that whenever there is no threshold ( $e_0 = 0$ ), so that a "pure" environmental tax is charged on all emissions, something like point B on Figure 1 results. The only acceptable tax rate is a much lower  $t'$ , which in itself reduces emissions only to the much higher, inefficient level  $e'$ . An associated feature often found in practice, but not shown on Figure 1, is that much of the tax revenue  $t'e'$  is spent on targeted investments in pollution control, which reduces pollution



**Figure 1.** How exempting inframarginal emissions  $e_0$  can make it politically acceptable to use the full incentive emission tax rate  $t$ .

Source: Pezzey (2003).

further, but precludes a broader, market-based response. Another associated feature of existing tax schemes is that in many emission-intensive industries, the very emission sources that would be, and for efficiency need to be, most affected by a tax scheme, are *totally* exempted from them (Ekins and Speck 1999). This is quite different from a partial, infra-marginal exemption like  $e_0$ .

### Analogy to Free Permits

Figure 1 also illustrates tradeable emission permits, if  $e$  is the total number of permits created by the authority, and hence total emissions;  $t$  is the market-clearing price of a permit; and  $e_0$  permits are initially given away free by the authority, with  $e - e_0$  being sold in some way. To achieve acceptability, nearly all operating permit schemes have made nearly all permits free ( $e_0 - e$ ) (Stavins 2003). The fact that the same diagram applies to taxes and tradeable permits suggests two important results, one widely accepted, and one widely overlooked. The widely accepted result is that the level of free permits  $e_0$  has no effect on the efficiency of firms' (or other users') entry to and exit from the emitting industry.<sup>1</sup> The widely over-looked result, established independently by Pezzey (1992) and Farrow (1995) and subject to a crucial proviso, is that the level of thresholds  $e_0$  under a tax scheme also has no effect on entry-exit efficiency, which reveals a considerable symmetry between taxes and tradeable permits. The proviso is that thresholds must be quasi-property rights, just as free permits are. That is, they must not be conditional on a firm being a current producer. They must instead be given to firms existing when the tax scheme is introduced, and thereafter neither taken from exiting firms, nor given to entering firms.

The overlooking of this result can be largely traced to Baumol and Oates (1988). Their view was that, contrary to the above proviso, emission tax thresholds cannot be treated like free permits, must be available to all firms in an industry, and therefore must cause excessive industry size and emissions. This view is well established in textbooks like Hanley et al. (1997, pp72-5 and 133-6), Lesser et al. (1997, pp157-9) and Xepapadeas (1997,

pp16-9).<sup>2</sup> In Pezzey (2003) I give several arguments against it. For example, just as banks make payments at time-varying interest rates on permanent deposit accounts, why cannot the authority make permanent payments at time-varying emission tax rates to all threshold owners, whether current producers or not, so that tax thresholds can indeed be treated like free permits? Or if administering permanent payments is indeed too costly, then a minimum holding size or a maximum holding life for threshold owners which are not producing firms could lower costs.

### The Need to Consider All Costs, and a Full Set of MBIs

However, debating these opposing views can be sterile, and is not my main concern. Both are implicitly counsels of perfection, seeking a Holy Grail of perfect, textbook economic efficiency, irrespective of politics or practicality. What matters is *achieving* -- that is, getting accepted politically -- an MBI of emission control which is a net improvement on the current situation, taking *all* costs into account. Emission tax thresholds which *are* conditional on production may fit so much better into an existing tax system that they are better overall, once administrative as well as economic efficiency costs are included, than either the status quo or unconditional tax thresholds.

