

USSEE Newsletter

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Society News

Receiving the *USSEE Newsletter*

In the survey made with the first *Newsletter*, we asked if you wanted the *Newsletter* sent by regular mail or electronically. About half of the respondents requested electronic receipt. Our mailing list has grown three fold to a little over three hundred. In order to save time and money we would like to send as many *Newsletters* as possible electronically. If you would be willing to receive the *Newsletter* electronically, please email the *Newsletter* at coonrk@rpi.edu and ask to be put on our electronic list. Please do it now before you forget. THANKS! (Carl McDaniel, mcdanc@rpi.edu)

USSEE Conference Evaluations

USSEE's first biennial conference, *Pathways to Sustainability: Theory and Practice*, held in Duluth, MN, July 11-13, 2001, received high marks. Thirty of the 200 attendees completed an evaluation form, so the results below should be viewed with sample size in mind; however, the comments received provide an indication of strengths and areas for improvement.

The following table gives ranks for general conference features (5 = excellent). Remarks made about some of the lower and mid-ranked items include greater use of poster sessions due to the interaction they allow, and detailed suggestions for easing a crowded schedule. There was even one very specific note about asking attendees to bring their own coffee mugs similar to current policy for Society for Conservation Biology conferences.

Overall conference	Mean
Conference location at DECC facility (Duluth)	4.5
Onsite registration	4.5
Cost	4.0
Social events	3.9
Website	3.8
Display tables/posters	3.8
Pre-conference communication	3.7
Pace and timing of schedule	3.6
Efforts at sustainable, low-impact event	3.3

In response to a query, "What did you like best about the conference?," excellent plenary speakers received multiple mentions. In fact, speaker-specific mean scores ranged from 4.5 to 4.0. Other open-ended responses mentioned more than once included the energy and inspiration gained from networking,

informality and small size of the gathering, Duluth location and conference facility, snacks and constant coffee, and helpfulness of the Institute for a Sustainable Future hosts.

The problematic features that participants liked least clustered around three themes: timing issues, uneven presentation quality, and future direction. Representative comments in the first category included: an over-packed daily schedule, too many concurrent sessions, a paucity of time available for formal or informal interaction, and a laxity on start/finish times. Feedback on presentations ranged from frustration with over-technical, too basic, and incomplete papers, to the typical lack of discussion time. Finally, some felt there was not a clear sense of what is next for this professional group, compounded by the absence of a formal session to discuss the purpose, goals, and direction of the USSEE.

Evaluation respondents were prolific in their recommendations for improving our next meeting. Sample comments:

More than one mention

- Hold a series of topic-specific focus group discussions; add a breakout discussion where participants suggest a direction for society and the discipline in general.
- Concurrent sessions should adhere to a rigid time schedule, in order to allow moving between talks of interests.
- Don't accept every abstract; peer review of presentations.
- Give facilitators more direction, including the importance of holding to time and integrating the session.
- Make more informal discussion time available.

Other

- Hold a facilitated ice-breaker session early.
- Hold a USSEE business meeting to discuss organizational issues.
- Maximum of 3 speakers in concurrent sessions.
- Invite more nonacademic speakers.
- Identify student papers.
- Ask speakers to indicate how their work will advance or contribute to the development of ecological economics.
- More ecology-related topics.
- Provide list of participants at start of meeting.
- Plan for Saturday night stay-over
- Hold conference at a camp for lower cost
- Later start times
- Work harder on a low-impact event

Sue Mageau (smageau@isfusa.org)

Election of Two Board Members — PLEASE VOTE NOW

The USSEE is holding its at large election for two new board members. The terms are two-year appointments starting January 1, 2001.

The Secretariat emailed the below information to all members with the intent of an electronic election. If you did not receive the email or vote yet, you can vote on line (vote@ussee.org) or send a paper ballot to Vote, USSEE Secretariat Offices, 32 East First Street - Suite #206, Duluth, MN 55802. For your vote by

mail to be counted, you must have your return address on the envelop and sign your name over the seal on the backside. The deadline for votes to be received is December 21, 2001.

Please vote for two of the following five candidates. In your reply PLEASE ONLY include the names of the two candidates of your choice.

