

CURRICULUM VITAE

Roelof M.J. Boumans

AFORDABLE FUTURES
(Accounting FOR DesirABLE FUTURES)
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I. Education

1984 (BA) Universiteit van Amsterdam, Biology.
1986 Doctoraal (MA) Universiteit van Amsterdam, Landscape Ecology.
1994 Louisiana State University, Oceanography and Coastal Sciences.

II. Professional Background

1986-1994 Research Associate, Coastal Ecology Institute Center for Wetland Resources
1994-1996 Post doctoral position at the Jackson Estuarine Laboratory at Durham, New Hampshire.
1996-2002 Research Scientist, Chesapeake Biological Laboratory, Center for Environmental and Estuarine Studies, Institute for Ecological Economics, University of Maryland
2002-2009 Associate Research Professor at the Rubenstein School for the Environment and Natural Resources (RSENr) at the University of Vermont.
2002-present Senior Scientist at Earth Economics
2002-present Fellow at the Gund Institute for Ecological Economics
2009-present Director of “Accounting For Desirable Futures” (AFORDABLE FUTURES), a consultant group to combine systems thinking and ecological economics for the development of exploration tools for directing decision makers in landuse change management.
2010-present Special Government Employee (SGE) for the US EPA within the ORD Executive Council to the Ecology (ESRP) Program

III. Research

A Areas of Professional Expertise:

Architect of the MIMES modeling framework, Integrated Assessment Modeling, Systems Dynamics, Estuarine Ecology, Landscape Ecology, Socio Economic Modeling, Sustainable Agriculture and Ecosystem Service Evaluations.

B Academic Publications

Papers in Refereed Journals

- Costanza R., Fisher B., Ali S., Beer C., Bond L., Boumans R., Danigelis N. L., Dickinson J., Elliott C., Farley J., Gayer D.E., MacDonald Glenn L., Hudspeth T.R., Mahoney D.F., McCahill L., McIntosh B., Reed B., Rizvi A. T., Rizzo D. M., Simpatico T., Snapp R., 2008. An Integrative Approach to Quality of Life Measurement, Research, and Policy, *S.A.P.I.EN.S*, 1.1:<http://sapiens.revues.org/index169.html>.
- Mulder K., A. Troy, and R. Boumans. 2007. The role of built, human, social, and natural capital in determining land values, and the influence of demographics upon this relationship. *Spatial Economic Analysis*. 2(2):135-156.
- Costanza, R., B. Fisher, S. Ali, C. Beer, L. Bond, R. Boumans, N. L. Danigelis, J. Dickinson, C. Elliott, J. Farley, D. E. Gayer, L. MacDonald Glenn, T. Hudspeth, D. Mahoney, L. McCahill, B. McIntosh, B. Reed, S. A. T. Rizvi, D. M. Rizzo, T. Simpatico, and R. Snapp. 2007. Quality of Life: An Approach Integrating Opportunities, Human Needs, and Subjective Well-Being. *Ecological Economics* Elsevier, vol. 61(2-3), pages 267-276, March.
- Costanza, R., Leemans, R., Boumans, R., and Gaddis, E. 2007. Integrated Global Models. Pp. 417-446 in: R. Costanza, L. J. Graumlich, and W. Steffen (eds.). Sustainability or Collapse? An Integrated History and future Of People on Earth. Dahlem Workshop Report 96. MIT Press. Cambridge, MA
- Wilson, M.A., R. Costanza, R. Boumans, S. Liu. 2005. Integrated assessment and valuation of ecosystem goods and services provided by coastal systems. In: The Intertidal Ecosystem, Wilson J.G. (ed.), 1- 24. Dublin: Royal Irish Academy Press.
- Werners S., R. Boumans, L. Bouwer, E. van Ierland, P. Kabat, and R. Leemans. 2004. Simulating the vulnerability of the storylines of the IPCC scenarios to climate stress. In: Pahl-Wostl C., Schmidt S., Rizzoli A.E., and Jakeman A.J. (eds) Complexity and integrated resources management, transactions of the 2nd biennial meeting of the International Environmental Modelling and Software Society, (IEMSS): Manno, Switzerland, 2004. ISBN 88-900787-1-5