My main concern is just that an emission tax scheme with (unconditional or conditional) thresholds (exemptions, baselines, allowances) has been a Cinderella that almost never gets invited to dance at the academics' theoretical ball, let alone the policymakers' practical ball. So its pros and cons are hardly ever debated, even in principle. Time and again, academic papers which compare taxes and tradeable permits as potential MBIs of emission control (often as part of a wider range of instruments) set an asymmetric agenda. Three MBIs are regularly analysed: pure taxes ( $e_0 = 0$ ), fully auctioned/sold tradeable permits ( $e_0 = 0$ ), and free permits ( $e_0 = e$ ). But a fourth instrument, an emission tax-with-thresholds ( $e_0 = e$ ), which would complete the 2x2 symmetry is omitted, despite a well-known near example in almost every academic's pay check: income tax.<sup>3</sup> The habit of analysing

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<sup>1</sup> The level of  $e_0$  does of course affect the government's revenue, and hence the economic welfare gained from recycling revenue as lower conventional taxes, as the extensive double dividend literature has pointed out (Bovenberg 1999). However, this is not the issue here. Moreover, increased revenue-raising reduces political acceptability, given the uneven powers of different interest groups.

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<sup>2</sup> Kling and Zhao (2000) claim that free permits are also inefficient, but this result relies on the unconventional assumption that free permits are conditional on production.

<sup>3</sup> Even a symmetric, 2x2 choice would leave the menu of policy instruments dangerously incomplete in many readers' minds. As noted above, to achieve political acceptability in the most flexible way,  $e_0$  should be chosen from a *continuous*, not discrete, range of values. However, to keep the discussion

just three of the four instruments—or including only conditional thresholds, which are then branded as inefficient—dates back at least to Milliman and Prince (1989). It occurs recently in several papers, such as Boemare and Quirion (2002), Ekins and Barker (2001), Felder and Schleiniger (2002), Fischer et al. (2003), Pizer (2002) and Requate and Unold (2003).

## Relevance to GHG Control

Does it matter that a theoretical, untried instrument is left out of discussions of potential policies? The biggest answer lies in the history of attempts at GHG emission control, where a price-based instrument (carbon taxation), applied to almost all economic sectors at full incentive rates, is now widely regarded as politically unacceptable. As just one, almost random example of this received wisdom, consider a note from *Building on the Kyoto Protocol: Options for Protecting the Climate* (Baumert and Kete 2002, p29):

"Another reason for the preference for trading over taxes (i.e. quantity over price instruments) identified by Pizer...is the hope that emission allowances might be distributed free, whereas a carbon tax would require a transfer of revenue to governments."

The origin of this narrow view of carbon taxation surely lies in the pervasive influence of the conventional view that taxes-with-thresholds are inefficient. Arguably, this is why widespread proposals for carbon taxation in the early 1990s, particularly by the European Commission, considered only a pure tax. It should have been no surprise that political resistance to the amounts of revenue that a pure tax would raise, if set at anything like a full incentive rate, was too great to be overcome, despite the valiant efforts of "double dividend" enthusiasts to point out the efficiency benefits of recycling the tax revenues. The possibility of using tax thresholds *to avoid the political pain of raising so much tax revenue in the first place*, was hardly mentioned in the debate.<sup>4</sup> The 1997 Kyoto Protocol

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simple, we continue to discuss just discrete choices of instruments.

<sup>4</sup> A more subtle but important later point, briefly mentioned by Pezzey and Park (1998, p550) and well explored by Bovenberg and Goulder (2001), is that any government policy to restrict the total amount of carbon sold gives sellers of primary carbon fuels large monopoly profits, because of the inelasticity of total carbon demand. Governments therefore *need* to raise substantial amounts of revenue, in order to leave sellers financially unaffected by carbon control rather than profiting from it. If permits rather than taxes remain the principal

instrument of choice, perhaps mainly because the use of free permits to avoid raising politically unacceptable amounts of revenue was seen as an obvious, if far from uncontroversial, possibility.

Yet, as is well known from Weitzman (1974), there *may* be important reasons for choosing a price-based (tax) rather than a quantity-based (permit) instrument, depending on what kind of uncertainties there are in the real world. In the case of GHGs, where one year's emissions have only a small effect on the vast stocks of gases in the global atmosphere, and therefore on the damage caused by climate change, Pizer (2002) showed that the global net benefits of taxes greatly outstrip those of permits. Since he recognised pure taxes as politically unappealing, but omitted the alternative of taxes-with-thresholds, he then recommended a hybrid permit policy, where an initial quantity target is coupled with a trigger price at which additional, above-target permits are sold. The theoretical advantages of such hybrid policies are clear, since they form a continuum which includes both taxes and tradeable permits as extreme cases (Roberts and Spence 1976). But if for some reason hybrids will not work, a tax-with-thresholds can achieve political acceptability and complete control over the emission price, and so should be included on a fuller, symmetric agenda of policy instruments.