Example Response

Jane Smith

John Jones

Vote for just two of the following five candidates:

Paul Baer I am currently in the third year of my PhD studies in the Energy and Resources Group at the University of California, where the main focus of my studies are climate change science and policy. My long-term goal is to help create ecological economics as a serious alternative to mainstream economics. I also am committed to the building the institutions of ecological economics, and have participated in both the organizing committee for the USSEE and the development of the international EE graduate student network. At UC Berkeley, I have helped form an active climate change policy group, and am currently co-teaching a new course in interdisciplinary environmental studies with Dick Norgaard and ecologist John Harte. In the last year I also was co-founder of the new organization EcoEquity, which promotes the principle of equal rights to global common resources through a focus on equity in the climate negotiations. As a boardmember of USSEE, I would hope to contribute both through my extensive organizational experience and through my understanding of the needs of graduate students and the intellectual problems facing ecological economists. Whether or not I am elected to board, I hope to contribute to the strengthening of graduate education and communication between graduate students in ecological economics.

Brian Czech My formal education is a B.S. in wildlife ecology from the University of Wisconsin, an M.S. in wildlife science from the University of Washington, and a Ph.D. in Renewable Natural Resources from the University of Arizona. I am a conservation biologist in the national office of the United States Fish and Wildlife Service. While drafting my Ph.D. dissertation, an analysis of the Endangered Species Act, I noted that the list of species endangerment causes looked like a Who's Who of the American economy. I began to study economic growth theory and was naturally led to the ecological economics movement. I have contributed to ecological economics with theoretical and empirical assessments of the fundamental conflict between economic growth and wildlife conservation. These have appeared in *Science*, *Bioscience*, and *Wildlife Society Bulletin*. I have authored related articles in *Ecological Economics*, *Environmental Management*, *Journal of Forestry*, *International Journal of Wilderness*, *Society and Natural Resources*, *Politics and the Life Sciences*, *Journal of Range Management*, *Renewable Resources Journal*, and *Journal of the West*. I have written *Shoveling Fuel for a Runaway Train: Errant Economists, Shameful Spenders, and a Plan to Stop Them All*. *Shoveling Fuel for a Runaway Train* combines an ecological critique of neoclassical economic growth theory with a blueprint for a non-violent "steady state revolution". I have recently co-authored (with Paul R. Krausman) *The Endangered Species Act: History, Conservation Biology, and Public Policy*, a book which likens the Endangered Species Act to a prescription for the steady state economy. I have led an effort in The Wildlife Society to sponsor a position on economic growth. My ultimate professional goal is to maximize my contribution to the sustainability of human society.

Brent M. Haddad I am an associate professor of environmental studies at University of California at Santa Cruz. Why I want to serve on the USSEE Board of Directors: Ecological economics is asking important social-science questions and using insightful methodologies. I will work to keep our academics rigorous, build connections with other research communities, and maintain the policy and social salience of

our inquiries. I'll also support programmatic and curricular development of ecological economics at U.S. universities. Research Interests: Water policy and Management (water allocation, marketing, conservation, reuse, supply and demand planning); property rights; climate change; invasive species management and deterrence. Interdisciplinary research experience: I have/am collaborating with natural scientists in climate change, invasive species deterrence, and urban water management. Recent Publications: "Ecology, Conservation, and Public Policy," (with D. Ludwig and M. Mangel) *Annu. Rev. Ecol. Syst.* 32 (2001); *Rivers of Gold: Designing Markets to Allocate Water in California*, Island Press, 2000; "Market Darwinism vs. Market Creationism: Adaptability and Fairness in the Design of Greenhouse Gas Trading Mechanisms. *International Environmental Agreements: Politics, Law and Economics*, 2001. Member, USSEE Steering Committee: Drafted USSEE Constitution; established initial USSEE website; served on nominating committee for initial officers and program committee for USSEE Duluth. Other Service: Steering Committee, Center for the Dynamics and Evolution of the Land-Sea Interface; Steering Committee to establish Interdisciplinary Sciences Institute at U.C. Santa Cruz; Member, Proposal Advisory Committee, WaterReuse Foundation. Education: BA, International Relations, Stanford Univ. 1982. MA, International Relations, Georgetown Univ. 1985. MBA, Business and Public Policy, UC Berkeley, 1991. Ph.D., Energy and Resources, U.C. Berkeley, 1996.

