

DR. WILLIAM J. GUTOWSKI, JR.

EDUCATION:

- Ph.D. (Meteorology) Massachusetts Institute of Technology, MA, 1984
- B.S. (Astronomy and Physics) Yale University, CT, 1976 (Magna Cum Laude)

EXPERIENCE:

- 2017 - present Honorary Professor
Dept. of Environmental and Geographical Sciences
University of Cape Town
Cape Town, South Africa
- 2016 - 2018 Associate Dean for Research and Graduate Education
College of Liberal Arts and Sciences
Iowa State University
Ames, Iowa
- 2001 (July - Dec) Visiting Scientist, Dept. of Environmental and Geographical Sciences
Dept. of Environmental and Geographical Sciences
University of Cape Town
Cape Town, South Africa
- 2000 - present Professor
Department of Geological and Atmospheric Sciences
Iowa State University
Ames, Iowa
- 1996 - present Affiliate Faculty appointment
Department of Agronomy
Iowa State University
Ames, Iowa
- 1993 - 2000 Associate Professor
Department of Geological and Atmospheric Sciences
Iowa State University
Ames, Iowa
- 1991-1993 Assistant Professor
Department of Geological and Atmospheric Sciences
Iowa State University
Ames, Iowa

- 1989-1991 Senior Scientist and Manager, Climate Group
Atmospheric and Environmental Research, Inc.
Cambridge, Massachusetts
- 1983-1989 Staff Scientist
Atmospheric and Environmental Research, Inc.
Cambridge, Massachusetts
- 1976-1977 Programmer
Princeton University (Astrophysics Department)

Dr. Gutowski's research concentrates on the role of atmospheric dynamics in climate. Central focuses are the dynamics of the hydrologic cycle, regional climate and weather and climate extremes. Because processes on a wide range of spatial and temporal scales are important for both of these, his research program entails a variety of modeling and data analysis approaches. His work includes regional modeling of African, Arctic and East Asian climates and has significant collaboration with scientists in these regions.

HONORS/AWARDS:

- 2017 Fellow, American Meteorological Society
- 2016 International Service Award
College of Liberal Arts & Sciences
Iowa State University
- 2012 Outstanding Career Achievement in Research
College of Liberal Arts & Sciences
Iowa State University
- 1984 Carl-Gustav Rossby Award for most outstanding thesis
Center for Meteorology and Physical Oceanography, MIT
- 1977-1978 Graduate Fellowship
University Corporation for Atmospheric Research
- 1976 Phi Beta Kappa
Senior Prize in Astronomy
Yale University
- 1975 E. B. Tuttle Award for Academic Merit
Yale University
- 1972 National Merit Scholar

MEMBERSHIP:

American Association for the Advancement of Science
American Meteorological Society
American Geophysical Union
Sigma Xi
Boston Chapter, American Meteorological Society (Program Director, 1984-1985)

GRANTS/CONTRACTS:

Life Cycles of Baroclinic Eddies: Mean Flow Adjustment and Modification by Surface Fluxes. ATM-8613087, National Science Foundation (9/86-8/88).

Life Cycles of Moist Baroclinic Eddies: Mean Flow Adjustment and Modification by Surface Fluxes. ATM-8815290, National Science Foundation (12/88-12/90).

A Research Program on Natural and Anthropogenic Climate Change. DE-FG02-86ER60422, Department of Energy (3/89-2/92).

A Research Program on Clouds and Climate: Modeling and Satellite Observational Studies. National Aeronautics and Space Administration (7/90-6/93) [AER subcontract from SUNY/Albany].

Synoptic Climatology of Space-Based Water Vapor Measurements. National Aeronautics and Space Administration (2/92-7/95).

Dynamic-Radiative Feedbacks in Extratropical Energy and Moisture Cycles. National Science Foundation (5/92-10/96).

Modeling Land-Surface/Atmospheric Dynamics for CHAMMP. CHAMMP Program, Department of Energy (8/92-11/95).

Role of Large-Scale, Extratropical Dynamics in Climate Change: A Stanstead Seminar. Funded jointly by the NOAA Climate and Global Change Program, National Science Foundation and Department of Energy (7/93-12/94).

Modeling the Pan-Arctic Terrestrial and Atmospheric Water Cycle and Potential Connections to Sea-Ice and Deep-Water Formation. Department of Energy (8/96-7/00).

Dynamic Adaptive Grids for Modeling the Large-Scale Distribution of Atmospheric Water Vapor. National Science Foundation (4/97-3/00)

Mesoscale-Model/Impact-Assessment Workshop under the Project to Intercompare Regional Climate Simulations (PIRCS). Electric Power Research Institute (11/96-5/98)

Regional Climate Simulations for Impact Assessment under the Project to Intercompare Regional Climate Simulations (PIRCS). Electric Power Research Institute (12/96-12/99)

Global Change, Climatology, and Land-Use in Iowa. Center for Global and Regional Environmental Research, University of Iowa (1/97-12/98).

Coupled Atmosphere-Snow Model Evaluation of Sub-Regional Snowmelt. National Aeronautics and Space Administration. (7/98-6/01)

Regional Hydrologic Simulation Model to Study Aquifer-Atmosphere Interactions on Interannual-Decadal Time Scales. National Aeronautics and Space Administration to Univ. Minnesota, with subcontract to Iowa State University. (7/98-6/01)

Investigation of Seasonal Predictability of Precipitation for the Central United States. National Oceanic and Atmospheric Administration. (9/98-8/02)

Gutowski, W. J., Jr., E. S. Takle, and R. W. Arritt, 1998-99: Limited area climate modeling for comparison with downscaling. Electric Power Research Institute. \$75,000.

Gutowski, W. J. Jr., R. W. Arritt, and E. S. Takle, 1999: Regional climate model simulations of future climates in California. Electric Power Research Institute. \$62,000.

Gutowski, W. J. , 2000-2002: Collaborative Research: The Role of Aquifers in Paleoclimatic Reconstructions of Glaciated Watersheds. National Science Foundation to University of Minnesota, with NSF subgrant to Iowa State University \$90,000

Adedoyin, B. Hewitson and W. Gutowski, 2000-2001: Southern Africa Regional Modeling Workshop. Grants from International Center for Theoretical Physics (UNESCO), World Meteorological Organization, START Headquarters, and IITAP to University of Cape Town. (ICTP/UNESCO \$25,000; WMO \$7,200; START \$5,000; IITAP \$5,000) \$42,200.

Gutowski, W. J., Jr., R. W. Arritt and E. S. Takle, 2000: Collaborative research: One- and Two-Way Coupling of Atmospheric and Hydrologic Models. National Oceanic and Atmospheric Administration. \$180,000 (funded amount TBD) [This is the ISU component of a multi-institutional proposal submitted jointly by ISU and the Cooperative Institute for Research in Environmental Sciences of the University of Colorado and the Water Resources Division of the U. S. Geological Survey.]

Arritt, R. W., W. J. Gutowski, and E. S. Takle, 2001: Multi-model ensemble simulations of the North American Monsoon System. National Oceanic and Atmospheric Administration, \$180,000.

Prusa, J., and W. J. Gutowski, 2001: Continuous dynamic grid adaptation in a global atmospheric model. Department of Energy, \$ 416,386.

Hewitson, B., PI, with E. Afiesiema, S. Jain, J. Intsiful, A. Sarr, R. Walawege, B. Garrangange, H. Rautenbach, C. Jack, W. Gutowski, R. Crane, R. Jones, D. Hudson, 2001: Regional climate change scenarios for southern and eastern Africa: Downscaling for impact applications. AIACC, US\$170,000 (to University of Cape Town, South Africa).

Arritt, R.W., Z. Pan, W. J. Gutowski, Jr, E. S. Takle and X. Wu, 2002: Ensemble Simulations of Regional Climates. NCAR Climate Systems Lab. Computer time request

L. Hinzman, D. Kane, M. Nolan, K. Yoshikawa, J. Cassano, A. Lynch, W. Gutowski, 2002: Detection and Attribution of Changes in Hydrologic Regimes of Mackenzie, the Kuparuk and the Lena River Basins. National Science Foundation, \$50,233 (5 yr) [primary grant to Univ. Alaska/Fairbanks, with subgrant to Iowa State University].

Gadia, S. K., W. J. Gutowski, Jr., M. Al-Kaisi, S. E. Taylor, and D. Herzmann, 2004: Database Tools Promoting Extensive, User-Friendly Access to the Iowa Environmental Mesonet. Baker Endowment, Iowa State Agronomy Department, \$60,250.

Chen, T.-C., W. A. Gallus, Jr., W. J. Gutowski, R. W. Arritt, C. A. Lin, 2004: Probabilistic Forecasting for Water Status of the Agroecosystem. Baker Endowment, Iowa State Agronomy Department, \$144,000. (partially funded)

Gutowski, W.J., and J. Prusa, 2004: Continuous Dynamic Grid Adaptation in a Global Atmospheric Model. U.S. Department of Energy, \$577,366.

Takle, E.S., R.W. Arritt and W. J. Gutowski, 2004: Regional Climate Modeling Coordination for the United States. National Science Foundation, \$137,127 (1 yr.)

Gutowski, W. J., R. W. Arritt, E. S. Takle, 2005: Collaborative Research: The North American Regional Climate Change Assessment Program (NARCCAP): Using Multiple GCMs and RCMs to Simulate Future Climates and their Uncertainty. National Science Foundation. \$352,999 (3 yr.) [A multi-institutional, multi-agency grant; L. Mearns (NCAR), lead PI]

Gutowski, W.J., 2005: Developing an Inter-institutional Undergraduate Course in Climate Physics: University of Cape Town and Iowa State University Collaboration. Iowa State Council on International Programs, \$1600.

Gutowski, W.J., 2006: Meteorology 452x/552x: An Inter-institutional Course in Climate Physics: University of Cape Town and Iowa State University Collaboration. Iowa State Council on International Programs, \$2100.

Gutowski, W.J., 2006: A Virtual Classroom in Climate Physics: Meteorology 452x/552x - University of Cape Town and Iowa State University Collaboration, Liberal Arts & Sciences Computer Advisory Committee, Iowa State University, \$2100.

Gutowski, W.J., and W. Gallus, 2006-2009: Editorial Assistant Support for Gallus and Gutowski editorships. American Meteorological Society, \$129,000 (est.) [33% Gutowski (Indirect Cost Rate: 0%)]

Maslowski, W., J. Cassano, W. Gutowski, D. Lettenmaier, 2007: Collaborative Research: Towards Advanced Understanding and Predictive Capability of Climate Change in the Arctic using a High-Resolution Regional Arctic Climate System Model, Department of Energy. [Collaborative proposal, 100% Gutowski on ISU portion of \$443,558 (Indirect Cost Rate: 46%).] \$443,558 (4 years).

Gutowski, W.J., J.M. Prusa and P.K. Smolarkiewicz, 2008: Collaborative Research: Continuous Dynamic Grid Adaptation in a Global Atmospheric Model: Application and Refinement, Department of Energy. [Collaborative proposal, 100% Gutowski on ISU portion of \$310,197 (Indirect Cost Rate: 46%).] \$310,197.

Roads, J.O., H. Juan, C. Anderson, R.W. Arritt, E. S. Takle, W. J. Gutowski, R. Leung, 2007: Multi-RCM Ensemble Downscaling of NCEP CFS Seasonal Forecasts (MRED): A Multi-Institution Collaborative Proposal, National Oceanic and Atmospheric Administration. [ISU portion: \$291,000 (Indirect Cost Rate: 46%), 33% Gutowski.]

Gutowski, W.J., J.J. Cassano, D. Lettenmaier and W. Maslowski, 2010: Collaborative Research: Arctic extreme temperature and precipitation - Detection and projection of their climatic change and physical causes. National Science Foundation, \$801,991. [100% Gutowski on ISU portion of \$370,698, Indirect Cost Rate: 48%]

Maslowski, W., and Collaborators, 2011: Type 2 - L02170246 Collaborative Proposal: Improving Decadal Prediction of Arctic Climate Variability and Change Using a Regional Arctic System Model (RASM). NSF/DOE/USDA EaSM Program, funded by DOE, \$4,000,000. [100% Gutowski on ISU portion of \$527,102 (Indirect Cost Rate: 48%)].

Gutowski, W.J., 2011: LAS Online Course Development Grant, for online development of MTEOR/AGRON/ENVSCI/ENVST 404 – Global Change, \$8,000.

Gutowski, W. J., 2011: Physical Behavior of Precipitation Extremes in CMIP5 GCMs and Observations. National Science Foundation, \$29,472 (Indirect Cost Rate: 48%) [100% Gutowski].

Bennett, D. A., N. Basu, W. J. Gutowski, M. Muste, J. L. Schnoor and S. Secchi, 2011: CNH: People, Water, and Climate: Adaptation and Resilience in Agricultural Watersheds. [ISU subcontract from University of Iowa, 100% Gutowski on ISU portion of \$168,094 (Indirect Cost Rate: 48%)].

Adukpo, D.C., N. A. Browne Klutse and W. J. Gutowski, 2012: Possible causes of the contraction of West Africa's rainfall season under global warming: Implications for Agriculture. National Science Foundation Partnerships for Enhanced Engagement in Research (PEER), \$63,300 (to University of Cape Coast, Ghana).

Buja, L., B. G. Brown, W. J. Gutowski and D. N. Yates, 2012: Collaborative Research: EaSM2: Advanced Climate and Regional Model Validation for Societal Applications. National Science Foundation, \$2,775,294 [100% Gutowski on ISU portion of \$492,764, Indirect Cost Rate: 48%].

Gutowski, W. J., 2013: CORDEX Empirical/Statistical Downscaling Workshops: Establishing a Foundation for Climate-Stakeholder Interaction in Africa. National Science Foundation, \$99,820 [100% Gutowski, but with two foreign collaborators (Hewitson, Univ. Cape Town; Benestad, Norwegian Met. Inst.), Indirect Cost Rate: 26% (off-campus rate) on Gutowski's travel only]

Gutowski, W.J., K. Franz, J. Goodwin, C. R. Rehmann, W. W. Simpkins, L. Tesfatsion, A. Wanamaker, 2013: Water and Climate Change (WACC): Building Community Consensus for a Sustainable Future for Iowa and the World. College of Liberal Arts and Sciences Strategic Research Initiative, \$299,553 (+ Cost sharing).

Krishnan, R., and M. Rixen, (Co-Investigators: W.-T. Kwon, W. Gutowski, J. Evans), 2013: International Conference on Regional Climate CORDEX2013. Asia-Pacific Network. \$50,000. [Funds for Asia-Pacific young scientists to attend the CORDEX2013 meeting in Brussels, Belgium.]

Gutowski, W.J., W. Crumpton, M. Dahlstrom, K. Hofmockel, 2014: Sustainability Science: Translational Research for a Sustainable Future. Focus hire proposal to College of Liberal Arts and Sciences, Iowa State University.