Of course, an emission tax with thresholds—or environmental pricing with partial exemptions, or a resource charge with inframarginal allowances, call it what you will—is no panacea. It shares many of the problems of free permits, not least the rent-seeking and administrative costs of deciding who gets what levels of thresholds. As with free permits, if tax thresholds are set so as to be revenue-neutral, then reducing emissions may not even be welfare-improving at the margin, because of the tax-interaction effect (Goulder, Parry and Burtraw 1997). And even if thresholds are set to achieve profit-neutrality as in Bovenberg and Goulder (2001), the unavoidable reallocation of resources needed for any substantial control of emissions (such as a move from B to A in Figure 1) can still cause painful transition costs to currently employed labour, capital and resource inputs. Finally, a tax with thresholds cannot easily achieve the revenue-neutrality which is automatic with free permits; and taxes with unconditional thresholds may raise novel difficulties in

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instrument used, then either the initial distribution of most permits should *not* be free, or some of the permit rents should be captured by taxes (Grafton and Devlin 1996). Getting this point established in the political debate is unlikely to be easy.

some legal systems. So Cinderella is no obvious potential winner of ballroom gold medals, but neither does she have two left feet. And unless she is invited, how will we ever know how well she can dance?

### Acknowledgment

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### AAAS SCIENCE AND TECHNOLOGY POLICY FELLOWSHIPS, 2004-05

Scientists and engineers are invited to help shape science and technology policy in Washington, D.C. by contributing scientific and technical information and external perspectives while learning how government works.

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The fellowship year starts September 1, 2004. Fellows attend a two-week orientation before beginning their assignments and participate in a year-long seminar series on topics relevant to science, technology and public policy. Stipends begin at \$60,000. The application deadline is **January 10, 2004**.

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### AMERICA'S CHILDREN AND THE ENVIRONMENT

A valuable new resource for children's environmental health is now online at:

<http://www.epa.gov/envirohealth/children>.

The *America's Children and the Environment* website presents data and discussion on information for environmental contaminants and children's health and is based on the recently published report: *America's Children and the Environment: Measures of Contaminants, Body Burdens and Illnesses*. This study, developed by the U.S. Environmental Protection Agency (EPA), reports on trends for levels of environmental contaminants in air, water, food, and soil; concentrations of contaminants measured in the bodies of women and children; and childhood illnesses that may be influenced by environmental contaminants. A total of 27 measures are included.

The web site features a background summary explaining each issue, graphs showing trends over time, and explanations of the significance of the data. In addition, references, data tables, and data sources are included and available for download, with on-line links where available. The significant limitations on data available for tracking environmental conditions and disease are discussed and recommendations provided for improvements as "future directions."

The web site also provides links between measures that are related. For example, the page on trends in air pollution links directly to the page on trends in respiratory diseases related to air pollution.

EPA released a hard copy report with most of this information in February 2003. All of the information presented in the report is available on the web site. Additional information is included on the web site, which will be updated over time.

Highlights of America's Children and the Environment include:

- Removing lead from gasoline proved to be one of the more important public health interventions for children since EPA's creation;
- Through the late 1990s, EPA continued to see a decrease in the blood lead concentrations in children primarily due to the phase-out of lead in paint.
- There has been a decrease in children's exposure to environmental tobacco smoke, as indicated through direct measurements of markers for exposure in children's blood and through surveys of smoking habits in children's homes.
- There have been modest decreases in children's exposures to excessive levels of air pollution and contaminants in drinking water.
- EPA remains concerned about children who were potentially exposed to mercury in the womb. About 8 percent of women of childbearing age in the United States have concentrations of mercury in their body at levels of potential concern
- In 2001, 9 percent of all children in the United States had asthma (6.3 million children) and about 6 percent of all children had experienced an asthma attack in the previous 12 months.