Valerie A. Luzadis Valerie Luzadis is Assistant Professor of Natural Resource Policy and Ecological Economics, Faculty of Forestry, State University of New York, College of Environmental Science and Forestry, in Syracuse, NY. Her work encompasses the study of human values, the human dimensions of forested ecosystems and the policies that influence the values desired from sustainable development. Luzadis studies the role of people in forested ecosystems from small, rural communities and decision makers, to the global social, economic, and philosophical foundations that influence human interaction with ecosystems. She is an integrator of ideas and people in an effort to understand interactions between people and natural resources. Her current research efforts involve improvement of environmental valuation techniques through conceptual and measurement expansion; identifying and describing links between social and economic systems and ecosystems to help communicate ecosystem health needs within a social and political context; and evaluating the validity of the Environmental Kuznets Curve using an expanded model of inputs. Her research is published in a variety of natural resource and economic journals. Luzadis was awarded the B.S. degree in Natural Resources and Forestry (1983) and the M.S. in Natural Resources (1990), both from Cornell University. Between the two degrees she worked as a Cooperative Extension Agent in Natural Resources. She began her PhD at Rensselaer Polytechnic Institute while working as Director of Communications and Education for the Empire State Forest Products Association, the forestry trade association in NYS. Mid-stream, Luzadis accepted a faculty position at SUNY ESF where she completed the Ph.D. in Policy and Economics in 1997. In addition to research and teaching, Luzadis consults regularly with groups such as The Nature Conservancy and The Wildlife Conservation Society to advise and facilitate community-based conservation and economic development efforts—where ecological economic ideas can be brought into practice. A member of the Society of American Foresters (SAF) for more than 15 years, Luzadis has held several leadership positions in the organization, including Chair of the National House of Society Delegates, and in 1997 she won the National SAF Young Forester Leadership Award. Having been an early instigator to move the development of the USSEE, and serving on the initial organizing committee, Dr. Luzadis would love to continue to help the organization to develop by serving on the Board of Directors. The ISEE/USSEE community is one in which she feels truly at home, intellectually and personally, and it is her desire to continue to build and nurture that community. Intellectually, she is interested in bringing broader social science perspectives and ethical considerations to ecological economics. In addition to her academic interests, her organizational development skills and experience will be useful as we establish this new organization.

Trista Patterson I am PhD candidate at the University of Maryland. Graduate students who pursue ecological economics undergo a unique set of challenges. When resolved, these ‘shared hurdles’ provide a sense of common experience, and increase student affinity for the discipline. Unsurmounted, they can inhibit students from pursuing EE; in coursework, in dissertations, and as part of their ongoing research agenda. Without adequate support, identifying with the society (and the field as a whole), becomes ever less likely. To various extents, my peers are realizing their ambition of ecological and economic study in ‘official’ EE programs, yet few are enthusiastic about becoming active society members. Now is the time to capitalize on our ‘shared experience’ and bring graduate students to identify with the society, decisions, and future therein. I am the founder of two forums that join over 200 students around the US, and the world, with their ecological economics peers. The two groups provide peer support for ecological economics programs, and attract incoming students from various expertise and nationalities. In my opinion, the US Society for Ecological Economics would benefit greatly by increasing emphasis on its graduate community. My research focus is sustainability of the world’s most vast industry, tourism. I model tourism’s economic, social, and ecological impacts, and use quantified anthropological techniques to make policy concerns of host populations and visitors more tractable. I concern myself with questions of inter and intra-generational equity, as well as projections regarding forms of capital (financial, natural, human, and social).

Newsletter Staff

We welcome two people and one group to the *Newsletter* staff. Bob Herendeen, Illinois Natural History Survey (herendee@staff.uiuc.edu) is coordinator of the Humor Section. Karen Sable, Department of Economics, University of Puget Sound (ksable@ups.edu) is coordinator of the Education Section. The Ecological Economics Group at SUNY College of Environmental Science and Forestry is coordinator of the Annotated References Section (contact Valerie Luzadis, vluzadis@esf.edu). Please help these folks out by sending appropriate items to them for future Newsletters. Input for the spring letter should be sent by late March and for the fall letter by late October.