- Paquette C., K.L. Sundberg, R.M.J. Boumans, and G.L. Chmura. 2004. Changes in saltmarsh surface elevation due to variability in evapotranspiration and tidal flooding. *Estuaries* 27(2).
- Voinov A., C. Fitz, R. Boumans, and R. Costanza. 2004. Modular ecosystem modeling , *Environmental Modelling & Software*. Volume 19, Issue 3 , March 2004, Pages 285-304.
- Behm P.M., R.M.J. Boumans, and F.T. Short. 2003. Spatial modeling of eelgrass distribution in Great Bay, New Hampshire. In: R. Costanza and A. Voinov (eds.) *Spatially Explicit Landscape Simulation Modeling*. Springer-Verlag.
- Binder D.C., R.M. Boumans, and R. Costanza. 2003. Applying the Patuxent landscape unit model to human dominated ecosystems: the case of agriculture. *Ecological Modeling* 159:2-3(161-177)
- Costanza R., R. Boumans, and D. Sahagian. 2003. A new approach to global, dynamic modeling of integrating humans in natural systems, June 2003, IGBP NewsLetter No 54
- Boumans R.M.J., R. Costanza, J. Farley, M. A. Wilson, J. Rotmans, F. Villa, R. Portela, and M. Grasso. 2002. Modeling the dynamics of the integrated earth system and the value of global ecosystem services using the GUMBO model. Special Issue: *The Dynamics and Value of Ecosystem Services: Integrating Economic and Ecological Perspectives*. *Ecological Economics*. 41: 3(529 – 560)
- Boumans R.M.J., D.M. Burdick, M. Dionne. 2002. Modeling habitat change in salt marshes after tidal restoration. *Restoration Ecology* 10:3(543-555)
- Behm P.M. and R.M.J. Boumans. 2002. Modeling eelgrass (*Zostera marina* L.) distributions in Great Bay, New Hampshire. In Matthias Ruth and James Lindholm (eds). *Dynamic Modeling for Marine Conservation*. Springer-Verlag New York.
- Cahoon D.R., J.C. Lynch, P. Hensel, R. Boumans, B.C. Perez, B. Segura, and J.W. Day. 2002. High-precision measurements of wetland sediment elevation: I. Recent improvements to the sedimentation-erosion table. *Journal of Sedimentary Research* 72:5(730-733)
- Costanza R., A.Voinov, R. Boumans, T. Maxwell, F. Villa, L. Wainger, H. Voinov. 2002. Integrated ecological economic modeling of the Patuxent River watershed, *Maryland Ecological Monographs* 72:2(203-231)
- Groot R. S. de, M. A. Wilson, and R. M.J. Boumans. 2002. A typology for the classification, description and valuation of ecosystem functions, goods and services. Special Issue: *The Dynamics and Value of Ecosystem Services*:

Integrating Economic and Ecological Perspectives. *Ecological Economics* 41: 3(393 – 408)

- Villa F., M.A. Wilson, R. de Groot, S.Farber, R. Costanza, and R. M.J. Boumans. 2002. Designing an integrated knowledge base to support ecosystem services valuation. Special Issue: The Dynamics and Value of Ecosystem Services: Integrating Economic and Ecological Perspectives. *Ecological Economics*, Vol. 41 (3) (2002) pp. 445 - 456
- Boumans R.M., F. Villa, R. Costanza, A. Voinov, H. Voinov, and T. Maxwell. 2001. Non-spatial calibrations of a general unit model for ecosystem simulations. *Ecological Modeling*, Vol. 146 (1-3) (2001) pp. 17 – 32
- Costanza R., A. Voinov, R.M.J. Boumans, T. Maxwell, F. Villa, L. Wainger, and H. Voinov. 2001. Case study: Patuxent River watershed, Maryland. Pages 179-232 in R. Costanza, B. Low, E. Ostrom, and J. Wilson editors. *Institutions, Ecosystems, and Sustainability*. Lewis/CRC Press, Boca Raton.
- Cetin L., F. Recknagel, and R. Boumans, 2001. Validation of the model WETMOD for Lower Murray wetlands: Core for restoration scenarios at the landscape scale. Conference on the Environment 2001 on Biodiversity Conservatiuon in Freshwaters. Canberra, Australia.
- Behm P. and R.M.J. Boumans. 2001. Modeling Herbivorous Consumer Consumption in the Great Bay Estuary, New Hampshire. *Ecosystem Modelling*.
- Voinov A., R. Costanza, L.A. Wainger, R.M.J. Boumans, F. Villa, T. Maxwell, and H. Voinov. 1999. Integrated ecological economic modeling of watersheds. *Journal of Environmental Modelling and Software*.
- Boumans R.M.J. , G.P. Kemp, J.W. Day, and K. Kilgen. 1997. The effect of intertidal sediment fences on wetland surface elevation, wave energy and vegetation establishment in two Louisiana coastal marshes. *Ecological Engineering* 9(37-50)
- Burdick D.M., M. Dionne, R.M. Boumans, and F.T. Short. 1997. Ecological responses to tidal restoration of two New England salt marshes, *Wetlands Ecology and Management*. Special issue: Hydrologic Restoration of Coastal Wetlands. 4:2(129-144)
- Fitz C., E. DeBellevue, R. Costanza, R.M.J. Boumans, T. Maxwell, L. Wainger, and F.H. Sklar. 1996. Development of a Generic transforming Ecological Model (GEM) for a range of scales and ecosystems. *Ecological Modeling* 88:263-295
- Cahoon D.R., D.J. Reed, J.W. Day, G.D. Steyer, R.M.J. Boumans, J.C. Lynch, D. MacNally, and N.Latif. 1995. The influence of hurricane Andrew on sediment