The web site contains instructions for ordering copies of the published report. An electronic version of the published report can also be downloaded from the web site. If you have any questions, please contact Tracey Woodruff at

Telephone: 415-947-4277

E-mail: [woodruff.tracey@epa.gov](mailto:woodruff.tracey@epa.gov) or

Dan Axelrad at:

Telephone: 202-566-2304

E-mail: [axelrad.daniel@epa.gov](mailto:axelrad.daniel@epa.gov)

**EARTH INSTITUTE AT COLUMBIA  
UNIVERSITY POSTDOCTORAL  
FELLOWS PROGRAM**

**The Earth Institute at Columbia University**

**Postdoctoral Fellows Program in  
Sustainable Development of the Planet**

The Earth Institute at Columbia University is the world's leading academic center for the study, teaching, and implementation of sustainable development. It builds upon excellence in the core disciplines—earth sciences, biological sciences, engineering sciences, social sciences, and health sciences—and stresses cross-disciplinary approaches to complex problems. Through research, training, and global partnerships, the Earth Institute mobilizes science and technology to advance sustainable development and address environmental degradation, placing special emphasis on the needs of the world's poor.

The Earth Institute seeks applications from innovative postdoctoral candidates interested in pathbreaking disciplinary research as well as multidisciplinary initiatives on sustainable development issues. The Postdoctoral Fellows Program in Sustainable Development provides young scholars with the opportunity to enhance their foundation in one of the Earth Institute's core disciplines while at the same time acquiring the cross-disciplinary expertise and breadth needed to address critical issues related to reducing poverty, hunger, disease, and environmental degradation.

Candidates for the Postdoctoral Fellows Program should submit a proposal for research, based in one of the core disciplines mentioned above, that will contribute to the goal of global sustainable development. Applicants should also indicate the general direction of multidisciplinary training and research opportunities that they would like to pursue at the Earth Institute. This could take the form of participating in and contributing to an existing multidisciplinary Earth Institute project, an extension of an existing project, or a new project that connects existing Earth Institute expertise in novel ways. Candidates should identify their desired small multidisciplinary mentoring team, i.e., two or more senior faculty members or research scientists/scholars at Columbia with whom they would like to work during their fellowship. Please visit the Earth Institute Postdoctoral Fellows Web site (see below) for a list of Earth Institute research units and relevant Columbia University and Barnard College departments. Fellowships will ordinarily be granted for a period of 24 months.

Application instructions and more information are available on the Earth Institute Postdoctoral Fellows Web site:

<http://www.earthinstitute.columbia.edu/postdoc/>.

Applications submitted by **December 1, 2003**, will be considered for fellowships starting in the summer or fall of 2004. We prefer that application forms be completed online:

<http://www.earth.columbia.edu/postdoc/>.

For more information contact:

David Downie  
Director, Fellows Program  
The Earth Institute at Columbia University  
535 West 116th Street (Mail Code 4335)  
New York, NY 10027  
Telephone: 212-854-5725  
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**CALL FOR REQUEST FOR  
QUALIFICATIONS (RFQ) PLANNING  
SERVICES CONSULTANT**

Notice is hereby given to prospective proposers that the Naval Properties Local Redevelopment Authority (LRA) of the City of Key West, Florida is seeking a Planning Services Consultant to perform "The Impact of the Cruise Ship Industry on the Quality of Life in Key West" Study: RFQ No 04-001. The Clerk of the City of Key West, Florida at 525 Angela Street, Key West, Florida 33040 will receive RFQ packages until 3:00 P.M. local time on **January 7, 2004**. Late proposals will not be considered. Request for Qualification Documents may be obtained from DemandStar by Onvia at [www.demandstar.com/supplier](http://www.demandstar.com/supplier) or call toll-free 1-800-711-1712.