Please contact me if you or your group want to be a coordinator for the Newsletter. We need folks to coordinate News and Views, Open Forum, Selected References, and Calendar of Events in the Coming Year. Don’t hold back from this opportunity to be influential and famous. (Carl McDaniel, Rensselaer, mcdanc@rpi.edu)

News and Views

Dave Bengston of the US Forestry Service is the editor for *Ecological Economics in Forestry*, a new newsletter of the Ecological Economics Working Group of the International Union of Forestry Research Organizations. Contact him at dbengston@fs.fed.us for information on or a copy of the newsletter. (Dave Bengston, US Forest Service)

Open Forum

Opportunities for Ecological Economics

Ecological economics grew out of a dissatisfaction with the narrowness of traditional approaches toward the environment in both economics and ecology. Models of ecological systems did not include human impacts; economic models assumed that economic activity takes place independently of the natural world

and of human social and institutional forms. But ecological economics is about more than the environment. Its goal is to accurately describe economic activity in its social and environmental context and to make sound policy recommendations in the context of uncertainty and evolutionary change. In contrast to the narrow definition of economics given in traditional textbooks, “the science of the allocation of scarce resources among alternative ends,” the methods and analytical tools of ecological economics attempt to capture the complexities of human economic behavior with the aim of constructing accurate models of existing economies that may be used for policy analysis. This cannot be done within the narrow confines of standard economic general equilibrium theory with its outdated concepts of human behavior and characterizations of material production that do not include the social and biophysical context of human activity. Human economic behavior encompasses consumption and production in their broadest sense including not only their economic consequences but also biophysical impacts as well as social and ethical consequences. Ecological economics should be seen not so much as an “alternative” to neoclassical theory but rather as a broader field of inquiry encompassing much of traditional neoclassical economics as well as heterodox schools of thought including behavioral economics, evolutionary economics, institutional economics, post Keynesian economics, and social economics.

I believe the time is ripe for ecological economics to play a leading role in the current reshaping of the economics profession. Interdisciplinary work is now standard in most scientific inquiry as traditional boundaries fall in response to growing scientific evidence as to the arbitrariness of traditional disciplines. This trend came late to economics but it is now gathering momentum. To understand the context of economic activity economists must become familiar with the relevant findings of other social and natural sciences. To achieve this, economic theory must move beyond its pre-Darwinian teleological notion of long-run competitive equilibrium. Ecological economics is poised to answer E.O. Wilson’s call for “consilience,” that is, the basic assumptions of one science should be consistent with the basic understandings of others. The next few years should offer excellent opportunities for ecological economics to assume an even greater role in the scientific community and in policy analysis. Interdisciplinary work is becoming standard, even mandatory, in all natural and social sciences. The field of economics is opening up to more accurate models of human behavior, and policy makers are recognizing the limitations of neo-liberal economic policies. Ecological economics is poised to become a comprehensive economics that will build upon the enduring contributions of neoclassical orthodoxy and heterodox schools of thought. It is the only kind of economics that sees the economy embedded in the biophysical world as well as in particular social systems.

With all this in mind, I see three important tasks for the next two years.

1. Broaden the membership of the society to include a greater representation from the natural sciences and from related social sciences such as anthropology, psychology and geography.
2. Initiate a dialog with other “heterodox” schools of economic thought including institutional economics, post Keynesian economics, radical economics, and social economics. This dialog could take the form of internet discussion groups, focused workshops on a particular theoretical and policy themes.
3. Initiate a dialog around the issue of modeling economy-society-environment interactions. Constructing realistic, policy-useful models is an area where ecological economics can play a vital role in the coming years. Such models are only in the beginning stage but are already providing a realistic alternative to the static optimization models of neoclassical general equilibrium theory.

These are only suggestions at this point and I welcome comments, criticisms and more ideas from all those interested in developing our new discipline. John Gowdy (Lgowdy@alo.com), president elect, USSEE.

Energy Impact of Attending the USSEE Meeting in Duluth, July, 2001

Twenty-two respondents listed their travel (mode, distance, number of occupants if by car), expense for lodging, food, registration, and incidentals. I converted these to total primary energy using average energy intensities from several sources. I accounted for indirect energy requirements all the way back on the chain of extraction, refining, transport, etc. For airplanes, I used fuel-use data I have been requesting on every flight I have made in the past 24 years, increased by approx. 40 % to account for the indirect energy (to refine fuel, to build planes and airports, etc.). The conversion factors are approximate...but I cannot quantify the uncertainty.

I have converted all energy to oil equivalents on a calorie basis. For reference the per capita annual energy use (gallons oil equivalent) is 2700 in the United States, 1370 in Germany, 26 in Bangladesh, and 490 in the world.

Figure 1 vividly shows the relationship between energy impact and distance traveled. The scatter in the lower left corner is caused partially by incomplete reporting. Travel energy dominates, and for multi-thousand mile travel, the energy is large compared with the annual use of an American car. (A corrected distance is the sum of air, train, bus, bike, and walking, plus auto miles divided by the number of occupants.)