Gutowski, W.J., 2014: Assessing Regional Downscaling. NASA, \$16,340. [100% Gutowski, Indirect Cost Rate: 50%].

Kang, H.-S., F. Tangang, W. Gutowski, B. Lee, E. Kjellström, 2015: Facilitating the attendance, interaction and training of young and developing nation scientists from Asia-Pacific at the International Conference on Regional Climate - CORDEX 2016 (ICRC-CORDEX 2016). Asia-Pacific Network, \$24,926 to SMHI, Norrköping, Sweden.

Gutowski, W. J., and Coauthors, 2016: A Hierarchical Evaluation Framework for Assessing Climate Simulations Relevant to the Energy-Water-Land Nexus. DOE, \$5,990,259 [33% Gutowski on ISU portion of \$4,190,259 (included subcontracts), Indirect Cost Rate: 50%].

Not funded

Takle, E. S., R. W. Arritt, W. J. Gutowski, Jr., and C. J. Miller, 2001: Center for Research and Policy on Sustainable Earth Systems. National Science Foundation. \$10,000,000.

Takle, E. S., R. W. Arritt, W. J. Gutowski, Jr., 2000: Estimates of the range of possible impacts and uncertainties of climate change on land-surface hydrologic processes using a multi-model approach. NASA, \$174,966 [This is the ISU component of a multi-institutional proposal submitted jointly by ISU and the Cooperative Institute for Research in Environmental Sciences

of the University of Colorado and the Water Resources Division of the U. S. Geological Survey. Project total budget: \$521,294.]

Takle, E. S. W. J. Gutowski, Jr., and R. W. Arritt, 2000: Climate change and variability: Assessing impacts by use of regional models. *USDA/NRICGP*. \$15,000 requested as partial funding for a national symposium. [not funded?]

Kothari, S., W. Gallus, W. J. Gutowski and S. Mitra, 2001: ITR/AP: Knowledge-based software reengineering environment for scientific computing with applications to the geosciences. National Science Foundation, \$441,377.

Hewitson, B., and H. Rautenbach, PIs, with W. Mkhonza, L. Ngorora, E. Afiesiema, S. Jain, J. Intsiful, R. Anyah, W. Gutowski, F. Semazzi, G. Jenkins, R. Crane, R. Jones, 2001: Regional climate change scenarios for southern and eastern Africa: Downscaling for impact applications. AIACC, US\$187,000.

Mann, A., Sidler, Huba, Takle, Gutowski, 2001: Implementing a Multipurpose, Student-Centered Electronic Portfolio System that Promotes and Assess Learning. National Science Foundation, \$422,112.

Gutowski, W. J., and J. Cassano, 2002: Regional Model Synthesis of the Pan-Arctic Land-Atmosphere Water Cycle and its Variability. National Science Foundation, \$750,016 (5 yr).

Gutowski, W.J., and C. E. Boroneant, 2002: A New Approach to Assessing Uncertainties in Projections of Regional Climate Change. National Science Foundation (postdoctoral fellowship), \$37,200.

Chen, T.-C., and W. J. Gutowski, Jr, 2002: Verification and Simulations of the NSIPP Arctic Atmospheric Circulation. National Aeronautics and Space Administration, \$235,333 (3 yr).

Gutowski, W. J., E. S. Takle, R. W. Arritt, D. Herzmann, 2002: Integrated Monitoring of Iowa's Weather and Climate for Economic Development and Public Safety: Growing the Iowa Environmental Mesonet. Proposed item for ISU Federal Agenda, \$841,700.

Gutowski, W. J., J. Cassano, T. Arbetter, 2003: Collaborative Research: A pan-Arctic Climate System Model – Synthesis of Coupled Feedback Processes in the Arctic Climate System. National Science Foundation, \$346,289 (ISU portion; \$588,758 total). [Similar proposal to NASA]

Arritt, R. W., Pan, Z., Takle, E. S., and W. J. Gutowski, 2003: Ensemble simulations of the North American monsoon system using regional climate models. National Oceanic and Atmospheric Administration, \$265,000.

Gutowski, W.J., 2003: A New Approach to Regional Climate Change Detection and Attribution. National Oceanic and Atmospheric Administration, \$268,736.

Takle, E.S., Arritt, R.W., Gutowski, W.J., Christensen, J.H., 2003: Regional Climate Model Intercomparison Protocol for California. California Energy Commission, \$100,000 (approx.)

Gutowski, W.J., and C. E. Boroneant, 2003: A New Approach to Assessing Uncertainties in Projections of Regional Climate Change. National Science Foundation (postdoctoral fellowship), \$37,200.

Harding, C., D. Reiners, W. Gallus, W. Gutowski, 2004: Hapto-visual Investigation of 4D+-dimensional Meteorological data. Iowa State University Carver Grant, \$23,052.

Gadia, S. K., W.J. Gutowski, and M. Al-Kaisi, 2004: Application of a Parametric Model for Spatio-Temporal-Belief Data to Meteorology. National Science Foundation, \$400,000 (approx.)

Gadia, S. K., W.J. Gutowski, and M. Al-Kaisi, 2004: SEI + II \ (GEO/ATM; IIS/IDM) Advancement of Parametric Model for Spatio-Temporal-Belief Data and its Application to Meteorology and Agriculture. National Science Foundation, \$553,674.

Person, M.P., R. Bramley, W.J. Gutowski, and D. Cohen, 2004: Putting Aquifers into Atmospheric Simulation Models. National Science Foundation, \$291,000 (ISU portion).

Gutowski, W. J., J. J. Cassano, T. E. Arbetter, 2004: Collaborative Research: Synthesis of Coupled Feedback Processes in the Arctic Climate System - A pan-Arctic Climate System Model Perspective. National Science Foundation, \$367,765.

Cook, D.H., R.W. Arritt, P. Caragea, W.J. Gutowski, H. Hofmann, 2004: MSPA-CSE: Statistical Graphics for Exploring Uncertainty in Complex Nonlinear Climate Models. National Science Foundation, \$766,499.

Gutowski, W. J., 2004: A New Approach to Regional Climate Change Detection and Attribution. National Oceanic and Atmospheric Administration, \$289,026.

Gadia, S., W. Gutowski, E. Taylor, 2005: Application of a Parametric Model for Spatio-Temporal-Belief Data to Meteorology, National Science Foundation, \$635,465

Takle, E. S., W. J. Gutowski and R.W. Arritt, 2004: Dynamical-Feedback Triggering of Long-Term Memory in the Central US Water Cycle, NASA, \$525,000.

Person, M., W. J. Gutowski, D. Cohen, 2004: Aquifer-Atmosphere Coupling in Seasonal to Decadal Climate Simulation, NASA, \$400,000.

Cassano, J. J., W. Maslowski, W. J. Gutowski, 2005: Collaborative Research: Towards Decadal-Scale Prediction of Arctic Climate using a High-Resolution Regional Arctic Climate-System Model, NSF, ISU portion: \$199,980.

Gutowski, W.J., E.S. Takle, and R.W. Arritt, 2006: Evaluation of Processes and Probability of Intense Precipitation Events in Seasonal Forecasting through Regional Model Intercomparisons, NOAA, \$421,211.

Arritt, R.W., W.J. Gutowski, and E.S. Takle, 2006: Predictability of North American and South American Monsoons in the Context of Global Monsoons, NOAA, \$422,000.

Gadia, S., and W.J. Gutowski, 2006: III-COR: A Framework for Spatiotemporal Data Warehousing using the Parametric Database Approach, National Science Foundation.[20% Gutowski (Indirect Cost Rate: 46%).] \$400,000.

Kothari, S., and W.J. Gutowski, 2006: A Query-Model-Refine (QMR) Program Understanding Framework with Applications to Computational Science, National Science Foundation.[20% Gutowski (Indirect Cost Rate: 46%).] \$400,000.

Kothari, S., Aluru, S., and W.J. Gutowski, 2006: Algorithm-Aware Automatic Parallelization and Program Comprehension Tools for Scientific and Engineering Applications on High-End Computing Systems. National Science Foundation, \$497,276.00. [20% Gutowski (Indirect Cost Rate: 46%).]

Takle, E.G, and 26 Collaborating PIs: Midwest Consortium for Climate Assessment (MiCCA). NOAA, \$3,000,526].

Takle, E.S., R. W. Arritt, W. J. Gutowski, Jr., W. A. Gallus, Jr., M. L. Gleason, R. Elmore, and B. K. Hornbuckle., 2008: Improving Agricultural Decisions And Predictions (*ADAPT*) for the US Midwest by Use of Satellite Products and Global and Regional Climate Models. NASA, \$1,239,285 [12% Gutowski (Indirect Cost Rate: 48%).]

Gutowski, W.J., Takle, E.S., R. Arritt, C. Anderson, M. Bryden, R. LeSar, K. Franz, 2009: Modeling Multi-Scale Climate Processes. U.S. Dept. of Energy (via Ames Lab). \$6,525,000 [Ames Lab Indirect Cost Factors]

Gutowski, W.J., Crane, R. G. and Hewitson, B. C., 2009: Extreme daily precipitation in climate model ensembles: Detection and projection of their climatic change and physical causes. NOAA, \$380,622. [100% Gutowski (Indirect Cost Rate: 48%)]

Gutowski, W.J., 2006: International Collaboration to Achieve Circumpolar Synthesis and Integration. International Arctic Research Center, University of Alaska/Fairbanks, \$632,405 (5 yr) [This is a subgrant proposal, part of IARC's cooperative agreement proposal to the National Science Foundation. NSF has awarded IARC a continuation grant to explore and more clearly delineate some proposed activities, so the full proposal remains "pending".] [100% Gutowski for ISU portion of \$632,405 (Indirect Cost Rate: 46%)]

Kotamarthi, V.K., and Collaborators, 2010: Characterizing and Quantifying Climate Model forecast Uncertainties at the Regional Scale: Development of a Structured Approach and Applications to the Midwestern USA. U.S. Department of Energy. [50% Gutowski (50% C.

Anderson), on ISU subcontract proposal of \$906,101, 48%]

Schnoor, J., and Collaborators, 2010: Collaborative Research: Adaptation And Resilience of Natural and Built Waters Systems to Climate Variability and Land Use Change. National Science Foundation, \$5,089,694. [50% Gutowski (50% C. Anderson), on ISU portion of \$563,912, 48%]

Takle, E.S. and Collaborators, 2010: Building Resiliency to Climate Change in the US Midwest: Using Past Changes in Precipitation Extremes to Inform Future Adaptation. NSF, \$999,227. [Approx. 10% Gutowski]

Mearns, L., M. Bukovsky, D. Caya, J.H. Christensen, O.B. Christensen, W. J. Gutowski, R. Jones and S. Sain, 2010: Synthesizing NARCCAP and ENSEMBLES Regional Simulations: A Way Forward to Assessing Regional Uncertainty. NOAA. [100% Gutowski on ISU portion of \$149,594 (Indirect Cost Rate: 48%)]

Bennett, D.A., and Collaborators, 2010: Collaborative Research: Adaptation and Resilience of Natural and Built Waters Systems to Climate Variability and Land Use Change. National Science Foundation, \$197,967 (Indirect Cost Rate: 48%). [100% Gutowski on ISU portion of \$197,967, Indirect Cost Rate: 48%].

Prusa, J. M., W. J. Gutowski, P. Smolarkiewicz, A. Wyszogrodzki and B. J. Abiodun, 2011: COLLABORATIVE PROJECT: CAM-EULAG: A Multi-Scale, Nonhydrostatic Atmospheric Global Climate Model with Convective-System Dynamics. U.S. Department of Energy, \$1,321,000. [100% Gutowski on ISU portion of \$722,232, Indirect Cost Rate: 48%].

Schnoor, J. L., C. J. Anderson, N. Basu, D. Bennett, A. Bradley, W. J. Gutowski, M. Muste, H. A. Sander, A. M. Strong, E. C. Tate, 2011: WSC-Category 2 - Collaborative Research: Water Fluxes Across the Urban-Agricultural Continuum: Vulnerability and Resilience to Climate Variability and Land use Change. National Science Foundation, \$4,995,124. [50% Gutowski (50% C. Anderson) on ISU portion of \$848,509, Indirect Cost Rate: 48%].

Tim, U., A. Kaleita, S. Mickelson and W. J. Gutowski, 2012: Hydrologic and Geomorphic Response of the Lower Missouri River Basin to Climate and Land Use/Land Cover Change. National Science Foundation, \$675,172 [25% Gutowski, Indirect Cost Rate: 48%].

Smolarkiewicz, P., W. J. Gutowski and C. J. Anderson, 2012: BIGDATA: Mid-Scale: DA: Collaborative Research: Meshless Quantitative Analysis Package for Large Heterogeneous Datasets in Geosciences. National Science Foundation, \$1,120,795. [50% Gutowski (50% Anderson) on ISU portion of \$344,104, Indirect Cost Rate: 48%].

Takle, E. S., Anderson, C. J., Arbuckle, J. G., Gutowski, W. J., Helmers, M. J., Anderson, S. H., Johnson, T. G., Ammann, C. M., Demuth, J. and Lazrus, H., 2013: Midwest Integrated Sciences and Assessments (MISA): An Innovation Space for Decision-Making. National Oceanic and Atmospheric Administration, \$3,536,742 [10% Gutowski, Indirect cost rate: 50%].

Hewitson, B. C., P. Wolski, C. Lennard, D. Mazvimavi, W. J. Gutowski, R. C. Crane, J. Kelmelis, R. L. Wilby and R. Jones, 2012: Water security of the Okavango and Limpopo trans-boundary catchment systems. Belmont Forum and G8 Research Councils Initiative on Multilateral Research Funding, \$2,130,000 [100% Gutowski on ISU portion of \$428,241, Indirect Cost Rate: 48%].

Schnoor, J. L., D. A. Bennett, D. J. Schnoebelen, A. S. Ward, L. J. Weber, S. Secchi, W. J. Gutowski and L. S. Tesfatsion, 2013: WSC-Category 2: Collaborative Research: A High-Resolution Watershed Data Synthesis Network (WDSN) for Predicting Nutrient Loads and Sustainable Practices Under Climate Change. National Science Foundation, \$3,999,201 [50% Gutowski on ISU portion of \$779,761, Indirect Cost Rate: 50%].

Gutowski, W.J., J.J. Cassano and E.N. Cassano, 2013: Collaborative Research: Arctic temperature and precipitation extremes: Episodic behavior, predictability and projected changes. National Science Foundation, \$747,560. [100% Gutowski on ISU portion of \$346,711, Indirect Cost Rate: 50%].

Cassano, J.J., E.N. Cassano and W.J. Gutowski, 2013: Collaborative Research: Large-scale forcing for high wind events over the northern oceans and projected 21st century changes. National Science Foundation, \$746,619. [100% Gutowski on ISU portion of \$304,032, Indirect Cost Rate: 50%].