distribution in Louisiana coastal marshes. *Journal of Coastal Research*. 21:280-294

Boumans R.M.J and J.W. Day. 1994. Effects of two marsh management plans on water and materials flux and short term sedimentation in the Mississippi Delta. *Wetlands* 14:247-261

Boumans R.M.J. and J.W. Day. 1993. High precision measurements of sediment elevation in shallow coastal areas using a sedimentation-erosion table. *Estuaries* Vol 16. No.2, p. 375-380

Boumans R.M.J. and F.H. Sklar. 1990. A polygon-based spatial (PBS) model for simulating landscape change. *Landscape Ecology* 4:2/3 83-97

Gosselink J.G., G.P. Shaffer, L.C. Lee, D. Burdick, D. Childers, N. Taylor, S. Hamilton, R. Boumans, D. Cushman, S. Fields, M. Koch, and J. Visser. 1990. Landscape conservation in a forested wetland watershed, can we manage cumulative impacts. Experience from a forested wetland watershed, *BioScience* 40:8 588-600.

In progress:

Esposito, V., Ali, S. and Boumans, R. (2008). "A Rapid Assessment Valuation Framework for Ecosystem Services Valuation: The Camisea Pipeline Case Study." Submitted to *The Journal of Environmental Management*.

Boumans R.M.J., R. Costanza and others. The Multiscale Integrated Model of Ecosystem Services (MIMES), an ecological and economics approach to model landscapes in a finite world. Springer Verlag.

Non-Refereed, Reports and Conference Proceedings

Raheem N., J. Talberth, S. Colt, E. Fleishman, P. Swedeen, K.J. Boyle, M. Rudd, R.D. Lopez, T. O'Higgins, C. Willer, and R.M. Boumans. 2009. The Economic Value of Coastal Ecosystems in California NCEAS report

Boumans R. 2008 UTC Signature Project Number: 3. Integrated Transportation and Land Use Models: Complex Systems Approaches and Advanced Policy Applications. Spring 2008 Progress report.

Dahiya A. and R. Boumans. 2008. Algae growing design for oil production guided by evolutionary forces. In proceedings of Vermont EPSCoR (Experimental Program to Stimulate Competitive Research) Annual Meeting, The University of Vermont.