* Please e-mail Robert A. Herendeen herendee@staff.uiuc.edu, for copies of the figures.

Figure 1. Energy impact vs. distance traveled. The average American car uses 400 gal/yr.

Figure two shows the distribution of the energy impacts of 22 respondents. The mean corrected round trip distance is 1280 miles, and the mean energy impact is 69 gallons of oil equivalent.

Figure 2. Distribution of energy impacts among the 22 respondents.

(Robert A. Herendeen, Illinois Natural History Survey, herendee@staff.uiuc.edu)

Education

(Coordinated by Karen Sable, ksable@ups.edu)

At the inaugural conference of the United States Society for Ecological Economics this past summer, Jonathon Harris presented a paper, "Bringing Ecological Economics into Introductory Courses," in which he identifies the major limitation of traditional environmental economics as its almost exclusive adherence to the neoclassical microeconomic approach. While this is not news to the ecological economics community, the thought of mitigating this limitation by augmenting traditional presentations with ecological economic tools can be somewhat daunting. To assist, Harris and his colleagues at the Global Development and Environment Institute (G-DAE) at Tufts University have introduced readily available teaching resources that make the introduction of ecological economics to a variety of courses quite easy.

Among the G-DAE resources, there are two modules available electronically, both making it almost effortless to get ecological economics into principles courses, courses in environmental economics, and interdisciplinary courses (e.g., environmental studies). I know because I have used one of the modules, *Macroeconomics and the Environment*, in all three such courses. (I even used parts of it as a

foundation for a talk at a social science brown bag lunch series!) The modules make it all very simple. They include a short text for students, instructor notes, and masters for overheads. The logistics are straightforward and, as I am writing this at the mid-term rush, so very welcome. Students can download their own copy from G-DAE's web site or the module can be legally reproduced for distribution to students. More importantly, the modules present a clear, concise, and relevant presentation of the principles of ecological economics. I have found that students quickly grasp the ideas and are intrigued by the insights they offer. The discussions that follow have been outstanding. The modules are especially useful in contrast to conventional economic models. Almost without exception, and in no small way related to the G-DAE modules, my students understand that ecological economics and conventional economics differ in their worldviews and that understanding, inquiry, and critical analysis of the assumptions of both schools are essential prior to moving from theory to policy. A short description of the modules follows.

Macroeconomics and the Environment presents an expanded circular flow analysis presenting the biosphere as a limiting parent system. The second part deals with critiques and alternatives to GDP accounting, emphasizing environmental as well as social sustainability. Concepts discussed include carrying capacity and natural capital. The third part examines long-term growth of population and implications for economic output, policy perspectives including the precautionary principle, and contrasts the goals of growth and sustainable development.

Microeconomics and the Environment places the standard economic analysis of externalities and public goods in the context of economics, technology, and ecology. The module has social, historical, ethical, institutional and political dimensions. Case studies focus on global climate changes, sustainable fisheries management, and concepts of industrial ecology.

These modules and other materials are available for review and downloading at <http://www.gdae.org>.

As the new coordinator of the education section for the *USSEE Newsletter*, please feel free to send me suggestions for this section. Karin Sable (ksable@ups.edu)

Humor

(Coordinated by Robert Herendeen, herendee@staff.uiuc.edu)

Auto advertisements

How on earth do you lose 5.6 billion people? Some people have a habit of losing things. With the new Grand Cherokee Limited 4x4 the only "thing" you'll get in the habit of losing is the human race. Not to mention, all the headaches that go along with it.

- Jeep advertisement, *Scientific American*, October 1995.

Let your heart take the wheel...Live Without Limits™.

- Cadillac Eldorado advertisement, *Newsweek*, 26 May 1997.

In primitive times, it would've been a god. It has the qualities man has revered and respected for thousands of years. The power to tame the forces of nature.

- Toyota Land Cruiser advertisement, *National Geographic*, February 1997.

It's not a car. It's an aphrodisiac.

- Nissan Infiniti advertisement, *Scientific American*, December 1992.

No boundaries. Ford outfitters.

- Ford Explorer advertisement, *Skiing*, November 2001.

There's no greater satisfaction than slipping inside the 135 on a cold day to find a warm steering wheel. As if gripping the wheel of a 255-horsepower sedan wasn't enough already.

- Nissan Infiniti advertisement, *Worth*, November 2001.