Kucera, P., Z. Liu, B. Brown, W. J. Gutowski and W. A. Gallus: 2014: Online Implementation of Model Evaluation Tools (MET) to Utilize Satellite Products for Numerical Weather and Climate Prediction Models. NASA [50% Gutowski on ISU portion of \$124,302, Indirect Cost Rate: 50%].

Hughes, M. R., E. N. Cassano, J. J. Cassano and W. J. Gutowski, 2014: Collaborative Research: Large-scale forcing for high wind events over the northern oceans and projected 21st century changes. NSF [100% Gutowski on ISU portion of \$317,407, Indirect Cost Rate: 50%].

Gutowski, W. J., K. J. Franz, J. Goodwin, C. R. Rehmann, L. S. Tesfatsion, W. Simpkins and A. Wanamaker, 2014: CNH-L: Water and Climate Change: Building Community Consensus for a Sustainable Future. National Science Foundation, \$1,799,772 [14.3% Gutowski, Indirect Cost Rate: 50%].

Gutowski, W. J., K. J. Franz, J. Goodwin, Chris Harding, L. S. Tesfatsion, P. L. Brown Huber, 2015: CyberSEES: Type 2: Collaborative Research: Water and Climate Change (WACC): Gaming Tools to Build Community Consensus for a Sustainable Future. NSF [20% Gutowski on ISU portion of \$1,094,943, Indirect Cost Rate: 50%].

Zhou, Y., Franz, K., and W. J. Gutowski, 2015: Sustainability in Water-Energy-Food Nexus under Urbanization and Climate Change. NSF [15% Gutowski on ISU portion of \$499,869, Indirect Cost Rate: 50%].

Gutowski, W. J., K. J. Franz, J. Goodwin, C. R. Rehmann, L. S. Tesfatsion, W. Simpkins, D. Wald and A. Wanamaker, 2015: CNH-L: Water and Climate Change: Building Community Consensus for a Sustainable Future. National Science Foundation, \$1,799,073 [12.5% Gutowski, Indirect Cost Rate: 50%].

Cassano, E. N., J. J. Cassano, J. Walsh and W. J. Gutowski, 2015: Collaborative Research: PREEVENTS: Large-scale forcing for high wind events over the northern oceans and projected 21st century changes. NSF [100% Gutowski on ISU portion of \$325,529, Indirect Cost Rate: 50%].

Rehmann, C. R., and W. J. Gutowski, 2016: Socio-Hydrologic Modeling of Change in a Typical Iowa Watershed. Center for Global and Environmental Research, Univ. Iowa [50% Gutowski, \$34,883, no Indirect Cost].

Franz, K. J., W. J. Gutowski, C. R. Rehmann, L. S. Tesfatsion and A. VanLoocke, 2016: INFEWS/T1: How does non-stationarity expose FEW system tipping points in the agricultural Midwest? NSF, \$696,877 [20% Gutowski, Indirect Cost Rate: 50%].

Gutowski, W. J., E. N. Cassano and J. J. Cassano, 2015: Collaborative Research: Arctic temperature and precipitation extremes: Episodic behavior, predictability and projected changes. NSF [100% Gutowski on ISU portion of \$364,329, Indirect Cost Rate: 50%].

Proposed

None at present

ADVISING:

Major or co-Major Professor

Elizabeth A. Uken, 1994, M. S., Statistics: Spectral Analysis of Atmospheric Heat Flux in the Southern Hemisphere.

Weidong Jiang, 1994, M. S., Meteorology: The Role of Convection in Eddy Life Cycles
Ybin Chen, 1996, M.S., Meteorology: Regional Water Cycle in the Central United States

Weidong Jiang 1998, Ph. D., Meteorology, Coupling of Baroclinic Waves, Cumulus Convection, and Surface Processes.

John Iselin, 1999, Ph. D., Mechanical Engineering: A Dynamic Adaptive Grid MPDATA Scheme Application to the Computational Solution of Atmospheric Tracer Transport Problems.

Scott Kampa, 1999, M.S., Meteorology, Precipitation Patterns in Iowa and Nebraska and Their Distribution in Comparison to Model Output from RegCM2.

Francis Otieno, 2001, M.S., Meteorology, Evaluation of the seasonal predictive potential of RegCM2 from a 10-year simulation.

David Flory, 2003, M.S., Physics, Summer precipitation dynamics in high resolution climate simulations, 75 pp.

Linda Mudoni, 2005, M.S., Meteorology, Impacts of explicitly simulated gravity waves on large-scale circulation, 73 pp.

- Francis Otieno 2005, Ph.D., Meteorology, Changes in the regional hydroclimate of the Midwest United States between 6-kBP and current climate, 90 pp.
- Brandon J. Fisel, 2011, M.S, Meteorology, Multi-regime States of Arctic Atmospheric Circulation, 42 pp.
- Sho Kawazoe, 2011, M.S., Meteorology, Regional, extreme daily precipitation in NARCCAP simulations, 43 pp.
- Abayomi Abatan, 2011, M.S., Meteorology, West African extreme daily precipitation in observations and stretched-grid simulations by CAM-EULAG, 128 pp.
- Justin M. Glisan, 2012, Ph.D., Meteorology, Arctic daily temperature and precipitation extremes: Observed and simulated physical behavior, 177 pp.
- Sho Kawazoe, 2016, Ph.D., Meteorology, Evaluation of regional, very heavy precipitation events in the upper Mississippi region using climate model ensembles, 113 pp.
- Abayomi Abatan, Ph.D., 2017, Ph.D., Meteorology, Tools and metrics to characterize extreme climate events and evaluate climatic datasets over the Upper Colorado River basin for societal applications, 152 pp.
- Brandon J. Fisel, Ph.D., 2018, Meteorology, A changing Arctic atmospheric circulation in response to global change, and its influence on future extreme weather and convective potential, 87 pp.

Postdoctoral

- Dr. Zekai Otles (Ph.D. - Univ. Wisconsin/Madison), June 1993 - September 1998.
[Current: Frontier Science And Technology Research Foundation, Inc.]
- Dr. Helin Wei (Ph.D. - State Univ. New York/Albany), February 1999 - January 2001.
[Current: U.S. National Centers for Environmental Prediction/Environmental Modeling Center]
- Dr. Abiodun J. Babatunde (Ph.D. - Federal University of Technology, Akure, Nigeria, with Uppsala University, Sweden), January 2005 – December 2008. [Current: Associate Prof. at University of Cape Town.]
- Dr. Justin M. Glisan (Ph.D. – Iowa State University), February 2012 – March 2016.
[Current: State Climatologist, Iowa]
- Dr. Brandon J. Fisel (Ph.D. – Iowa State University), August 2018 -

Mentor, Preparing Future Faculty Program

Peter Moore, Ph.D. candidate in glaciology, Iowa State University (2007-2008)

Mentor, Graduate College Emerging Leadership Academy

Therin Young, Ph.D. candidate in ME, Iowa State University

Committee member

Outside:

Richard W. Turner, 1988, M.S.: The influence of planetary wave instability on the mean circulation of the Venus upper atmosphere. Rosenstiel School, University of Miami.

- Jennifer York, 1999, Ph.D.: Atmosphere-aquifer hydrologic interactions in a northeastern Kansas catchment: Numerical modeling. Dept. of Geology and Geophysics, University of Minnesota.
- Warren J. Tennant, 2002, Ph.D.: Event Characteristics of Intra-Seasonal Climate Circulations. Dept. of Environmental and Geographical Sciences, University of Cape Town. (External reviewer)
- Kabumbwe Hansingo, 2003, M.S.: Sea Surface Temperature Anomalies in the South Indian Ocean: Observations and Atmospheric Modeling. Dept. of Environmental and Geographical Sciences, University of Cape Town. (External reviewer)
- Andrew T. Singleton, 2005, Ph. D.: Cut-Off Low Pressure Systems and Extreme Rainfall over South Africa. Dept. of Environmental and Geographical Sciences, University of Cape Town. (External reviewer)
- Asmerom Fissehatsion Berake, 2005, M.S.: Climate Change Scenario Simulations over Eritrea by Using a Fine Resolution Limited Area Climate Model: Temperature and Moisture Sensitivity. University of Pretoria (External reviewer)
- Marshall L. Mdoka, 2005, M.S.: Climatic Trends and Soil Moisture Feedbacks over Zimbabwe, Dept. of Environmental and Geographical Sciences, University of Cape Town. (External reviewer)
- Christopher J. Lennard, 2008, Ph.D.: Identification and Simulation of Extreme Precipitation using a Computationally Inexpensive Methodology, Dept. of Environmental and Geographical Sciences, University of Cape Town. (External reviewer)
- Genito A. Maúre, 2012, Ph.D.: Effects Of Biomass–Burning Aerosol Loading on Southern African Climate, Dept. of Environmental and Geographical Sciences, University of Cape Town. (External reviewer)
- David Ogier, 2013, M.S.: Characteristics of Inertial Gravity [Waves] over Southern Africa as simulated with CAM-EULAG, Dept. of Environmental and Geographical Sciences, University of Cape Town. (External reviewer)
- Molulaqhoora Maoyi, 2015, M.S.: Simulating the characteristics of tropical cyclones over the South West Indian Ocean using an Adaptive Stretched-Grid Global Climate Model, Dept. of Environmental and Geographical Sciences, University of Cape Town. (External reviewer)
- Mitchell T. Black, 2016, Ph.D.: An attribution study of southeast Australian wildfire risk. School of Earth Sciences, University of Melbourne, Australia. (External reviewer)

Iowa State University:

Hongkun Tian, 1992, M. S., Physics.
Richard W. Turner, 1993, Ph. D., Agronomy.
Susan J. Kiehne, 1993, M.S., Physics.
Xu Yu, 1993, Ph. D., Physics.
Jiehyi Chang, 1994, M. S., Physics
Jau-Ming Chen, 1996, Ph.D., Atmospheric Science
Zaito Pan, 1996, Ph. D., Atmospheric Science
Chris Wikle, 1996, Ph. D., Atmospheric Science
Christopher Anderson, 1996, M. S., Agricultural Meteorology
Elizabeth M. Stone, 1997, Ph. D., Physics
Doug Allen, 1997, Ph. D., Physics
Shu-Ping Weng, 1997, Ph. D., Atmospheric Science
Kandice Boyd, 1998, M.S., Water Resources and Atmospheric Science
Michael Lewis, 1998, Ph. D., Physics
Sevtap Karakoy, 1998, M.S., Computer Science
Weidong Jiang, 1998, M.S., Computer Engineering
Zhiwei Yang, 2000, Ph. D., Agricultural Meteorology
Isadora Jankov, 2002, M.S., Meteorology
Jung-Chieh Hsieh, 2003, M.S., Meteorology
Isadora Jankov. 2006, Ph.D., Meteorology
Xun (Linus) Li, 2007, Ph.D., Plant Pathology
Seo-Young Noh, 2007, Ph.D., Computer Science
Ana Dias, 2007, Ph.D., Plant Pathology
Wan-Ru (Judy) Huang, 2008, Ph.D., Meteorology
Le Van Thien, 2009, M.S., Meteorology
Shih-Yu (Simon) Wang, 2009, Ph.D., Meteorology
Sunwook Park, 2010, Ph.D., Meteorology
Liping Deng, 2010, Ph.D., Meteorology
Eric Aligo, 2011, Ph.D., Meteorology
Riley Smith, 2011, M.S., Physics
Jeong-Sun Hwang, 2011, Ph.D., Physics
Logan Karstens, 2011, M.S., Meteorology
Shelly Griffin, 2012, M.S., Geology
Erin Lower, 2012, M.S., Geology
Andrew Ansorge, 2012, M.S., Agricultural Meteorology
David Dziubanski, 2013, M.S., Geology
Eric Mykleby, 2013, M.S., Geology
Sugam Sharma, 2013, Ph.D., Computer Engineering
Zac Mangin, 2013, M.S., Meteorology
Shannon Patton, 2013, M.S., Meteorology
Daniel Rajewski. 2013, Ph.D., Agmeteorology
Rachel Hatteberg, 2014, M.S., Meteorology
Gregory Matson, 2014, M.S., Meteorology
Diego Thompson-Bello 2014, Ph.D., Sustainable Agriculture and Sociology

Paul Wiecki, 2014, M.S., Physics
Diana Thatcher, 2015, M.S., Geology
Elizabeth Callen, 2016, Ph.D., Meteorology
Talena Sines, 2016, Ph.D., Meteorology
John Lawson, 2016, Ph.D., Meteorology
Brian Squitieri (ongoing), Ph.D., Meteorology
Bradley Carlberg (ongoing), Ph.D., Meteorology
David Jahn (ongoing), Ph.D., Meteorology
Kaitlin Togliatti (ongoing), M.S., Agricultural Meteorology
Madelyn Mette (ongoing), Ph.D., Geology
Anna Nesterovich (ongoing), Ph.D., Geology
Diana Thatcher (ongoing), Ph.D., Geology
Xinyuan Zhao (ongoing), Ph.D., Computer Engineering

PUBLICATIONS:

Peer-Reviewed Reports

Collins, M., R. Knutti, J. M. Arblaster, J.-L. Dufresne, T. Fichet, P. Friedlingstein, X. Gao, W. J. Gutowski, T. Johns, G. Krinner, M. Shongwe, C. Tebaldi, A. J. Weaver, M. Wehner, 2013: Long-term Climate Change: Projections, Commitments and Irreversibility. In: *Climate Change 2013: The Physical Science Basis. Contribution of Working Group I to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change*. [Stocker, T. F., D. Qin, G.-K. Plattner, M. M.B. Tignor, S. K. Allen, J. Boschung, A. Nauels, Y. Xia, V. Bex, P. M. Midgley (eds).] Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA.

Hornberger, G. M., E. Bernhardt, W. E. Dietrich, D. Entekhabi, G. E. Fogg, E. Foufoula-Georgiou, W. J. Gutowski, W. B. Lyons, K. W. Potter, S. W. Tyler, H. J. Vaux, C. J. Vorosmarty, C. Welty, C. A. Woodhouse, C. Zheng, 2012: *Challenges and Opportunities in the Hydrologic Sciences*, Water Science and Technology Board, National Academy of Sciences, Washington, DC, 173 pp.

Schwartz, H. G., A. C. Clark, G. E. Dickey, G. C. Eads, R. E. Gallamore, G. Giuliano, W. J. Gutowski, R. H. Iwasaki, K. H. Jacob, T. R. Karl, R. J. Lempert, L. Paiewonsky, S. G. H. Philander, C. R. Zeppie, 2008: *The Potential Impacts of Climate Change on U.S. Transportation*, Transportation Research Board Special Report 290, National Academy of Sciences, Washington, DC, 218 pp.

CCSP Synthesis and Assessment Product 3-1, 2008: *Climate Models: An Assessment of Strengths and Limitations*. [David Bader, Curtis Covey, William Gutowski, Isaac Held, Kenneth Kunkel, Ronald Miller, Robin Tokmakian, Minghua Zhang, Lead Authors]. Department of Energy, Washington, D.C., USA, 217 pp.