- Batker D., Swedeen P., Costanza R., de la Torre I., Boumans R., Bagstad K. 2008. Economic Value of Nature's Services in the Puget Sound Basin. An Earth Economics Report.
- Swedeen, P., Batker D., Radtke, H., Boumans, R. and Chuck Willer, 2008 An Ecological Economic Approach to Understanding Oregon's Coastal Economy and Environment, An Earth Economics Report.
- Charles Kerchner, Roelof Boumans, and William Boykin-Morris, November 23, 2008 The Value of Kol River Salmon Refuge's Ecosystem Services. Prepared for and funded by: Wild Salmon Center Portland Oregon. Research conducted by University of Vermont's Department of Community Development & Applied Economics and Gund Institute for Ecological Economics
- Boumans R. 2008 UTC Signature Project Number: 3. Integrated Transportation and Land Use Models: Complex Systems Approaches and Advanced Policy Applications. Fall 2008 Progress report
- Boumans R. and Costanza R. The Multi-Scale Integrated Model of the Earth Services (MIMES) The Dynamics, Modeling and Valuation of Ecosystem Services. ECEM '07 Trieste Italy, November 27-30 2007. 6th European conference on Ecological Modeling conference proceedings.
- James I, Hoffman MT, Cowling RM, Roberts R, Campbell BM and Boumans R 2006. The sustainability and valuation of three land use production sectors in Namaqualand, South Africa. *Unpublished report*, Leslie Hill Institute for Plant Science Cape Town South Africa
- Boumans, R. et al. 2006. A Simulation Model for the Centralized Agricultural Bio-Refinery Complex in Vermont that Derives Input Resources from Dairy Waste and Crop Residues to Produce Energy and Other Products. Report submitted to the Vermont Alternative Energy Corporation, .
- Chase, L.C., R.M.J. Boumans, and S. Morse. 2006. Participatory modeling of recreation and tourism. Pages 377-381 in: Burns, R. and K. Robinson (eds.) Proceedings of the 2006 Northeastern Recreation Research Symposium. April 9-11, 2006, Bolton Landing, New York. U.S. Forest Service, Northern Research Station, General Technical Report NRS-P-14.
- Batker D., E. Barclay, R. Boumans, and T. Hathaway. 2004. Ecosystem services enhanced by salmon habitat conservation in the Green/Duwamish and Central Puget Sound watershed. Rapport in support of the WRIA 9 habitat plan; Asia Pacific Environmental Exchange June 2004.
- Werners S., Boumans, R. and Bouwer, L.M. 2004. Simulating global feedbacks between sea-level rise, water for agriculture and the complex socio-economic

development of the IPCC scenarios. Osnabrück, Germany, Conference on Complexity and Integrated Resources Management.

- Boumans R., M. Ceroni, D. Burdick, D. Cahoon, and C. Swarth. 2003. Sediment elevation dynamics in tidal marshes: functional assessment of accretionary biofilters. Final report submitted to the NOAA/UNH Cooperative Institute for Coastal and Estuarine Environmental Technology (CICEET)
- Konisky R.A., D.M. Burdick, F.T. Short, and R.M. Boumans. 2003. Spatial modeling and visualization of habitat response to hydrologic restoration in New England salt marshes. Final report submitted to the NOAA/UNH Cooperative Institute for Coastal and Estuarine Environmental Technology (CICEET)
- Voinov A., R.M.J. Boumans, T. Maxwell, and R. Costanza. 2000. Modular ecosystem modeling: application to the Patuxent watershed. The International Conference of Geographic Information Systems and Environmental Modeling (GIS/EM4) September 2-8, 2000 Banff, Canada
- Voinov A., R. Costanza, L. Wainger, R. Boumans, F. Villa, T. Maxwell and H. Voinov, 1998. Integrated ecological economic modeling of watersheds. In: A. Sydow, Jin-Yi Yu (eds.) Proceedings of the 1998 Conference on Mission Earth: Modeling and Simulation of the Earth System, Diego, SCS, p.35-40.
- Burdick D.M., R.M. Boumans, M. Dionne, and F.T. Short. 1999. Impacts to salt marshes from tidal restrictions and ecological responses to tidal restoration. NOAA Grant report NA570R0343
- Villa F., R.M.J. Boumans, and R. Costanza. 1998. Calibration and testing of complex process-based simulation models, Institute for Ecological Economics (IEE), University of Maryland. Proceedings of the International Conference, Applied Modelling and Simulation, August 12-14, 1998, Honolulu, Hawaii, USA
- Kemp G.P., R.M.J. Boumans, S.A. Breuil, J.N. Suhayda, and J.W. Day. 1994. Wave action and erodibility of cohesive sediments in wetlands. Final report to USCOE.WES contract no DACW39-92-K-0035(neg)
- Boumans, R.M.J. 1994. Factors affecting sediment transport, deposition and erosion in intertidal wetlands in Louisiana, Dissertation, Louisiana State University
- Boumans R.M.J, J.W. Day, and G.P. Kemp. 1993. Predicting impacts of management measures on fragile coastal wetlands using a predictive landscape model, Proceedings of the Eighth Symposium on Coastal and Oceanic Management.
- Boumans R.M.J, J.W. Day, and G.P. Kemp. 1993. Measuring the effects of sediment fences for wetland creation and restoration in Louisiana. Proceedings of the Eighth Symposium on Coastal and Oceanic Management.