Annotated References

(Coordinated by SUNY College of Environmental Science and Forestry, Ecological Economics Group; contact Valerie Luzadis [vluzadis@esf.edu]) .

Books

Gold from the Past. Too often we place our focus on the present and what is most recently published often wrongly thinking we have digested the best of the past and made it part of the present. Rereading *Energy Basis for Man and Nature* (Odum, Howard T. and Elisabeth C. Odum [1981] McGraw Hill: New York), we see what many still overlook: Human systems are subject to the physical laws of thermodynamics, and human and nature system problems can be explained with systems ecology and its foundation in energetics.

It 's the ecology, stupid! Lester R. Brown who founded the Worldwatch Institute about two decades ago has now founded another organization, Earth Policy Institute. In his first book at Earth Policy Institute, *Eco-Economy* (2001, W.W. Norton: New York), he states very frankly "There is no middle path." Either we treat the current situation as the United States did when Pearl Harbor was bombed on 7 December 1941 by recognizing the crisis and moving quickly to create an ecologically based economy, or our current unsustainable economy will decline taking us and much of the rest of nature with it. In the three sections of the book — A Stressed Relationship, The New Economy, Getting From Here to There — he provides all of the distressing facts we know but aligns them with fringe trends and accomplishments that sketch out a path toward an eco-economy. I think he is wrong about some things, like the Earth can support 8 billion people sustainably, but Brown does an admirable job of seeing many positive trends in a very unsettling data set. He is, however, absolutely correct in stating it is a crisis and we have no time to waste. Get a copy. Read it. I think you will find it useful. (Carl McDaniel, Rensselaer, mcdanc@rpi.edu)

Articles

Cleveland, Cutler J. and David I. Stern (2001) **Natural resource scarcity indicators: an ecological economic synthesis.** In Cleveland, Cutler J., David I. Stern, and Robert Costanza (Ed.), *The Economics of Nature and the Nature of Economics.* Edward Elgar Publishing, Massachusetts. pp 238-261. Cleveland and Stern try to synthesize the indicators for resource scarcity. In general, scarcity indicates a level of economic wellbeing with respect to the quality, availability or productivity of natural resources. This problem arises particularly from our value system. According to them, much of the debate about various scarcity indicators ignores the fundamental point that different indicators measure different types of scarcity — use scarcity and exchange scarcity in this article. Neither classical economics nor

neoclassical economics provide adequate scarcity indicators in this context. For the concept of use scarcity, their synthesis is the generalized unit cost indicator, which incorporates technical change, depletion or augmentation of stock, and change in dimension of stock. For those who are interested in resource scarcity issues this is a good starting point with a good list of references.

Feiock, R. C. and C. Stream (2001) **Environmental Protection Versus Economic Development: A False-Tradeoff?** *Public Administration Review* **61**: 313-321. Feiock and Stream conducted a longitudinal study of the effects of state environmental policy on private investment to determine if a tradeoff exists between the social benefits of regulation and the economic benefits of development. They assert the tradeoff is determined by policy design. Policy design and program planning that reduce the perception of risk associated with uncertainty have the potential to offset the negative investment effects of regulatory costs.

Fischer-Kowalski, Marina and Christof Amann (2001) **Beyond IPAT and Kuznets Curves: Globalization as a Vital Factor in Analyzing the Environmental Impact of Socio-Economic Metabolism.** *Population and Environment* **23**: 7-47. In this analysis, Fischer-Kowalski and Amann argue that both IPAT and Kuznets models will tend to belittle the environmental impact of core industrial countries. From their point of view, IPAT and Kuznets models, which is based on product value as an analytical unit for their analysis, fail. As stages of economic activities shift from resource extraction to production processing, and to trade and services processing, lower material intensity per unit product value is achieved, while the impact accrued to the environment remains the same. As an alternative they suggest MFA (material flow analysis), which is based upon the law of conservation of mass, since true environmental impact can be understood, only by looking at the total material requirement for production. Their call for a model that has the capacity for comprehensive and simultaneous view of society's metabolism, seems a reasonable demand to the ecological economics community.

Haberl, Helmut and Fridolin Krausmann (2001) **Changes in Population, Affluence, and Environmental Pressures During Industrialization: The Case of Austria 1830-1995.** *Population and Environment* **23**: 49-70. Haberl and Krausmann find that the efficiency increases in the early phases of industrialization have been consumed by population growth, while in later stages a surge in affluence outgrows any gains in efficiency. Because of such rebound effect, they doubt the potential efficiency policies to decrease overall environmental pressure. The reason behind this is the use of indicators of environmental pressure based on per capita basis. Indicators for total environmental pressure, which is similar to 'ecological footprint', are suggested as an analytical tool.