CCSP Synthesis and Assessment Product 3-3, 2008: *Weather and Climate Extremes in a Changing Climate. Regions of Focus: North America, Hawaii, Caribbean, and U.S. Pacific Islands*. A Report by the U.S. Climate Change Science Program and the

Subcommittee on Global Change Research. [Thomas R. Karl, Gerald A. Meehl, Christopher D. Miller, Susan J. Hassol, Anne M. Waple, and William L. Murray (eds.)]. Department of Commerce, NOAA's National Climatic Data Center, Washington, D.C., USA, 164 pp.

W. Gutowski's specific contributions:

Executive Summary:

Karl, T.R., G.A. Meehl, T.C. Peterson, K.E. Kunkel, W.J. Gutowski, Jr., D.R. Easterling, 2008: Executive Summary in *Weather and Climate Extremes in a Changing Climate. Regions of Focus: North America, Hawaii, Caribbean, and U.S. Pacific Islands*. T.R. Karl, G.A. Meehl, C.D. Miller, S.J. Hassol, A.M. Waple, and W.L. Murray (eds.). A Report by the U.S. Climate Change Science Program and the Subcommittee on Global Change Research, Washington, DC.

Chapter 3:

Gutowski, W.J. (Coordinating Lead Author), G.C. Hegerl, G.J. Holland, T.R. Knutson, L.O. Mearns, R.J. Stouffer, P.J. Webster, M.F. Wehner, F.W. Zwiers, 2008: Causes of Observed Changes in Extremes and Projections of Future Changes in *Weather and Climate Extremes in a Changing Climate. Regions of Focus: North America, Hawaii, Caribbean, and U.S. Pacific Islands*. T.R. Karl, G.A. Meehl, C.D. Miller, S.J. Hassol, A.M. Waple, and W.L. Murray (eds.). A Report by the U.S. Climate Change Science Program and the Subcommittee on Global Change Research, Washington, DC.

Chapter 4:

Easterling, D.R., D.M. Anderson, S.J. Cohen, W.J. Gutowski, G.J. Holland, K.E. Kunkel, T.C. Peterson, R.S. Pulwarty, R.J. Stouffer, M.F. Wehner, 2008: Measures to Improve Our Understanding of Weather and Climate Extremes in *Weather and Climate Extremes in a Changing Climate. Regions of Focus: North America, Hawaii, Caribbean, and U.S. Pacific Islands*. T.R. Karl, G.A. Meehl, C.D. Miller, S.J. Hassol, A.M. Waple, and W.L. Murray (eds.). A Report by the U.S. Climate Change Science Program and the Subcommittee on Global Change Research, Washington, DC.

Journal Articles

[Underlined - Students mentored by W. Gutowski: *p*=postdoc, *g*=graduate, *u*=undergraduate]

Brunke, M. B., J. J. Cassano, N. Dawson, A. K. DuVivier, W. J. Gutowski Jr., J. Hamman, W. Maslowski, B. Nijssen, J. E. Eyre, J. C. Renteria, A. Roberts and X. Zeng, 2018: Evaluation of the atmosphere-land-ocean-sea ice interface processes in the Regional Arctic System Model Version 1 (RASMI) using local and globally gridded observations. *Geoscientific Model Development* (in review).

Abatan, A. A. (*g*), W. J. Gutowski, Jr., C. M. Ammann, L. Kaatz, B. G. Brown, L. Buja, R. Bullock, T. Fowler, E. Gilleland and J. H. Gotway, 2018: Statistics of multi-year droughts from the method for object-based diagnostic evaluation. *International Journal of Climatology*, **38**, 3405-3420 [DOI: 10.1002/joc.5512].

- Abatan, A. A. (g)., B. J. Abiodun, W. J. Gutowski and S. O. Rasaki-Balogun, 2018: Trends and variability in absolute indices of temperature extremes over Nigeria: linkage with NAO. *International Journal of Climatology*, **38**, 593-612 [DOI: 10.1002/joc.5196].
- Abatan, A. A. (g)., B. J. Abiodun, K. A. Lawal and W. J. Gutowski, 2018: Trends in mean and extreme temperatures over Ibadan, Southwest Nigeria. *Theoretical and Applied Climatology*, **131**, 1261-1272 [DOI: 10.1007/s00704-017-2049-1].
- Agel, L., M. Barlow, S. B. Feldstein, W. J. Gutowski, Jr., 2018: Identification of Large-Scale Meteorological Patterns Associated with Extreme Precipitation in the US Northeast. *Climate Dynamics*, **50**, 1819-1839 [DOI: 10.1007/s00382-017-3724-8].
- Kawazoe, S. (g), and W. J. Gutowski, 2018: Evaluation of regional very heavy precipitation events during the summer season using NARCCAP contemporary simulations. *International Journal of Climate*, **38**, E832-E846 [DOI: 10.1002/joc.5412].
- Xiaorui Niu, Shuyu Wang, Jianping Tang, Dong-Kyou Lee, William Gutowski, Koji Dairaku, John McGregor, Jack Katzfey, Xuejie Gao, Jia Wu, Song-you Hong, Yuqing Wang, Hidetaka Sasaki and Congbin Fu, 2018: Ensemble evaluation and projection of climate extremes in China by RMIP models. *International Journal of Climate*, **38**, 2039-2055 [DOI: 10.1002/joc.5315].
- Abatan, A. A. (g), W. J. Gutowski, Jr., C. M. Ammann, L. Kaatz, B. G. Brown, L. Buja, R. Bullock, T. Fowler, E. Gilleland and J. H. Gotway, 2017: Multiyear droughts and pluvials over the Upper Colorado River basin and associated circulations. *Journal of Hydrometeorology*, **18**, 799-818 [DOI: 10.1175/JHM-D-16-0125.1].
- Cassano, E. N., J. J. Cassano, M. W. Seefeldt, W. J. Gutowski, Jr. and J. M. Glisan (p), 2017: Synoptic Conditions During Summertime Temperature Extremes in Alaska. *International Journal of Climatology*, **37**, 3694-3713 [DOI:10.1002/joc.4949].
- Cassano, J. J., A. DuVivier, A. Roberts, M. Hughes, M. Seefeldt, M. Brunke, A. Craig, B. Fisel (g), W. Gutowski, J. Hamman, M. Higgins, W. Maslowski, B. Nijssen, R. Osinski, X. Zeng, 2017: Development of the Regional Arctic System Model (RASM): Near-surface atmospheric climate sensitivity. *Journal of Climate*, **30**, 5729-5753 [DOI: 10.1175/JCLI-D-15-0775.1].
- Lake, I., W. Gutowski, F. Giorgi and B. Lee, 2017: CORDEX climate research and information for regions. *Bulletin of the American Meteorological Society*, **98**, ES189-ES192 [DOI: 10.1175/BAMS-D-17-0042.1].
- Tesfatsion, L., Y. Jie, C. R. Rehmann, W. J. Gutowski, 2017: An agent-based platform for the study of watersheds as coupled natural and human systems. *Environmental Modelling & Software*, **89**, 40-60 [DOI: 10.1016/j.envsoft.2016.11.021].

- Abatan, A. A (g)., B. J. Abiodun, K. A. Lawal and W. J. Gutowski, 2016: Trends in extreme temperature over Nigeria from percentile-based threshold indices. *International Journal of Climatology*, **36**, 2527-2540 [DOI: 10.1002/joc.4510].
- Cassano, J. J., E. N. Cassano, M. W. Seefeldt, W. J. Gutowski and J. M. Glisan (p), 2016: Synoptic Conditions During Wintertime Temperature Extremes in Alaska. *Journal of Geophysical Research – Atmospheres*, **120**, 3241–3262 [DOI:10.1002/2015JD024404].
- Giorgi, F., and W. J. Gutowski, 2016: Coordinated Experiments for Projections of Regional Climate Change. *Current Climate Change Reports*, **2**, 202- 210 [DOI 10.1007/s40641-016-0046-6].
- Gutowski, W. J., F. Giorgi, B. Timbal, A. Frigon, D. Jacob, H.-S. Kang, R. Krishnan, B. Lee, C. Lennard, G. Nikulin, E. O'Rourke, M. Rixen, S. Solman, T. Stephenson and F. Tangang, 2016: WCRP Coordinated Regional Downscaling Experiment (CORDEX): A Diagnostic MIP for CMIP6. *Geoscientific Model Development*. (online) [DOI: 10.5194/ gmd-9-4087-2016].
- Glisan, J. M. (p), W. J. Gutowski, J. J. Cassano , E. N. Cassano and M. W. Seefeldt, 2016: Analysis of WRF extreme daily precipitation over Alaska using self-organizing maps. *Journal of Geophysical Research – Atmospheres*, **121**, 7746-7761 [DOI: 10.1002/2016JD024822].
- Grotjahn, R., R. Black, R. Leung, M. F. Wehner, M. Barlow, M. Bosilovich, A. Gershunov, W. J. Gutowski, J. R. Gyakum, R. W. Katz, Y.-Y. Lee, Y-K. Lim, Prabhat, 2016: North American extreme temperature events and related large-scale meteorological patterns: Statistical methods, dynamics, modeling, and trends. *Climate Dynamics*, **46**, 1151-1184 [DOI: 10.1007/s00382-015-2638-6].
- Klutse, N. A. B., B. J. Abiodun, B. C. Hewitson, W. J. Gutowski and M. A. Tadross, 2016: Evaluation of two GCMs in Simulating Rainfall Inter-annual variability over Southern Africa. *Theoretical and Applied Climatology*, **123**, 415-436 [DOI: 10.1007/s00704-014-1356-z].
- Tang, J., Q. Li, S. Wang, D.-K. Lee, P. Hui, X. Niu, W. Gutowski, K. Dairaku, J. McGregor, J. Katzfey, X. Gao, J. Li, S. Hong, Y. Wang and H. Sasaki, 2016: Building Asian Climate Change Scenario by Multi-Regional Climate Models Ensemble. Part I: Surface Air Temperature. *International Journal of Climatology*, **36**, 4241-4252 [DOI: 10.1002/joc.4628].
- Li, Q., S. Wang, D.-K. Lee, J. Tang, X. Niu, P. Hui, W. Gutowski, K. Dairaku, J. McGregor, J. Katzfey, X. Gao, J. Wu, S. Hong, Y. Wang and H. Sasaki, 2016: Building Asian Climate Change Scenario by Multi-Regional Climate Models Ensemble. Part II: Mean Precipitation. *International Journal of Climatology*, **36**, 4253-4264 [DOI: 10.1002/joc.4633].

- Cassano, E. N., J. M. Glisan (p), J. J. Cassano, W. J. Gutowski, Jr., M. W. Seefeldt, 2015: Methodology of using the self-organizing map algorithm to characterize and analyze widespread temperature extremes in Alaska and Canada. *Climate Research*, **62**, 199–218 [DOI: 10.3354/cr01274].
- Giorgi, F., and W. J. Gutowski, 2015: Regional dynamical downscaling and the CORDEX initiative. *Annual Review of Environment and Resources*, **40**, 467-490 [DOI: 10.1146/annurev-environ-102014-021217].
- Niu, X., S. Wang, J. Tang, D.-K Lee, W. Gutowski, K. Dairaku, J. McGregor, J. Katzfey, X. Gao, J. Wu, S.Y. Hong, Y. Wang and H. Sasaki, 2015: Projection of Indian summer monsoon climate in 2041–2060 by multiregional and global climate models. *Journal of Geophysical Research - Atmospheres*, **120**, 1776–1793 [DOI:10.1002/2014JD022620].
- Niu, X., S. Wang, J. Tang, D.-K Lee, X.-J. Gao, J. Wu, S.-Y. Hong, W. J. Gutowski, J. McGregor, 2015: Multimodel ensemble projection of precipitation in eastern China under A1B emission scenario. *Journal of Geophysical Research - Atmospheres*, **120** (Online: October 2015) [DOI: 10.1002/2015JD023853].
- Steinweg, C. (u) and W. J. Gutowski, 2015: Projected Changes in Greater St. Louis Summer Heat Stress in NARCCAP Simulations. *Weather, Climate and Society*, **7**, 159-168.
- Glisan, J. (g) and W. J. Gutowski, 2014b: WRF Winter Extreme Daily Precipitation over the CORDEX Arctic. *Journal of Geophysical Research*, **119**, 10,738–10,748 [DOI:10.1002/2014JD021676].
- Glisan, J. (g) and W. J. Gutowski, 2014a: WRF Summer Extreme Daily Precipitation over the CORDEX Arctic. *Journal of Geophysical Research*, **119**, 1720-1732 [DOI:10.1002/2013JD020697].
- Nkrumah, F., N. Klutse, D. Adukpo, K. Owusu, K. Quagraine, A. Owusu and W. Gutowski, 2014: Rainfall Variability over Ghana: Model versus Rain Gauge Observation. *International Journal of Geosciences*, **5**, 673-683. [DOI: 10.4236/ijg.2014.57060].
- Browne Klutse, N. A., K. Owusu, D. C. Adukpo, F. Nkruma, K. Quagraine, A. Owusu, W. J. Gutowski, 2013: Farmer's observation on climate change impacts on maize (*Zea mays*) production in a selected agro-ecological zone in Ghana. *Research Journal of Agriculture and Environmental Management*, **2**, 394-402.
- Glisan, J. (g) W. J. Gutowski, J. J. Cassano and M E. Higgins, 2013: Effects of Spectral Nudging in WRF on Arctic Temperature and Precipitation Simulations. *Journal of Climate*, **26**, 3985-3999 [DOI: 10.1175/JCLI-D-12-00318.1].
- Kawazoe, S. (g) and W. J. Gutowski, 2013: Regional, Extreme Daily Precipitation in CMIP5 Simulations. *Journal of Hydrometeorology*, **14**, 1228-1242.