- Boumans R. and J.W. Day. 1990. Short-term sedimentation and water and materials flux. pp. 384-409. In: Cahoon and C.Groats (eds), A study of marsh management practice in coastal Louisiana, Volume III, Ecological Evaluation. Minerals Management Service, New Orleans, La. OCS Study/MMS 90-0075
- Boumans R.M.J. and J.W. Day. 1990. Sediment dynamics for marshes and mud flats: A modeling approach. In: H.H. Roberts (ed), Critical Physical Processes of Wetland Loss, Year 2 Final report to the US Geological survey.
- Boumans R.M.J. , J.W. Day Jr., and W.H. Conner. 1987. Marsh restoration using sedimentation fields in St. Charles and Lafourche Parishes, Louisiana. Pages 197-208 in N.V. Brodtmann, Jr., ed. Fourth Water Quality and Wetlands Management Conference, New Orleans, LA, 24-25 September.
- Taylor N.T., S.K. Yan, R.M.J. Boumans, and F.C. Wang. 1987. Spatial and temporal variations of water and salinity patterns in Jean Lafitte Historical Park, La, Louisiana State University.
- Taylor N.T., R.M.J. Boumans, and J.G. Gosselink. 1987. Hydrology as an index for cumulative impact studies. In proc of nat. symposium : Wetland Hydrology. Chicago Ill.
- Boumans, R.M.J. 1986. The response of understory vegetation to flooding in a Louisiana (USA) freshwater forested wetland, Hoofdvak verslag (Masters thesis) Botanical Ecology dept. University of Utrecht
- Pierce R.S., J.W. Day, Jr., E. Ramcharan, W.H. Conner, R.M.J. Boumans, and J. Visser. 1985. A comprehensive wetland management plan for the Labranche wetland, St. Charles Parish, Louisiana. Final Report to St. Charles Parish Department of Planning and Zoning, Hahnville, LA.
- Boumans, R.M.J. 1986. A model of habitat change in a wetland ecosystem in Louisiana. Hoofdvak scriptie. Botanical Ecology dept. University of Utrecht.

Contracts and Grants

Current Algae-research

- UVM Ventures and Technology Transfer Office Grant – Algae Biomass production project 2008-2009. \$20,000
- VT EPSCoR Innovation Fund to General Systems Research LLC to test High-output Conversion of Algae Biomass for Oil Production. 2008-2009. \$12000.
- US Department of Agricultural Sciences (USDA) grant to AlgePower Inc. VT through Poultney-Mettowee Natural Resources Conservation District. 2007-2009 Project to

Demonstrate Farm Nutrient Management Through Hydroponic Production Of Algae.
2008-2009. \$150,000

- VT EPSCoR Algae Biomass production modeling and simulation 2008 \$10,000

Current Watershed Modelling proposals

-Dr. Roelof Boumans (Rubenstein School of Environment and Natural Resources)

Funding Agency: Signature Project 1C - Modeling Transportation Alternatives, US DOT

-Boumans, R. and Kaufman, L. Modeling Marine Ecosystem Services. 2008. Proposal to Massachusetts Ocean Partnership to use transportation network model to investigate movement of whales in Boston Harbor, and whale-ship traffic interactions. Submitted 2008 to the state of Massachusetts

- Boumans, R., Costanza, B. et al. 2008. Watersheds, Transportation, and Ecosystem Services. Proposal with multiple parties (Europe, China, USA) of Sino-USA Collaboration Project to develop cross-context models of transportation-watershed interactions. Confirmed 2008, Chinese Academy of Sciences, Beijing, China.

-Boumans, R. and Erickson, J. 2008. Bioregulation of Zoonotic Disease at the Landscape-Scale: Modeling the Human-Livestock-Wildlife Interface in Semi-Arid Ecosystems of East Africa. Proposal to Dynamics of Coupled Natural and Human Systems, National Science Foundation, to investigate effects the damming of a river on animal-human disease transmission.

-Ademar Romeiro “Curso de modelagem econômico-ecológica”, Unicamp , Sao Paulo Brazil. Funded through FAPESP (Fundação de Amparo à Pesquisa do Estado de SãoPaulo).