Hall, Charles, Dietmar Lindenberger, Reiner Kummel, Timm Kroeger and Wolfgang Eichhorn (2001) **The Need to Reintegrate the Natural Sciences with Economics.** *BioScience* **51**: 663-673. The laws of nature and the theories of neoclassical economics are inconsistent. The authors argue for more integrated inclusion of natural flows into economic models after critiquing traditional neoclassical economic models, analyzing economic growth versus energy use, and demonstrating the direct influence of energy flows, specifically oil, on economic production.

Porter, Michael E. (1995) **Green and Competitive: Ending the Stalemate.** *Harvard Business Review*, September-October, p. 120. Porter emphasizes the competitive opportunity of reducing waste in production. His applied economic perspective focuses on the opportunity costs of pollution as wasteful and a lost chance to reduce production costs and increase consumer value.

Stern, David I. (2001) **The environmental Kuznets curves: a Review.** In Cleveland, Cutler J., David I. Stern, and Robert Costanza (Ed.) *The Economics of Nature and the Nature of Economics*. Edward

Elgar Publishing, Massachusetts, p. 193-217. David Stern's chapter on EKC is a valuable source of information for those who pursue a study on this subject. Stern did an extensive review of EKC researches, which have a short history of about 10 years but are extensively explored due to increasing interest in the relationship between economic growth and its impact on environment. In the review he surveyed various critiques, methods, theoretical and empirical determinants of EKC. As Stern points out, EKC studies have progressed, but neither the deeper issues of irreversibility have been adequately addressed, nor have the theoretical models been explicitly tested with empirical data.

Calendar of Events for the Coming Year

Conferences (compiled by Josh Frank, Rensselaer, frankj@rpi.edu)

www.sustainability2000.org Sustainability2000 is a global online convention set-up to share vital information on sustainable development. Sustainability2000 includes contributions from Tony Blair (UK Prime Minister), Michael Meacher (UK Environment Minister), Ritt Bjerregard (EC Environment Directorate), David Runnals (International Institute for Sustainable Development), Fred Singer (US Government Policy Adviser) and many others. The convention takes place in virtual locations around the world.

<http://www.epa.gov/epahome/announce.htm#Conferences> EPA conference announcements.

<http://www.aere.org/meet/> A number of meetings are co-sponsored by the Association for Environmental and Resource Economics (AERE). Listed are links to a number of other interesting meetings in 2002. The EPA also has a workshop series that is linked to the AERE web page.

<http://www.vanderbilt.edu/AEA/anmt.htm> American Economics Association annual meeting, January 4-6, 2002, Atlanta, GA.

<http://www.ecoeco.org/conf/conf.html> International Society for Ecological Economics, Seventh Biennial Conference, Environment and Development: Globalization and the challenges for Local & International Governance, Sousse, Tunisia March 6- 9, 2002 .

<http://www.vermontlaw.edu/etc/envirotax.cfm> Third Annual Global Conference on Environmental Taxation: Issues, Experience and Potential. The conference is a forum for the exchange of ideas, information and research findings about environmental taxation across international boundaries and across professional disciplines. Woodstock, Vermont USA, April 12-13, 2002.

<http://www.ecosystemhealth.com/hehp> Health Ecosystems Healthy People: Linkages between biodiversity, ecosystem health and human health. June 6 - 11, 2002, Marriott Wardman Park Hotel, Washington, DC, USA.

<http://members.home.net/earthcommunity/> Global Dialogue Organized by Earth Community Organization. August 1, 2002 to August 22, 2002, Toronto, Ontario, Canada. Last date for submission of Abstracts March 24, 2002. Call for Paper Details: Scope "Earth Government for Earth Community: A grassroots process." Topics: All issues related to the management of Earth with respect to the availability of resources, the environment, social and economic development aspects.

<http://www.un.org/rio%2b10/> World Summit on Sustainable Development (RIO+10): The UN Summit for the ten-year review of progress in implementing the outcome of the UN Conference on Environment and Development held in Rio in 1992, will take place in Johannesburg, South Africa, in 2002. The exact dates are yet to be determined. The Summit will aim to reinvigorate the global commitment to sustainable development at the highest level.