- Kawazoe, S., (g) and W. J. Gutowski, 2013: Regional, Extreme Daily Precipitation in NARCCAP Simulations. *Journal of Hydrometeorology*, **14**, 1212-1227.
- Mearns, L. O., S. Sain, L. R. Leung, M. S. Bukovsky, S. McGinnis, S. Biner, D. Caya, R. W. Arritt, W. J. Gutowski, E. S. Takle, M. Snyder, R. G. Jones, A.M.B. Nunes, S. Tucker, D. Herzmann, L. McDaniel and L. Sloan, 2013: Climate Change Projections of the North American Regional Climate Change Assessment Program (NARCCAP). *Climatic Change*, **120**, 965-975 [DOI: 10.1007/s10584-013-0831-3].
- Mearns, L.O., R. Arritt, S. Biner, M. S. Bukovsky, S. McGinnis, S. Sain, D. Caya, J. Correia Jr., D. Flory, W. Gutowski, E S. Takle, R. Jones, R. Leung, W. Moufouma-Okia, L. McDaniel, A. M. B. Nunes, Y. Qian, J. Roads, L. Sloan and M. Snyder, 2013: Response to R. Pielke, Sr. Commentary on Mearns et al. 2012. *Bulletin of the Amer. Meteor. Soc.*, **94**, 1077-1078.
- Vera, C., W. Gutowski, C. R. Mechoso, B. N. Goswami, C. Reason, C. D. Thorncroft, J. A. Marengo, B. Hewitson, H. Hendon, C. Jones and P. Lionello, 2012: Understanding and Predicting Climate Variability and Change at Monsoon Regions. In *Climate Science for Serving Society: Research, Modelling and Prediction Priorities*, G. R. Asrar and J. W. Hurrell, Eds. Springer, 273-306.
- Mearns, L.O., R. Arritt, S. Biner, M. S. Bukovsky, S. McGinnis, S. Sain, D. Caya, J. Correia Jr., D. Flory, W. Gutowski, E S. Takle, R. Jones, R. Leung, W. Moufouma-Okia, L. McDaniel, A. M. B. Nunes, Y. Qian, J. Roads, L. Sloan and M. Snyder, 2012: The North American Regional Climate Change Assessment Program: Overview of Phase I Results. *Bulletin of the Amer. Meteor. Soc.*, **93**, 1337-1362.
- Abiodun, B. J., (p) W. J. Gutowski, A. A. Abatan (g), and J. M. Prusa, 2011: CAM-EULAG: A Non-hydrostatic atmospheric climate model with grid stretching. *Acta Geophysica*, **59**, 1158-1167 [DOI: 10.2478/s11600-011-0032-2].
- Fisel, B. J., (g) W. J. Gutowski, Jr., J. M. Hobbs, and J. J. Cassano, 2011: Multiregime states of Arctic atmospheric circulation. *Journal of Geophysical Research*, **116**, D20122, doi:10.1029/2011JD015790.
- Gbobaniyi, E.O., B. J. Abiodun, M. A. Tadross, B. C. Hewitson and W. J. Gutowski, 2011: The coupling of cloud base height and surface fluxes: a transferability intercomparison. *Theoretical and Applied Climatology*, **106**, 189-210 [DOI: 10.1007/s00704-011-0421-0].
- Prusa, J. M., and W. J. Gutowski, 2011: Multi-scale waves in sound-proof global simulations with EULAG. *Acta Geophysica*, **59**, 1135-1157 [DOI: 10.2478/s11600-011-0050-0].
- Boberg, F., P. Berg, P. Thejll, W. J. Gutowski, and J. H. Christensen, 2010: Improved confidence in climate change projections of precipitation further evaluated using daily statistics from ENSEMBLES models. *Clim. Dynamics*, **35**, 1509-1520 [DOI:10.1007/s00382-009-0683-8].

- Gutowski, W. J., R. W. Arritt, S. Kawazoe (u), D. M. Flory, E. S. Takle, S. Biner, D. Caya, R. G. Jones, R. Laprise, L. R. Leung, L. O. Mearns, W. Moufouma-Okia, A. M. B. Nunes, Y. Qian, J. O. Roads, L. C. Sloan, and M. A. Snyder, 2010: Regional, Extreme Monthly Precipitation Simulated by NARCCAP RCMs. *J. Hydrometeor.*, **11**, 1373-1379 [DOI: 10.1175/2010JHM1297.1].
- Takle, E. S., M. Jha, E. Lu, R. W. Arritt, W. J. Gutowski, Jr., and the NARCCAP Team, 2010: Streamflow in the Upper Mississippi River Basin as simulated by SWAT driven by 20C results of global climate models and NARCCAP regional climate models. *Meteorologische Zeitschrift*, **19**, 341-346.
- Boberg, F., P. Berg, P. Thejll, W. J. Gutowski and J. H. Christensen, 2009: Late 21st century changes in European PRUDENCE precipitation intensities. *Clim. Dynamics*, **32**, 1097-1106 [DOI: 10.1007/s00382-008-0446-y].
- Francis, J.A., J. J. Cassano, W. J. Gutowski, Jr., L. D. Hinzman, M. M. Holland, M. A. Steele, D. M. White and C. J. Vörösmarty, 2009: An Arctic hydrologic system in transition: Feedbacks and impacts on terrestrial, marine, and human life. *J. Geophys. Res.*, **114**, G04019 [DOI:10.1029/2008JG000902].
- Mearns, L. O., W. J. Gutowski, R. Jones, L.-Y. Leung, S. McGinnis, A. M. B. Nunes, Y. Qian, 2009: A regional climate change assessment program for North America. *EOS*, **90**, 311-312.
- Pryor, S.C., R.J. Barthelmie, D.T. Young, E. S. Takle, R. W. Arritt, D. Flory, W. J. Gutowski, Jr., A. Nunes, and J. Roads, 2009: Wind speed trends over the contiguous United States. *J. Geophys. Res.*, **114**, D14105 [DOI:10.1029/2008JD011416].
- Wang, S.-Y., R. R. Gillies, E. S. Takle and W. J. Gutowski, 2009: Evaluation of precipitation in the Intermountain Region as simulated by the NARCCAP regional climate models. *Geophys. Res. Lett.*, **36**, L11704 [DOI:10.1029/2009GL037930].
- Abiodun, B.J., (p) J.M. Prusa and W.J. Gutowski, 2008: Implementation of a Non-hydrostatic, Adaptive-Grid Dynamics Core in CAM3. Part I: Comparison of Dynamics Cores in Aqua-Planet Simulations. *Clim. Dynamics*, **31**, 795-810 [DOI: 10.1007/s00382-008-0381-y].
- Abiodun, B.J., (p) W.J. Gutowski and J.M. Prusa, 2008: Implementation of a Non-hydrostatic, Adaptive-Grid Dynamics Core in CAM3. Part II: Dynamical Influences on ITCZ Behavior and Tropical Precipitation. *Clim. Dynamics*, **31**, 811-822 [DOI: 10.1007/s00382-008-0382-x].
- Chen, T.-C., J.-D. Tsay and W. J. Gutowski, 2008: A comparison study for three polar grids. *J. Appl. Meteor. Clim.*, **47**, 2993-3007 [DOI: 10.1175/2008JAMC1746.1].

- Gutowski, W. J., S. S. Willis (*u*), J. C. Patton (*u*), B. R. J. Schwedler (*u*), R. W. Arritt, and E. S. Takle, 2008: Changes in extreme, cold-season synoptic precipitation events under global warming. *Geophys. Res. Lett.*, **35**, L20710 [DOI:10.1029/2008GL035516].
- Im, E.-S., W. J. Gutowski, Jr., and F. Giorgi, 2008: Consistent changes in twenty-first century daily precipitation from regional climate simulations for Korea using two convection parameterizations. *Geophys. Res. Lett.*, **35**, L14706 [DOI:10.1029/2008GL034126].
- Abiodun, B. J., (*p*) J. Pal, E. A. Afiesimama, W. J. Gutowski and A. Adedoyin, 2007: Simulation of West Africa monsoon using the RegCM3. Part II: Impact of deforestation and desertification. *Theor. Appl. Clim.*, **93**, 245-261 [DOI: 10.1007/s00704-007-0333-1].
- Gutowski, W. J., K. A. Kozak, (*u*) R. W. Arritt, J. H. Christensen, J. Patton (*u*) and E. S. Takle, 2007: A possible constraint on regional precipitation intensity changes under global warming. *J. Hydrometeorol.*, **8**, 1382–1396 [DOI: 10.1175/2007JHM817.1].
- Gutowski, W. J., H. Wei (*p*), C. J. Vörösmarty and B. M. Fekete, 2007: Influence of Arctic Wetlands on Arctic Atmospheric Circulation. *J. Climate*, **20**, 4243–4254 [DOI: 10.1175/JCLI4243.1].
- Lee, D.-K., W. J. Gutowski, H.-S. Kang and C.-J. Kim, 2007: Intercomparison of precipitation simulated by regional climate models over East Asia in 1997 and 1998. *Adv. Atmos. Sci.* **24**, 539-554.
- Person, M., P. Roy, H. Wright, W. J. Gutowski, Jr., E. Ito, T. Winter, D. Rosenberry and D. Cohen, 2007: Hydrologic Response of the Crow Wing Watershed, Minnesota to Mid-Holocene Climate Change. *GSA Bulletin*, **119**, 363-376 [DOI: 10.1130/B26003.1].
- Takle, E. S., J. Roads, B. Rockel, W. J. Gutowski, R. W. Arritt, I. Meinke, C. G. Jones and A. Zadra, 2007: Transferability intercomparison: An opportunity for new insight on the global water cycle and energy budget. *Bull. Amer. Meteor. Soc.* **88**, 375-384 [DOI:10.1175/BAMS-88-3-375].
Supplement: pp. S1-S4 [DOI: 10.1175/BAMS-88-3-Takle].
- White, D., L. Hinzman, L. Alessa, J. Cassano, M. Chambers, K. Falkner, J. Francis, W. J. Gutowski, M. Holland, M. Holmes, H. Huntington, D. Kane, A. Kliskey, C. Lee, J. McClelland, B. Peterson, S. Rupp, F. Straneo, M. Steele, R. Woodgate, D. Yang, K. Yoshikawa, T. Zhang, 2007: The Arctic Freshwater System: Changes and Impacts. *J. Geophys. Res. – Biogeosciences*, 112, G04S54, doi:10.1029/2006JG000353.
- Afiesimama, E.A., J. Pal, B.J. Abiodun (*p*), W.J. Gutowski and A. Adedoyin, 2006: Simulation of West Africa monsoon using the RegCM3. Part I: Model validation and interannual variability. *Theor. Appl. Clim.*, **86**, 23-37 (DOI: 10.1007/s00704-005-0202-8).
- Cohen, D., M. Person, R. Daannen, S. Locke, D. Dahlstromnb, V. Zabielski, T. C. Winter, D. O. Rosenberry, H. Wright, E. Ito, J. L. Nieber and W. J. Gutowski, Jr., 2006:

- Groundwater supported evapotranspiration within glaciated watersheds under conditions of climate change. *J. Hydrology*, **320**, 484-500 (doi:10.1016/j.jhydrol.2005.07.051).
- Duffy, P. B., R. W. Arritt, J. Coquard, W. J. Gutowski, J. Han, J. Iorio, J. Kim, L.-R. Leung, J. Roads and E. Zeledon, 2006. Simulations of present and future climates in the western U.S. with four nested regional climate models, *J. Climate*, **19**, 873-895 [doi: 10.1175/JCLI3669.1].
- Francisco, R.V., J. Argete, F. Giorgi, J. Pal, X. Bi and W.J. Gutowski, 2006: Regional model simulation of summer rainfall over the Philippines: Effect of choice of driving fields and ocean flux schemes. *Theor. Appl. Clim.*, **86**, 215-227 (DOI: 10.1007/s00704-005-0216-2).
- Hay, L. E., M. P. Clark, M. Pagowski, G. H. Leavesley, G. A. Grell, and W. J. Gutowski, Jr., 2006: One-way coupling of an atmospheric and a hydrologic model in Colorado. *J. Hydrometeor.*, **7**, 569-589 [DOI: 10.1175/JHM512.1].
- Prusa, J. M., and W. J. Gutowski, 2006: MPDATA and Grid Adaptivity in Geophysical Fluid Flow Models. *Int. J. Numer. Meth. Fluids*, **50**, 1207-1228 (DOI: 10.1002/flid.1152).
- Tadross, M., W.J. Gutowski, B. Hewitson, C. Jack and M. New, 2006: MM5 simulations of interannual change and the diurnal cycle of southern African regional climate. *Theor. Appl. Clim.*, **86**, 63-80 (DOI: 10.1007/s00704-005-0208-2).
- Otles, Z., (p) and W. J. Gutowski, 2005: Atmospheric stability effects on Penman-Monteith evapotranspiration estimates. *Pure Appl. Geophys.*, doi: 10.1007/s00024-005-2713-8.
- Fu, C. B., S. Wang, Z. Xiong, W. J. Gutowski, D.-K. Lee, J. L. McGregor, Y. Sato, H. Kato, J.-W. Kim and M.-S. Su, 2005: Regional Climate Model Intercomparison Project for Asia. *Bull. Amer. Meteor. Soc.*, **86**, 257-266.
- Iselin, J. P., (g) W. J. Gutowski and J. M. Prusa, 2005: Tracer advection using dynamic grid adaptation and MM5. *Mon. Wea. Rev.*, **133**, 175-187.
- Pan, Z., R. W. Arritt, E. S. Takle, W. J. Gutowski, Jr., C. J. Anderson, and M. Segal, 2004: Altered hydrologic feedback in a warming climate introduces a “warming hole”. *Geophys. Res. Lett.*, **31**, L17109, doi:10.1029/2004GL020528.
- Gutowski, W. J., F. Otieno (g), R. W. Arritt, E. S. Takle and Z. Pan, 2004: Diagnosis and attribution of a seasonal precipitation deficit in a U.S. regional climate simulation. *J. Hydrometeor.*, **5**, 230-242, doi: 10.1175/1525-7541(2004)005<0230:DAAOAS>2.0.CO;2
- Gutowski, W. J., S. G. Decker (u), R. A. Donavon (u), Z. Pan, R. W. Arritt and E. S. Takle, 2003: Temporal-spatial scales of observed and simulated precipitation in central U.S. climate. *J. Climate*, **16**, 3841-3847.