-Boumans March 2009- Encouraging, Facilitating, and Gradually Converging upon a ‘Model Web’ for Ecological-Economic Systems. EpScore Proposal Notes for NASA Funding Opportunities

Non current proposals

-Co-PI Integrated Land-Use, Transportation and Environmental Modeling: Complex Systems Approaches and Advanced Policy Applications; Participatory Modeling of Rural Tourism Development NSRC

- Seacoast Watershed Information Manager (SWIM): A Toolkit for Evaluating, conserving & Restoring Watershed Resources Along the Maine and New Hampshire Seacoast. Submitted to the Wells National Estuarine Research Reserve (42K)

Academic expertise based on the principles of ecological economics to address the complex interrelationships between ecological and economic systems in a broad and comprehensive ways. Submitted to the Asian Pacific Environmental Exchange (8.8K)

Fall 2004, Fall 2005, Spring 2006 Service-Learning Implementation Grants

Modeling and Valuation of Watersheds. U.S Environmental Protection Agency. 1996-1999. \$997,000 (Co-Investigator, 68%)

Whole Watershed Restoration. U.S Environmental Protection Agency. 1999-2003. \$699,916 (Co-Investigator, 68%)

Human Settlements. National Science Foundation. \$600,00 1998-2004 (Co-Investigator, 16%)

Sediment elevation dynamics. CICEET/NOAA. \$188,342 (Principle Investigator, 8%)

Eelgrass Habitat Change. CICEET/NOAA. \$60,321 (Co-Investigator, 8%)

Invited Workshops, Seminars and Presentations

Boumans, R. July 23rd, 2009 An introduction to MIMES, the multiscale integrated models of ecosystem services. 1st Workshop Arctic Ecosystem and Biodiversity Measurement and Assessment Project Lone Star College System Administrative Office Campus, Training and Development Center The Woodlands, Texas

Boumans, R. The Multiscale Integrated Model of Ecosystem Services (MIMES), a modeling collaborative on estimating the dynamics and distributions of Ecosystem Function Values” The way ahead in Ecosystem Service & Biodiversity Research. a Workshop on Ecosystem Services and Biodiversity Conservation: Knowledge gaps and roadmap for future research Leipzig, Germany, 12-14 January 2009

Boumans R. 2009 Course on MIMES applications, Conference on Modeling Ecosystem Services. May 27-30 Acaya Lecce, Italy

Boumans R. May 18-19 2009 Recipes for adaptation: marine management under climate change and ocean acidification. International Marine Conservation Congress

Roelof Boumans. March 2009. What ecologists need to know about Ecosystem Services Valuations” Lecture for the the post-graduate program in Ecology, Institute of Biology (IB) of the Unicamp, Sao Paulo Brazil

- Boumans 2009 Feb-Mrt “curso de modelagem econômico-ecológica”, Unicamp , Sao Paulo Brazil. Funded through FAPESP (Fundação de Amparo à Pesquisa do Estado de São Paulo).
- Boumans, R. The Multiscale Integrated Model of Ecosystem Services (MIMES), a modeling collaborative on estimating the dynamics and distributions of Ecosystem Function Values” The way ahead in Ecosystem Service & Biodiversity Research. a Workshop on Ecosystem Services and Biodiversity Conservation: Knowledge gaps and roadmap for future research Leipzig, Germany, 12-14 January 2009
- Boumans, R. 2008. Implementation of Watershed Models. Workshop for EPA Region 5 Office, Chicago, IL. Series of Online modeling sessions December 2008
- Boumans, R. 2008 The Future of Collaborative Watershed Modeling. Online modeling sessions with researchers of the Future Midwestern Landscapes Study, of the EPA’s Ecosystem Services Research Program. November 2008
- Boumans. R. 2008. Watershed Modeling for Valuation of Ecosystem Service. Presentation at Ecological Complexity and Ecosystem Services, Sino-USA Collaboration Project, Beijing, China. October 2008.
- Boumans R. August 2008 (the MIMES model, Valuing of Ecosystem Services through Integrated Systems Modeling, Round Table. Chair: Ademar Romeiro, Debaters: Joachim Spangenberg and Martin de Wit. ISEE Nairobi Kenya.
- The Ecosystem Services Modeling Infrastructures: Simile/MIMES (Gund Institute) and FRAMES/3MRA (US EPA) Integrated Modeling for Forecasting, Workshop at the US EPA, July 29-31 2008 Office of Research and Development, National Exposure Research Laboratory, Ecosystems Research Division, Athens, GA 30605
- Boumans, R. June 16th , 2008, MIMES the Multi-scale Integrated Model of the Ecosystem Services Environmental Services, Tools, and Markets Working Group Fairfax, Virginia Businesses for Social Responsibility..
- Boumans, R. Modeling at the Interface of Human and Natural Systems. Workshop at The Commons in Spooner Hall, University of Kansas April 18th 2008 Gulf of Maine EBM workshops. Work Groups 1 & 2: Pilot Projects & Modeling Technical Modeling Subgroup 2008-01-18
- Boumans R. and Costanza R. The Multi-Scale Integrated Model of the Earth Services (MIMES) The Dynamics, Modeling and Valuation of Ecosystem Services. ECEM '07 Trieste Italy, November 27-30 2007. 6th European conference on Ecological Modeling.