One (1) original and eight (8) copies of the proposal are to be enclosed in two (2) sealed envelopes, one within the other clearly marked on the outside: REQUEST FOR QUALIFICATIONS FOR PLANNING SERVICES CONSULTANT: THE IMPACTS OF THE CRUISE SHIP INDUSTRY ON THE QUALITY OF LIFE IN KEY WEST: RFQ NO. 04-001, addressed and delivered to:

City Clerk  
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City Hall, 525 Angela Street  
Key West, FL 33040

At the time of the award, the successful proposer must show satisfactory documentation of such State, County and City licenses as would be required. Any permit and/or license requirement and subsequent costs are located within the documents. The successful proposer must also be able to satisfy the City Attorney as to such insurance coverage and legal requirements as may be demanded by the bid in question.

The LRA may reject bids: (1) for budgetary reasons, (2) if the proposer misstates or conceals a material fact in its proposal, (3) if the proposer does not strictly conform to the law or is nonresponsive to proposal requirements, (4) if the bid is conditional, or (5) if a change of circumstances occurs making the purpose of the bid unnecessary to the LRA. The LRA may also waive any minor informalities or irregularities in any bid. The LRA may, however, reject all bids whenever it is deemed in the best interest of the LRA to do so.

**UNIVERSITY OF CALIFORNIA,  
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Are you considering a Ph.D. in an environmental or economics field? The University of California, Santa Barbara (UCSB) announces a new National Science Foundation (NSF) funded training program in Environmental Economics. Students work toward a Ph. D. from either the Department of Economics or the Bren School of Environmental Science and Management at UCSB, one of the top research universities in the United States. Students undertake rigorous training in environmental economics with a focus in one natural science area: Applied Ecology, Marine Science, Hydrology or Climate. Fellowship grants are available.

Although the program is strongly economics in orientation we are looking for students with excellent quantitative skills from a wide range of majors including the natural sciences, social sciences, mathematics, engineering, agriculture, as well as economics.

Please review our web site for details: [www.ees.ucsb.edu](http://www.ees.ucsb.edu). We invite you to consider applying. Our deadline for application for Fall 2004 is **December 15, 2003**.

## EUROPEAN YOUNG INVESTIGATOR AWARD (EURYI)

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Europe has entered the competition to hire the best young scientists in the world. The European Young Investigator award (EURYI) offers to 25 young and outstanding scientists from any country in the world, the possibility to create their own team in Europe in any field of knowledge.

EURYI is proposed directly by the Heads of the European Research Organisations (EUROHORCS) in collaboration with the European Science Foundation (ESF). European and national institutions offer various awards in a new spirit which is clearly quality and autonomy driven, also financially rewarded according to merit. With the EURYI program, Europe proves again that it can provide favorable conditions in the best scientific and cultural environment in the world.

Its specificity is that it is both European and directly organized by the scientific community itself through its research institutions. The selection process has two parts: the first step is performed by the member organizations of the host country, and the second step is organized by the ESF. The true European spirit of this initiative is also asserted by a common funding by the EUROHORCS member participating organizations with no rule of juste retour.

Fifteen countries participate in the program: Austria, Belgium, Denmark, Finland, France, Germany, Greece, Hungary, Ireland, Netherlands, Norway, Portugal, Spain, Switzerland, and the United Kingdom.

Twenty-five awards of an amount up to 250k€/year, will be offered for projects up to five year in duration in a European laboratory in any discipline of science, including humanities. The awardees will create their own team and manage it themselves in a European research center of their choice. The quality of the project as well as the host center will be taken into account; neither nationality, nor age will. However these awards are meant to attract young scientists and the only rule will be that they should be between two and ten years after the PhD.

The dead line for the application is **December 15, 2003**. The first selected projects will be implemented in October 2004. For more information, see the European Science Foundation website at: [www.esf.org](http://www.esf.org) or contact  
Jens Degett  
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**Complete information about the following positions is posted on the AERE Web Page at: [www.aere.org](http://www.aere.org).**

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**Rice University, Houston, Texas:**

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