- Anderson, C.J., R. W. Arritt, E. S. Takle, Z. Pan, W. J. Gutowski, R. da Silva, and PIRCS modelers, 2003: Hydrologic processes in regional climate model simulations of the central United States flood of June-July 1993. *J. Hydrometeor.*, **4**, 584-598.
- Filby, S., S. Locke, M. Person, T. Winter, D. Rosenberry, W. Gutowski, and E. Ito, 2002: Quantitative Reconstruction of groundwater and lake levels during the mid-Holocene within the Shingobee Watershed, Minnesota. *Quat. Res.*, **58**, 246-254, doi:10.1006/qres.2002.2377.
- Gutowski, W. J., C. J. Vörösmarty, M. Person, Z. Ötles (p), B. Fekete and J. York, 2002: A Coupled Land-Atmosphere Simulation Program (CLASP). *J. Geophys. Res.*, **107** (D16), 4283, 10.1029/2001JD000392.
- Hay, L.E., M.P. Clark, R.L. Wilby, W. J. Gutowski Jr., R. W. Arritt, E. S. Takle, Z. Pan and G.H. Leavesley, 2002: Use of Regional Climate Model Output for Hydrologic Simulations. *J. Hyrdometeor.*, **3**, 571-590.
- Iselin, J.P., (g) J.M. Prusa and W. J. Gutowski, 2002: Dynamic grid adaptation using the MPDATA scheme. *Mon. Wea. Rev.*, **130**, 1026-1039
- Wei, H., (p) W.J. Gutowski Jr., C.J. Vorosmarty and B. M. Fekete, 2002: Calibration and validation of a regional climate model for pan-Arctic hydrologic simulation. *J. Climate*, **15**, 3222-3236.
- York, J. P., M. Person, W.J. Gutowski and T. C. Winter, 2002: Putting aquifers into atmospheric simulation models: An example from the Mill Creek Watershed, northeastern Kansas. *Adv. Wat. Res.*, **25**, 221-238
- Kunkel, K. E., K. Andsager, X.-Z. Liang, R. W. Arritt, E. S. Takle, W. J. Gutowski, Jr. and Z. Pan. 2002: Observations and regional climate model simulations of extreme precipitation events and seasonal anomalies: A comparison. *J. Hydrometeor.*, **3**, 322-334.
- Giorgi, F., B. Hewitson, and multiple co-authors (59 contributing authors including W. J. Gutowski), 2001: Chapter 10. Regional Climate Change Information - Evaluation and Projections. In *Climate Change 2001: The Scientific Basis*, Editors: J.T. Houghton, Y. Ding, D.J. Griggs, M. Noguer, P.J. van der Linden, X. Dai, K. Maskell, C.A. Johnson, Cambridge University Press, Cambridge, 583-638.
- Gutowski, W. J., J. W. Seidel (u) and A. Ervin (u), 2001: Water transport by thin moist layers in Project STORM soundings. *Mon. Wea. Rev.*, **129**, 167-172.
- Pan, Z., J. H. Christensen, R.W. Arritt, W.J. Gutowski, Jr., E.S. Takle, and F. Otiemo (g), 2001: Evaluation of uncertainties in regional climate change simulations. *J. Geophys. Res.*, **106**, 17,735-17,752.
- Pan, Z., R. W. Arritt, W. J. Gutowski, and E. S. Takle, 2001: Soil moisture in regional climate models: Simulation and projection. *Geophys. Res. Lett.*, **28**, 2947-2950.

- Wei, H., (p) Segal, M., W. J. Gutowski, Z. Pan, R. W. Arritt and W. A. Gallus, 2001: Sensitivity of simulated regional surface thermal fluxes during snowmelt to selection of the lowest model level height. *J. Hydrometeor.* **2**, 395-405.
- Jiang, W., (g) and W. J. Gutowski, 2000: Moist baroclinic instability in the presence of surface-atmosphere coupling. *J. Atmos. Sci.* **57**, 2923-2935.
- Segal, M., Z. Pan, W. J. Gutowski, 2000: Some conceptual and scaling evaluations of snowmelt events forced by warm soil. *J. Hydromet.*, **1**, 364-369.
- Wilby, R. L., L. E. Hay, W. J. Gutowski, Jr, R. W. Arritt, E. S. Takle, G. H. Leavesley, and M. Clark, 2000: Hydrological responses to dynamically and statistically downscaled general circulation model output. *Geophys. Res. Lett.*, **27**, 1199-1202.
- York, J. P., S. Filby, M. Person, H. Wright and W. J. Gutowski, 2000: A Holocene hydrologic model of the Crow Wing watershed, Minnesota. *J. Geochem. Expl.*, **69**, 419-422.
- Pan, Z., E. S. Takle, W. J. Gutowski and R. W. Turner, 1999: Long simulation of regional climate as a sequence of short segments. *Mon. Wea. Rev.*, **127**, 308-321.
- Takle, E. S., W. J. Gutowski, R. A. Arritt, Z. Pan, C. J. Anderson, R. R. da Silva, D. Caya, S.-C. Chen, J. H. Christensen, S.-Y. Hong, H.-M. H. Juang, J. Katzfey, W. M. Lapenta, R. Laprise, P. Lopez, J. McGregor and J. O. Roads, 1999: Project to Intercompare Regional Climate Simulations (PIRCS): Description and initial results. *J. Geophys. Res.*, **104**, 19,443-19,461.
- Gutowski, W. J., Z. Ötles (p), and Y. Chen (g), 1998: Effect of ocean-surface heterogeneity on climate simulation. *Mon. Wea. Rev.*, **126**, 1419-1429.
- Gutowski, W. J., and W. Jiang (g), 1998: Surface-flux regulation of the coupling between cumulus convection and baroclinic waves. *J. Atmos. Sci.*, **55**, 940-953.
- Gutowski, W. J., E. S. Takle and R. W. Arritt, 1998: Project to Intercompare Regional Climate Simulations - Workshop II, 5 - 6 June 1997. *Bull. Am. Meteor. Soc.*, **79**, 657-659.
- Iselin, J. P. (g) and W. J. Gutowski, 1997: Water-vapor layers in STORM-FEST rawinsonde observations. *Mon. Wea. Rev.*, **125**, 1954 - 1963.
- Gutowski, W. J., Y. Chen (g) and Z. Ötles (p), 1997: Atmospheric water-vapor transport in NCEP reanalyses: comparison with river discharge in the central United States. *Bull. Am. Meteor. Soc.*, **78**, 1957-1969.
- Gutowski, W. J., P. C. Nendick (u), and L. E. Branscome, 1995: Sensitivity of transient eddies to climate change in the CCC general circulation model. *Atmos.-Ocean* , **33**, 753-770.

- Gutowski, W. J., E. A. Lindemulder, K. Jovaag, 1995: Temperature-dependent daily variability of precipitable water in SSM/I observations. *J. Geophys. Res.*, **100**, 22,971-22,980.
- Molnar, G. I., and W. J. Gutowski, 1995: The faint young sun paradox: Further exploration of the role of dynamical heat flux feedbacks in maintaining global climate stability. *J. Glaciology*, **41**, 87-90.
- Gutowski, W. J., G. F. McMahon, P. Kirshen and S. Schluchter, 1994: Projecting climate change to small basins: Potential impact of global warming on flooding in South Florida. *J. Water Res. Plan. Man.*, **120**, 176-185.
[Nominated by the Committee on Operations Management of the American Society of Civil Engineering for 1994 Paper of the Year in the ASCE Water Resources Planning and Management Division]
- Yang, S., and W. J. Gutowski, 1994: GCM simulations of the three-dimensional propagation of stationary waves. *J. Climate*, **7**, 414-433.
- Branscome, L. E., and W. J. Gutowski, 1992: The impact of doubled CO₂ on the energetics and hydrologic processes of mid-latitude transient eddies. *Climate Dynamics*, **8**, 29-37.
- Gutowski, W. J., L. E. Branscome and D. Stewart, 1992: Life cycles of moist baroclinic eddies. *J. Atmos. Sci.*, **49**, 306-319.
- Rosen, R. D., and W. J. Gutowski, 1992: Response of zonal winds and atmospheric angular momentum to a doubling of CO₂. *J. Climate*, **5**, 1391-1404.
- Yang, S., and W. J. Gutowski, 1992: On the relationship between tropical Chinese rainfall and the Indian monsoon. *J. Meteor. Soc. Japan*, **70**, 997-1003.
- Gutowski, W. J., D. S. Gutzler and W.-C. Wang, 1991: Surface energy balances of three general circulation models: Implications for simulating regional climate change. *J. Climate*, **4**, 121-134.
- Branscome, L. E., W. J. Gutowski and D. Stewart, 1989: Effect of surface fluxes on the nonlinear development of baroclinic waves. *J. Atmos. Sci.*, **46**, 460-475.
- Gutowski, W. J., L. E. Branscome and D. Stewart, 1989: Life cycles of baroclinic waves: Mean flow adjustment. *J. Atmos. Sci.*, **46**, 1724-1737.
- Gutowski, W. J., and G. Molnar, 1988: Accelerating the convergence of seasonal climate models with mixed layer oceans. *J. Geophys. Res.*, **93**, 1737-1744.
- Gutowski, W. J., 1985a: A simple model for the interaction between vertical eddy heat fluxes and static stability. *J. Atmos. Sci.*, **42**, 346-358.

Gutowski, W. J., 1985b: Baroclinic adjustment and mid-latitude temperature profiles. *J. Atmos. Sci.*, **42**, 1733-1745.

Gutowski, W. J., W.-C. Wang, and P. H. Stone, 1985: Effects of dynamic heat fluxes on model climate sensitivity: meridional sensible and latent heat fluxes. *J. Geophys. Res.*, **90**, 13081-13086.

Gutowski, W. J., and R. B. Larsen, 1976: Tidal effects induced in a spherical galaxy by the passage of a companion. *Pub. Astron. Soc. Pac.*, **88**, 374-377.

Other Publications

Kling, C. L. ; R. W. Arritt, G. Calhoun, D. A. Keiser, J. M. Antle, J. G. Arnold, M. Carriquiry, I. Chaubey, P. Christensen, B. Ganapathysubramanian, P. Gassman, W. Gutowski, T. W. Hertel, G. Hoogenboom, E. Irwin, M. Khanna, P. Merel, D. J. Phaneuf, A. Plantinga, S. Polasky, P. Preckel, S. Rabotyagov, I. Rudik, S. Secchi, A. Smith, A. Vanlooche, A. and Coauthors, 2016: Research needs and challenges in the FEW system: Coupling economic models with agronomic, hydrologic, and bioenergy models for sustainable food, energy, and water systems. Working Paper - Center for Agricultural and Rural Development, Iowa State University. Issue: 16-WP 563, 32 pp.

Tesfatsion, L., Y. Jie, C. R. Rehmann, W. J. Gutowski, 2015: WACCShed: a platform for the study of watersheds as dynamic coupled natural and human systems. Working Paper - Department of Economics, Iowa State University, Issue: 15022, 66 pp.

Rosenzweig, B., C. Vörösmarty, W. J. Gutowski and A. Steiner, 2014: Forging a Partnership: Joining Scientists and Stakeholders in Regional Earth System Modeling. Forum Article, *EOS*, **95**, 247-248 [DOI: 10.1002/2014EO270005].

Gutowski, W. J., and J. J. Cassano, 2014: Self-Organizing Maps: A method for analyzing Large-Scale Meteorological Patterns associated with extreme events. *CLIVAR Variations*, **12**, Number 1, 7-10. Gutowski, W., and J. Cassano, 2013: Predicting the Arctic's Future. *International Innovation*, June 2013, 83-85.

Prusa, J.M., and W.J. Gutowski, 2010: Multi-scale features of baroclinic waves in sound-proof, global simulations with EULAG. *Proc. Fifth European Conference on Computational Fluid Dynamics*, Lisbon, Portugal, 14-17 June, 2010, CD-ROM paper #1453.

Roberts, A., J.E. Walsh, L. Hinzman, R. Doescher, A. Sumi, M. Holland, J. Cassano, W. Maslowski, W. Gutowski, J. Hel, 2009: Towards a community Arctic System Model. *Ice and Climate News*, **10**, 14-15.

Rockel, B., I. Meinke, J. Roads, W. J. Gutowski, Jr., R. W. Arritt, E. S. Takle, and C. Jones, 2005: The Inter-CSE Transferability Study. *CEOP Newsletter*. August 2005.

- Fu, C., and Coauthors (including W. J. Gutowski), 2002: Regional Model Intercomparison Project (RMIP) for East Asia. *Research Activities in Atmospheric and Oceanic Modeling*, CAS/JSC WGNE, WMO.
- Gutowski, W. J., R. W. Arritt, E., S. Takle, Z. Pan, F. Giorgi, J. H. Christensen, S.-Y. Hong, W. M. Lapenta, G. E. Liston, J. McGregor, and J. O. Roads, 2000: Project to Intercompare Regional Climate Simulations: Advancing the CLIVAR Agenda. *CLIVAR Exchanges*, **5**, No. 4 (December), 13-15.
- Person, M., J. York, S. Filby, W. Gutowski, J. Neiber and R. Daanen, 2000: A novel model. *Resource, Energy & Technology for a Sustainable World*, **7**, 13-14.
- APSaTSCo¹, 1999: Development Program for Science and Technology in Africa. Published by UNESCO and the International Council of Scientific Unions (ICSU).
- Vorosmarty, C. J., W. J. Gutowski, M. Person, T.-C. Chen and D. Case, 1993: Linked atmosphere-hydrology models at the macro-scale, in *Macroscale Modelling of the Hydrosphere*, W. B. Wilkinson, ed., International Association of Hydrological Sciences, 3-27. [[Keynote Paper](#)]

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- Yang, S., and W. J. Gutowski, 1992: Atmospheric stationary wave activity flux and its change with CO₂ doubling. *Research Activities in Atmospheric and Oceanic Modeling*, CAS/JSC WGNE, WMO.
- Gutowski, W. J., M. J. Iacono, X.-Z. Liang and W.-C. Wang, 1990: Simulating climate with two different numerical schemes. Technical Report 49, Carbon Dioxide Research Division, U. S. Department of Energy, 57 pp.
- Gutowski, W. J., G. L. Potter and M. R. Riches, 1988: DOE model intercomparison workshop II. *Bull. Am. Meteor. Soc.*, **69**, 1453-1454.
- Gutowski, W. J., D. S. Gutzler, D. Portman and W.-C. Wang, 1988: Surface energy balances of three general circulation models: Current climate and response to increasing atmospheric CO₂. Technical Report 42, Carbon Dioxide Research Division, U. S. Department of Energy, 120 pp.
- Kaplan, L. D., J.-F. Louis, R. N. Hoffman, R. G. Isaacs, W. J. Gutowski, and T. Nehr Korn, 1985: Improving numerical weather prediction by maximizing the use of assimilated satellite data. AFGL Technical Report 85-0298, 172 pp.
- Gutowski, W. J., 1984: Vertical eddy heat fluxes and the temperature structure of the mid-latitude troposphere. Ph.D. Thesis, MIT, 294 pp.

CONFERENCE/WORKSHOP PRESENTATIONS:

- Gutowski, W. J., 2017: CORDEX-ICCS Linkages: Potential Directions for WCRP/CORDEX Activities. *Fifth International Conference on Climate Services*, Cape Town, South Africa, March 2017 [[invited](#)].
- Gutowski, W. J., 2016: The Coordinated Regional Downscaling Experiment (CORDEX): Update. *Fall Meeting – American Geophysical Union*, San Francisco, CA, December 2016. [[invited](#)]
- Gutowski, W.J., 2016: The RCPs and Earth System Modeling. *RCP/SSP Symposium*. University of Cape Town, Cape Town, South Africa, October 2016 [[invited](#)].
- Gutowski, W. J., 2016: Water and Climate Change (WACC): Building Community Consensus for a Sustainable Future. *Annual Conference*, South African Society for Atmospheric Sciences, Cape Town, South Africa, October 2016 [[keynote address](#)].