- Ceroni, M., Boumans R., and Chase L. Assessing and modeling genuine well-being in rural communities of the Northern Forest. Third International Conference on Community Indicators . December 1-3, 2005. Burlington, Vermont
- Boumans R., 2004.The Global Unified Model of the Biosphere (GUMBO) - considerations on its fossil fuel compartments. Centro de Estudos de Petroleo – Cepetro International Seminar Series on Carbon Sequestration and Markets (2004-2005)
- Boumans R. 2004: Workshop on Watershed Modeling for beginning faculty. Chulalongkorn University, Bangkok.
- Invitation to the Conservation workshop on Refining Biodiversity Conservation through corridor planning, Santarem, Brazil on December 6-10, 2004.
- Invitation to the QUEST - Earth Sciences. University of Bristol Quest workshop , Totnes England March 2005
- Boumans R. 2004. Coastal ecosystems and socio-economic values, Invited speaker at the AAAS annual meeting Seattle Feb 11-16 2004
- Boumans R., M. Wilson, S. Liue and R. Costanza. 2003. The value of coastal systems. Invited speaker at ERF-2003, 17th Biennial Conference of the Estuarine Research Federation, September 14-18 2003
- Boumans R., M. Ceroni, D. Cahoon, D. Burdick and C. Swarth. 2003. What do sediment elevation changes tell us about the functioning of coastal wetlands? Invited speaker to the Technology Transfer Conference, U.S. EPA. Cocoa Beach, Florida. Jan 28-31
- Boumans, R.J. 2002. Human health dynamics as part of an integrated Earth system as simulated within the GUMBO Model. Presented at the conference for Linkages between biodiversity, ecosystem health and human Health, June 6-11 2002 Washington DC.
- Boumans, R M Invited Participant to the Namaqualand Resource Economics Workshop: 22nd April 2002 - 1st May 2002. KamiesKroon, South Africa
- Boumans, R.M.J., A Spatial Model of Zostera Marina in Great Bay New Hampshire. Seminar presented at the Chesapeake Biological Laboratory, Solomons MD. February 15th, 2001
- Boumans, R.M., F.Villa, R.Costanza, A.Voinov, H.Voinov and T.Maxwell, Invited speaker to the 2nd International conference on applications of machine learning to ecological modelling November 27 - December 1, 2000. Adelaide Australia

- Boumans, R.M., A Spatial Model of *Zostera Marina* in Great Bay New Hampshire. Seminar presented at Horn point Laboratory, Cambridge MD. October 18th, 2000
- Boumans, R.M.J. and M. Ceroni. Sediment elevation dynamics in tidal marshes; functional assessment of accretionary biofilters. Invited speaker to the AERS Fall Meeting November 9-11, 2000 Smithsonian Environmental Research Center, Edgewater, MD
- Boumans, R.M., M. Grove, S. Dalton, and R. Costanza. Spatial models on the human system of an urbanized watershed. Baltimore Ecosystem Study (BES) Annual Meeting Baltimore, 27 September 1999
- Boumans R.M. SET Database Network, A workshop on the Sedimentation Erosion Table, and its use for evaluating elevation of intertidal sediments. New Orleans October 1, 1999
- Boumans R.M. History of SET, Invited speaker, A workshop on the Sedimentation Erosion Table, and its use for evaluating elevation of intertidal sediments. New Orleans. October 1, 1999
- Ceroni, M. and R.M. Boumans. Designing a database for nation-wide monitoring of coastal changes in sediment elevation. Estuarine Research Federation, 15th Biennial International Conference, New Orleans, Louisiana, September 25-30, 1999
- Burdick, D.M., R.M. Boumans, M. Dionne, Modeling habitat change following tidal restoration in New England salt marshes. Invited talk. Estuarine Research Federation, 15th Biennial International Conference, New Orleans, Louisiana, September 25-30, 1999
- Boumans, R.M., A. Voinov, H. Voinov, T. Maxwell, F. Villa, R. Costanza. Spatial integrated ecological economic modeling of the Patuxent watershed, Maryland. Invited talk. Estuarine Research Federation, 15th Biennial International Conference, New Orleans, Louisiana, September 25-30, 1999
- Boumans, R.M.J. Spatial ecosystem modeling environments SME, RHESsys. Invited speaker: BSPM1998: Biological Scale Process Modeling 1998 Workshop on Modeling of Ecosystem Processes at Regional Scales. National Partnership For Advanced Computational Infrastructure, San Diego. Dec 15-17 1998.
- Boumans, R.M.J. Performance Evaluation of the Patuxent Landscape Unit Model invited speaker to the Smithsonian Environmental Research Center Edgewater, MD. seminar series, April 28, 1998