- Gutowski, W. J., 2016: The Coordinated Regional Downscaling Experiment (CORDEX) – Program Update. *International Conference on Regional Climate – CORDEX 2016*, Stockholm, Sweden, May 2016. [[invited](#)]
- Gutowski, W. J., 2016: CORDEX Coordinated Output for Regional Evaluations (CORDEX CORE). *International Conference on Regional Climate – CORDEX 2016*, Stockholm, Sweden, May 2016. [[invited](#)]
- Bitterman, P., Bennett, D.A., Secchi, S., Gutowski, W., Basu, N., Schnoor, J., Xu, S., Le, L., Kawazoe, S., 2015: *People, Water, and Climate: Adaptation and Resilience in Agricultural Watersheds*. Conference on Complex Systems. Tempe, AZ.
- Gutowski, W.J., 2015: Advancing Integrated Modeling. *FEW Workshop: Coupling Economic Models with Agronomic, Hydrologic, and Bioenergy Models for Sustainable Food, Energy, and Water Systems*, Ames, Iowa, October 2015. [[invited panelist](#)]
- Gutowski, W.J., J.M. Glisan, S. Kawazoe and K.M. Smalley, 2014: Extreme Daily Precipitation in North American Climate Simulations: Scales and Processes. *Fall Meeting*, American Geophysical Union, San Francisco, CA, December 2014. [[invited](#)]
- Gutowski, W.J., 2014: Some Multi-Model, Multi-Method, Multi-Scale (M⁵S) Issues. *WCRP/WGRC Expert Meeting on Climate Information "Distillation"*, Santander, Spain, October 2014. [[invited](#)]
- Gutowski, W.J., 2014: Observed and simulated extreme precipitation in the North American Arctic. *CNRCWP Science Meeting 2014*, Montréal, Canada, May 2014. [[invited](#)]
- Gutowski, W.J., 2014: Metrics for CORDEX: RegCM in Context. *Seventh ICTP Workshop on the Theory and Use of Regional Climate Models*, Trieste, Italy, May 2014. [[invited](#)]
- Gutowski, W.J., and F. Giorgi, 2014: CORDEX: The Coordinated Regional Downscaling Experiment - Update. *WCRP VAMOS/CORDEX Workshop on Latin-America and Caribbean CORDEX LAC: Phase II - Caribbean*, Santo Domingo, Dominican Republic, April 2014. [[invited](#)]
- Dziubanski, D., W. Gutowski, K.J. Franz, J. Goodwin, C. R. Rehmann, W. W. Simpkins, L. Tesfatsion, A. Wanamaker, J. Maloa Nnoko, Y. Jie, 2014: Building a sustainable water future through community interactions and integrated modeling of the human-natural system. *Iowa Water Conference*, Ames, IA, March 3-4, 2014.
- Buja, L., W. J. Gutowski, L. Kaatz, B. Brown, C.M. Ammann, E. Gilleland, T. Fowler, J. Halley-Gotway, K. Ikeda, D. Yates, A. Abatan, 2014: Advanced Climate and Regional Model Validation for Societal Applications. *EaSM1 and EaSM2 PI Meeting*, Washington, DC, January 2014.
- Maslowski, W., M. A. Brunke, J.J. Cassano, A. Craig, A. DuVivier, B. J. Fisel, W. J. Gutowski, M. E. Higgins, M. Hughes, D. P. Lettenmaier, B. Nijssen, R. Osinski, A. Roberts, and X.

- Zeng, 2013: Modeling Arctic Climate with a Regional Arctic System Model (RASMs). *EaSM1 and EaSM2 PI Meeting*, Washington, DC, January 2014.
- Gutowski, W.J., and F. Giorgi, 2013: CORDEX: The Coordinated Regional Downscaling Experiment – Current Directions. *Regional climate modelling and robust foundations for climate services, International Conference on Climate Services 3*, Montego Bay, Jamaica, December 2013. [[invited](#)]
- Gutowski, W.J., 2013: WCRP CORDEX: Other Regions. *Regional climate modelling and robust foundations for climate services, International Conference on Climate Services 3*, Montego Bay, Jamaica, December 2013. [[invited](#)]
- Gutowski, W.J., 2013: Performance Metrics. *International Conference on Regional Climate: CORDEX 2013*, Brussels, Belgium, November 2013. [[invited](#)]
- Gutowski, W.J., 2013: CORDEX: The Coordinated Regional Downscaling Experiment. *WCRP VAMOS/CORDEX Workshop on Latin-America and Caribbean CORDEX LAC: Phase I - South America*, Lima, Perú, September 2013. [[invited](#)]
- Gutowski, W.J., 2013: CORDEX: Metrics for CORDEX. *WCRP VAMOS/CORDEX Workshop on Latin-America and Caribbean CORDEX LAC: Phase I - South America*, Lima, Perú, September 2013. [[invited](#)]
- Gutowski, W.J., 2013: Understanding Synoptic Weather Yielding Extreme Daily Precipitation. *Workshop on Large-Scale Meteorological Pattern Associated with Extreme Temperature and Precipitation Events*, Berkeley, CA, August 2013. [[invited](#)]
- Gutowski, W.J., 2013: Changes in Heavy Precipitation: Past, Present and Future. *Five Years Out: Ongoing Impacts of the 2008 Floods*, Cedar Rapids, IA, May 2013. [[invited](#)]
- Bennett, DA, Ding, D, Bitterman, P, Muste, M, Schnoor, J, Secchi, S, Gutowski, W, 2013: Modeling Land Use/Land Cover Change in Response to Changing Economic and Environmental Drivers. Joint presentation to Beijing University and the China University of Geosciences. [[invited seminar](#)]
- Cassano, E. N., J. J. Cassano, W. J. Gutowski, and J. M. Glisan, 2013: Analysis of synoptic forcing for widespread surface temperature extremes across Alaska. *12th Conference on Polar Meteorology and Oceanography*, Seattle, WA, April 2013.
- Cassano, J. J., M. A. Brunke, A. Craig, A. DuVivier, B. J. Fisel, W. J. Gutowski, M. E. Higgins, M. Hughes, D. P. Lettenmaier, W. Maslowski, B. Nijssen, R. Osinski, A. Roberts, and X. Zeng, 2013: Modeling Arctic Climate with a Regional Arctic System Model (RASMs). *12th Conference on Polar Meteorology and Oceanography*, Seattle, WA, April 2013.

- Fisel, B. J., and W. J. Gutowski, 2013: Multi-Regime States of Extreme Behavior of Arctic Atmospheric Circulation. *12th Conference on Polar Meteorology and Oceanography*, Seattle, WA, April 2013.
- Glisan, J. M., W. J. Gutowski, J. J. Cassano, and E. N. Cassano, 2013: A SOM-based approach for analyzing daily precipitation extremes over the North American Arctic. *12th Conference on Polar Meteorology and Oceanography*, Seattle, WA, April 2013.
- Gutowski, W.J., 2013: Simulating the Global Water Cycle: Climate Changes and Disease Implications. *Forum on the Integration of Climate Science and Infectious Disease*, Yale University, 25-26 January, 2013. [[invited](#)]
- Gutowski, W.J., W. Maslowski, J. Clement Kinney, A. Roberts, M. Higgins, A. Craig, R. Osinski, J. J. Cassano, D. P. Lettenmaier, W. H. Lipscomb, S. M. Tulaczyk, X. Zeng, 2012: The Regional Arctic System Model: Successes, Challenges and Opportunities. *Fall Meeting*, American Geophysical Union, San Francisco, CA, December 2012. [[invited](#)]
- Gutowski, W.J., 2012: Projections of Water-Cycle Change: Uncertainty and Utility. *Fall Meeting*, American Geophysical Union, San Francisco, CA, December 2012. [[invited](#)]
- Shanks, L. V., W. J. Gutowski, S. Kawazoe and R. M. MacDonald, 2012: Changes in current and future NARCCAP-simulated precipitation intensity over the continental United States. *Fall Meeting*, American Geophysical Union, San Francisco, CA, December 2012.
- Gutowski, W. J., A. A. Abatan, B. J. Abiodun and J. M. Prusa, 2012: West African Extreme Daily Precipitation in Observations and Stretched-Grid Simulations by CAM-EULAG. *3rd International EULAG Workshop on Eulerian/Lagrangian methods for fluids*, Loughborough, UK, 25-28 June, 2012.
- Abiodun, B. J., W. J. Gutowski, J. M. Prusa and P. Smolarkiewicz, 2012: Continuous Dynamic Grid Adaptation in A Global Atmospheric Model: Application and Refinement. *3rd International EULAG Workshop on Eulerian/Lagrangian methods for fluids*, Loughborough, UK, 25-28 June, 2012.
- Prusa, J. M., and W. J. Gutowski, 2012: Multi-Scale Waves in Sound-Proof Global Simulations with EULAG. *3rd International EULAG Workshop on Eulerian/Lagrangian methods for fluids*, Loughborough, UK, 25-28 June, 2012.
- Gutowski, W.J., 2012: CORDEX and NARCCAP: Foundations in Reanalyses. *4th WCRP International Conference on Reanalyses*, Silver Spring, MD, 7-11 May 2012. [[invited](#)]
- E.N. Cassano, J.J. Cassano, M.E. Higgins, W.J. Gutowski, and J. Glisan, 2012: A model and reanalysis based analysis of the relationship of large-scale weather patterns to temperature extremes in Alaska. *International Polar Year 2012 Conference*, Montreal, Canada, 22-27 April 2012.

- Fisel, B. J., W.J. Gutowski, J.M. Hobbs and J.J. Cassano, 2012: Multi-Regime States of Arctic Atmospheric Circulation. *International Polar Year 2012 Conference*, Montreal, Canada, 22-27 April 2012.
- Glisan, J. M., and W. J. Gutowski, 2012: Summer Extreme Daily Precipitation over the CORDEX Arctic Domain as Produced in the Pan-Arctic WRF. *International Polar Year 2012 Conference*, Montreal, Canada, 22-27 April 2012. [third prize student winner in the category "Past, present and future changes in the polar regions"]
- Kawazoe, S., and W.J. Gutowski, 2012: Precipitation Extremes in CMIP5 GCMs and Observations. *General Assembly*, European Geophysical Union, Vienna, Austria, April 2012.
- Gutowski, W.J., and S. Kawazoe, 2012: Physical Behavior of Precipitation Extremes in CMIP5 GCMs and Observations. *CMIP5 Analysis Workshop*, Honolulu, HI, March 2012.
- Cassano, J. J., M. Higgins, M.R. Hughes, W.J. Gutowski, D.P. Lettenmaier, W. Maslowski, 2011: Modeling the Arctic Atmosphere with the Regional Arctic Climate Model (RACM). *Fall Meeting*, American Geophysical Union, San Francisco, CA, December 2011.
- Fisel, B. J., W.J. Gutowski, J.M. Hobbs and J.J. Cassano, 2011: Multi-Regime States of Arctic Atmospheric Circulation. *Fall Meeting*, American Geophysical Union, San Francisco, CA, December 2011.
- Glisan, J. M., W.J. Gutowski, M. Higgins and J.J. Cassano, 2011: The Effects of Spectral Nudging on Arctic Temperature and Precipitation Extremes as Produced by the Pan-Arctic WRF. *Fall Meeting*, American Geophysical Union, San Francisco, CA, December 2011.
- Gutowski, W.J., and S. Kawazoe, 2011: Extreme Daily Precipitation in North American Climate Simulations: Scales, Processes and Changes. *Fall Meeting*, American Geophysical Union, San Francisco, CA, December 2011. [invited]
- MacDonald, R., W.J. Gutowski and S. Kawazoe, 2011: Changes in Precipitation Intensity under Global Warming for the Upper Mississippi River Basin. *Fall Meeting*, American Geophysical Union, San Francisco, CA, December 2011.
- Maslowski, W., R. Osinski, J. Jakacki, A. Roberts, J. Clement Kinney, J.J. Cassano, M. Higgins, T. Craig, W.J. Gutowski and D.P. Lettenmaier, 2011: Modeling Coupled Feedback Processes in Arctic Climate Using Ice-Ocean and Fully Coupled Regional Climate Models. *Fall Meeting*, American Geophysical Union, San Francisco, CA, December 2011.

- Roberts, A., W. Maslowski, J. Jakacki, M. Higgins, T. Craig, J.J. Cassano, W.J. Gutowski and D.P. Lettenmaier, 2011: High frequency and wavenumber ocean-ice-atmosphere coupling in the Regional Arctic Climate Model. *Fall Meeting, American Geophysical Union, San Francisco, CA, December 2011.*
- Glisan, J., and W. J. Gutowski, 2011: Extreme Daily 2-m Temperature and Precipitation in the CORDEX Arctic domain using Pan-Arctic WRF. *WCRP Open Science Conference, Denver, CO, October 2011.*
- Gutowski, W. J., and S. Kawazoe, 2011: Regional, Extreme Daily Precipitation in Global and Regional Climate Simulations of North America. *WCRP Open Science Conference, Denver, CO, October 2011.*
- Gutowski, W. J., W. Maslowski, J. Cassano, D. Lettenmaier, T. Craig, B. Fisel, J. Glisan, M. Higgins, J. Jakacki, A. Roberts, C. Zhu, 2011: Regional Arctic Climate Model (RACM): Overview and selected results. *WCRP Open Science Conference, Denver, CO, October 2011.*
- Abiodun, B. J., W. J. Gutowski, J. M. Prusa and A. A. Abatan, 2011: CAM-EULAG: A Non-Hydrostatic Atmospheric Climate Model with Grid Stretching. *DOE Climate and Earth System Modeling PI Meeting, Washington, DC, September 2011.*
- Driver, P., B. J. Abiodun, C. J. C. Reason, W. J. Gutowski, 2011: Simulating the Effect of El Niño on Southern African Rainfall using CAM-EULAG. *DOE Climate and Earth System Modeling PI Meeting, Washington, DC, September 2011.*
- Gutowski, W. J., J. M. Prusa and P. Smolarkiewicz, 2011: Continuous Dynamic Grid Adaptation in A Global Atmospheric Model: Application and Refinement. *DOE Climate and Earth System Modeling PI Meeting, Washington, DC, September 2011.*
- Gutowski, W. J., A. A. Abatan, B. J. Abiodun and J. M. Prusa, 2011: West African Extreme Daily Precipitation in Observations and Stretched-Grid Simulations by CAM-EULAG. *DOE Climate and Earth System Modeling PI Meeting, Washington, DC, September 2011.*
- Prusa, J. M., and W. J. Gutowski, 2011: Multi-Scale Waves in Sound-proof Global Simulations with EULAG. *DOE Climate and Earth System Modeling PI Meeting, Washington, DC, September 2011.*
- Fisel, B. J., W. J. Gutowski, J. M. Hobbs and J. J. Cassano, 2011: Multi-Regime States of Arctic Atmospheric Circulation. *Eleventh I1th Conference on Polar Meteorology and Oceanography, Boston, MA, May 2011.*
- Gutowski, W.J., and the NARCCAP Team, 2011: Results from NCEP-driven RCMs. *NARCCAP Users' Meeting, Boulder, CO, April 2011.*