Villa F., R.M.J. Boumans, and R. Costanza. Calibration and testing of complex process-based simulation models. 12-pages draft accepted for the 1998 Applied Modelling and Simulation (AMS) conference, Honolulu, August 12-14, 1998.

Boumans R.M.J., F. Villa, and R. Costanza. A calibration strategy for the PAT-GEM model using the Model Performance Index and exploratory data analysis. ISEM 1998 conference, Baltimore, August 2-5, 1998.

Boumans R.M.J., D. Burdick and M Dionne. Modeling Habitat change in salt marshes following tidal restoration (invited speaker). Concepts and Controversies in Tidal Marsh Ecology. April 6-8 1998 Academy of Natural Sciences

IV. Active Memberships in Professional Societies

Subject editor of the *journal of wetlands ecology and management*.

International Society for Ecological Economics (ISEE)

Estuarine Research Federation (ERF)

International Association for Landscape Ecology, United States Regional Association (IALE-USRA)

Graduate Student committees served

Pamula Behm, Rosimeiry Portella, Kenneth Mulder, Valerie Esposito, Brian Voight, Zacharias Adams, Brendan Fisher, Charles Kerchner and David Timmons

Classes:

Fall 2003 NR 385 Vermont Field Studies (1 credit)
NR 378 Integrated Analyses of Natural Resource Issues (2 credits)
“Designing a plan for the Lewis Creek Watershed”
NR 385 Computer Simulations in Simuli (variable credits)

Spring 2004 NR 385 Designing Ontologies (1 credit)

Fall 2004 NR 385 Vermont Field Studies (1 credit)

Spring 2005 NR 378 Integrated Analyses of Natural Resource Issues (2 credits)
“Ecosystem services Economic development and indigenous rights; The Case of the Camisea Pipeline”
NR 285 Simulation of a Sustainable Aiken Building (3 credits)

Fall 2005 NR 385 Vermont Field Studies (1 credit)
NR 378 Integrated Analyses of Natural Resource Issues (2 credits)
“Tourism in the Northern Forest”

Spring 2006 NR285 Local Foods and Local Currencies (3 credits)
Graduate seminar on modeling Global Ecosystem Services.

Fall 2006 NR285 Ecological Cooperative Living
NR385 Vermont Field Studies

Spring 2007 NR 378 Restoring the Louisiana Coast

Fall 2007 NR 385 Simulation Modeling
NR385 Vermont Field Studies

Spring 2008 NR 378 Sustainable Food Production
NR 185 Ecological Cooperative Living

Summer 2008 NR 275 Homesteading
Fall 2008 NR 285 OL Introduction to Simulation Modeling
Spring 2009 NR 285 OL Introduction to Simulation Modeling
NR 285 Restoring Ecosystem Services Across Landscape
Summer 2009 NR 285 Homesteading

Classes in preparation with UVM continuing education are:

On line course on simulating ecological and economic systems
Transportation planning towards alternative goals (with Charles Norris,
anthropologist)

Proposal reviews:

CICEET, NOAA Coastal Ocean Program, NSF Human Dimensions Program, USGS
HSD Exploratory Research and Community Development (ERCD) NSF.

Manuscript reviews:

Wetlands Ecology and Management
Ecological Economics,
Ecological Engineering,
Estuarine, Coastal and Shelf Science,
Environmental Management.

Advisory boards:

Earth Economics; Tacoma, Washington.
Burlington Bread; The Burlington Currency Project.