- Gutowski, W.J., and R. G. Jones, 2011: Metrics for CORDEX. *International Conference on the Coordinated Regional Climate Downscaling Experiment – CORDEX*, Trieste, Italy, March 2010. [[invited](#)]
- Gutowski, W.J., 2011: The Coordinated Regional Downscaling Experiment (CORDEX): Metrics for Model Evaluation & An RMIP Opportunity. *APN Workshop for Building Asian Climate Change Scenarios by Multi-Regional Climate Models Ensemble*, Melbourne, Australia, February 2011.
- Gutowski, W. J., S. Kawazoe, and the NARCCAP Team, 2010: Regional, extreme daily precipitation in NARCCAP simulations. *Fall Meeting*. American Geophysical Union, San Francisco, CA, December 2010.
- Gutowski, W.J., 2010: The Coordinated Regional Downscaling Experiment (CORDEX): A framework for mitigation and adaptation information. *Fall Meeting*, American Geophysical Union, San Francisco, CA, December 2010. [[invited](#)]
- Gutowski, W. J., S. Kawazoe, R. W. Arritt and the NARCCAP Team, 2010: Simulations of regional, extreme precipitation by the NARCCAP RCMs. *Fifth ICTP Workshop on the Theory and Use of Regional Climate Models*. International Centre for Theoretical Physics, Trieste, Italy, June 2010. [[invited](#)]
- Maslowski, W., J. Cassano, W. J. Gutowski and D. Lettenmaier, 2010: Development of a Regional Arctic Climate System Model (RACM). *US. Department of Energy Earth System Modeling Program, PI Meeting*, Gaithersburg, MD, March 2010.
- Gutowski, W. J., J. M. Prusa, P. K. Smolarkiewicz, B. J. Abiodun and A. A. Abatan, 2010: A Global Atmospheric Model: Application and Refinement. *US. Department of Energy Earth System Modeling Program, PI Meeting*, Gaithersburg, MD, March 2010.
- W. J. Gutowski, J. Cassano, M. Higgins, J. Glisan, B. Fisel and M. Seefeldt, 2010: Evolution of the Arctic Climate System as Sea Ice Changes. *State of the Arctic Conference*, Miami, FL, March 2010.
- Gutowski, W.J., 2010: Emerging Technologies in Climate Prediction. *Iowa State Climate Forum: Climate Change and Its Impact on Food Production and Biofuels*, Ames, Iowa, March 2010.
- Gutowski, W.J., B.J. Abiodun, J.M. Prusa, P.K. Smolarkiewicz, 2010: Implementation of a non-hydrostatic, adaptive-grid dynamics core in CAM. *CCSM Atmosphere Model Working Group Meeting*, National Center for Atmospheric Research, Boulder, Colorado, February 2010 [http://www.cesm.ucar.edu/working_groups/Atmosphere/]
- Gutowski, W.J., 2010: U.S. and International Opportunities for Collaborating and Moving the Science Forward. *Climate Science Workshop: Regional Climate Modelling Capacity in Ontario*, Toronto, Canada, February 2010. [[invited](#)]

- Gutowski, W.J., 2010: RMIP Opportunities: CORDEX and Beyond. *Building Asian Climate Change Scenarios by Multi-Regional Climate Models Ensemble: The First Project Workshop*, Tsukuba, Japan, January 2010.
- Gutowski, W.J., 2009: The Coordinated Regional Downscaling Experiment (CORDEX). *Fall Meeting*, American Geophysical Union, San Francisco, CA, December 2009. [[invited](#)]
- Gutowski, W.J., 2009: The Arctic Atmosphere's Water Cycle: Scales, Tales and Hail. *Synthesizing International Understanding of Changes in the Arctic Hydrological System*, Stockholm, Sweden, October 2009. [[invited keynote](#)]
- Gutowski, W. J., and the NARCCAP Team, 2009: Simulations of regional, extreme monthly precipitation by the NARCCAP RCMs. *IAMAS 2009*, Montreal, Quebec, Canada, July 2009. [presented by R. Laprise]
- Gutowski, W.J., 2009: Coordinated Regional Downscaling Experiment (CORDEX). *Arctic System Model Workshop III*, Montreal, Quebec, Canada, July 2009.
- Gutowski, W.J., 2009: Progress in analysis of climate risk at regional scale. *XXIX MIT Global Change Forum*, Rome, Italy, June 2009. [[invited](#)]
- Gutowski, W. J., and the NARCCAP Team, 2009: Simulations of regional, extreme monthly precipitation by the NARCCAP RCMs. *CRCMD Network Annual Science Meeting*, Mont Gabriel, Quebec, Canada, May 2009. [[invited](#)]
- Gutowski, W.J., B. J. Abiodun, J. M. Prusa and P. Smolarkiewicz, 2009: Development of a climate model with dynamic grid adaptation. *Second International Lund RCM Workshop*, Lund, Sweden, May 2009. [[keynote lecture](#)]
- Rockel, B., B. Geyer, W. J. Gutowski, C.G. Jones, Z. Kodhavala, I. Meinke, D. Paquin and A. Zadra, 2009: Regional climate model studies in CEOP: The Inter-Continental Transferability Study (ICTS). *Second International Lund RCM Workshop*, Lund, Sweden, May 2009.
- Cassano, J., W. Maslowski, W. J. Gutowski and D. Lettenmeier, 2009: Development of a Regional Arctic Climate System Model (RACM). *Second International Lund RCM Workshop*, Lund, Sweden, May 2009.
- Gutowski, W. J., J. M. Prusa, P. K. Smolarkiewicz, B. J. Abiodun and A. A. Abatan, 2009: A Global Atmospheric Model: Application and Refinement. *US. Department of Energy Climate Change Prediction Program, PI Meeting*, Bethesda, MD, April 2009.
- Gutowski, W. J., G. Hegerl, G. J. Holland, T. R. Knutson, L. O. Mearns, R. J. Stouffer, P. J. Webster, M. F. Wehner, and F. W. Zwiers, 2009: CCSP 3-3: Causes of Observed Changes in Extremes and Projections of Future Changes, *Twenty First Conference on*

- Climate Variability and Change*, at Annual Meeting, American Meteorological Society, Phoenix, AZ, January 2009 [[Special CCSP 3-3 Session](#)].
- Gutowski, W. J., L. O. Mearns, R. Arritt, S. Biner, D. Caya, D. Flory, R. Jones, R. Laprise, R. Leung, W. Moufouma-Okia, A. Nunez, Y. Qian, J. Roads, L. Sloan, M. Snyder, and G. Takle, 2009: Simulations of regional, extreme monthly precipitation by the NARCCAP RCMs. *Twenty First Conference on Climate Variability and Change*, at Annual Meeting, American Meteorological Society, Phoenix, AZ, January 2009.
- Gutowski, W.J., B. J. Abiodun and J. M. Prusa, 2008: Implementation of a Non-Hydrostatic, Adaptive-Grid Dynamics Core in the NCAR Community Atmospheric Model. *First International Workshop of EULAG Users*, Bad Tölz, Germany, October 2008.
- Gutowski, W.J., 2008: Coordinated Regional Climate Simulation Programs in North America. *Workshop on Future Directions for South African Regional Climate Research*, Center for High Performance Computing, Cape Town, South Africa, 4-5 August 2008. [[invited](#)].
- Gutowski, W.J., 2008: Coordination with Other Regional Multi-Model Projects. *Regional Climate Model Inter-Comparison for Asia (RMIP) – Phase III Workshop*, Institute for Atmospheric Physics, Chinese Academy of Sciences, Beijing, China, 26-28 May 2008. [[invited](#)].
- Maslowski, W., J. Cassano, W. Gutowski, and D. Lettenmaier, 2008: Regional Arctic Climate System Model (RACM) – Project Overview. *Arctic System Model Workshop*, NCAR, Boulder, Colorado, 19-21 May 2008. [[invited](#)]
- Gutowski, W.J., 2008: Regional Climate Modeling: Past, Present and Future. *Environment Roundtable*, Institute on the Environment, St. Paul Campus, University of Minnesota, 24 April, 2008. [[invited](#)]
- Gutowski, W.J, 2008: Experiences and challenges from other regional multi-model programs. *Greater Horn of Africa Regional Model Intercomparison Project (AFRMIP) - First Planning Meeting*, Rutgers University, 27-28 March 2008. [[invited](#)]
- Gutowski, W.J., 2008: Review of Multi-model RCM Projects: Recommendations for a Coordinated RCM Program in Africa & Beyond. *Fourth ICTP workshop in the Theory and Use of Regional Climate Models*, Trieste, Italy, 3-14 March 2008. [[invited](#)]
- Gutowski, W.J., R.W. Arritt, E.S. Takle, D. Flory, J. Baranick and the NARCCAP Modelers Team, 2008: NARCCAP Multi-Model Simulations: Initial NCEP-Driven Results. *NARCCAP Users' Meeting*, Boulder, CO, 14-15 February 2008.
- Gutowski, W.J., S.S. Willis, J.C. Patton, B.R. Schwedler, R.W. Arritt and E.S. Takle, 2007: Simulations of the Synoptic Climatology of Extreme Precipitation for Current and Future Climates. *Fall Meeting*, American Geophysical Union, San Francisco, CA, December 2007.

- Arritt, R.W., and the NARCCAP Team, 2007: Downscaling ENSO Events in Nested Regional Climate Models. *Fall Meeting*, American Geophysical Union, San Francisco, CA, December 2007.
- Takle, E. S., S. C. Pryor, R. Barthelmie, T. K. Andersen, J. Correia, D. Flory, R. W. Arritt, and W. J. Gutowski, Jr., 2007: Trends in US surface winds over the last quarter of the 20C: Observations and model results. Session Regional Climate I: Modeling, Detection, and Attribution of Climate Change Posters. *Fall Meeting*, American Geophysical Union, San Francisco, CA, December 2007.
- Gutowski, W.J., 2007: Baroclinic Adjustment. *Symposium Commemorating the Career of Prof. Peter Stone*, M.I.T., Cambridge, MA, December 2007. [[invited](#)]
- Gutowski, W.J., and W. A. Gallus, 2007: Simulating Strong Precipitation Events: Forecasts and Climate Projections. *International Conference on the Impacts of Extreme Weather and Climate Events on Socio-economic Activities in Africa*, Federal University of Technology, Akure, Nigeria, November, 2007. [[keynote paper](#)]
- Gutowski, W.J., J. M. Prusa and B. J. Abiodun, 2007: Continuous Dynamic Grid Adaptation In a Global Atmospheric Model – Progress. *Department of Energy SciDAC PI Meeting*, Indianapolis, IN, September 2007.
- Gutowski, W.J., 2007: Key Considerations in Linking Permafrost, Ecosystems and Run-off: Readiness of Existing Models for Coupling Land-Atmosphere Water and Energy Cycles. *Arctic System Model Workshop*, Fairbanks, AK, August 2007. [[invited](#)]
- Mearns, L O., R. W. Arritt, G. Boer, D. Caya, P. Duffy, F. Giorgi, W. J. Gutowski, I. M. Held, R. Jones, R. Laprise,, R.L. Leung, J. Pal, J. Roads, L. Sloan, R. Stouffer, G. Takle, and W. Washington, 2004: North American Regional Climate Change Assessment Program (NARCCAP). *Scientific Assembly of the International Association of Meteorology and Atmospheric Sciences (IAMAS)*, Perugia, Italy, July 2007.
- Gutowski, W.J., L.O. Mearns, R. Arritt, G. Boer, D. Caya, P. Duffy, F. Giorgi, I. M. Held, R. Jones, R. Laprise, L. R. Leung, J. Pal, J. Roads, L. Sloan, R. Stouffer, G. Takle, and W. Washington, 2007: Transferability assessment of regional climate models: Extremes. *Scientific Assembly of the International Association of Meteorology and Atmospheric Sciences (IAMAS)*, Perugia, Italy, July 2007 [[invited](#)].
- Gutowski, W.J., J. Roads, B. Rockel, R. Arritt, B. Geyer, C. Jones, I. Meinke, D. Paquin, E. Takle and U. Willén, 2007: Transferability assessment of regional climate models: Extremes. *General Assembly*, European Geophysical Union, Vienna, Austria, April 2007.
- Arritt, R.W., and the NARCCAP Team, 2007: The North American Regional Climate Change Assessment Program (NARCCAP): A multiple AOGCM and RCM climate scenario project over North America. *General Assembly*, European Geophysical Union, Vienna,

Austria, April 2007.

Gutowski, W.J., H. Wei, C.J. Vörösmarty and B. Fekete: 2007: Influence of Arctic Wetlands on Arctic Atmospheric Circulation. *Seventh International Conference on Global Change: Connection to the Arctic (GCCA-7)*, Fairbanks, AK, February 2007.

Abiodun, B., W.J. Gutowski, J. Prusa, 2007: Implementation of Grid Adaptation in CAM3: Comparison of dynamic cores. *Atmospheric Model Working Group (AMWG) Meeting*, NCAR, Boulder, January 2007.

Gutowski, W. J., S. S. Willis, J. C. Patton, B. R. Schwedler, R. W. Arritt, and E. S. Takle, 2007: Simulating the synoptic climatology of extreme precipitation events. *Bridging Studies of Weather and Climate* - Presidential Forum on *Climate Variability and Change Manifested by Changes in Weather*, at *Annual Meeting*, American Meteorological Society, San Antonio, TX, January 2007. [invited]

R. Arritt, L. O. Mearns, G. Boer, D. Caya, P. Duffy, F. Giorgi, W. J. Gutowski, I. M. Held, R. Jones, R. Laprise, R.L. Leung, J. Pal, J. Roads, L. Sloan, R. Stouffer, G. Takle, and W. Washington, 2004: North American Regional Climate Change Assessment Program (NARCCAP): Producing Regional Climate Change Projections for Impacts Studies. *Fall Meeting*, American Geophysical Union, San Francisco, CA, December 2006.

Gutowski, W. J., R.W. Arritt, K. Kozak, J. Patton, and E. S. Takle, 2006: A Possible Constraint on Precipitation Intensity Changes under Greenhouse Warming. *Earth System Science Partnership Conference: Global Environmental Change - Regional Challenges*, Beijing, China, 9 -12 November 2006.

Gutowski, W. J., 2006: Status of regional climate modeling: Some recommendations for RegCNET. *Third ICTP Workshop on the Theory and Use of Regional Climate Models*, Trieste, Italy, 29 May - 9 June 2006. [invited]

Gutowski, W. J., 2006: Status of regional climate modeling: Some recommendations for RegCNET. *First ICTP West African Workshop on Regional Climate and Impacts*, Accra, Ghana, 16-20 January 2006. [invited]

Gutowski, W. J., 2006: A precipitation problem in climate simulation (with an introduction to self-organizing maps). *First ICTP West African Workshop on Regional Climate and Impacts*, Accra, Ghana, 16-20 January 2006. [invited]

Gutowski, W. J., 2006: Precipitation changes in future U.S. climate. *First ICTP West African Workshop on Regional Climate and Impacts*, Accra, Ghana, 16-20 January 2006. [invited]

Gutowski, W.J., L.O. Mearns, R. Arritt, G. Boer, D. Caya, P. Duffy, F. Giorgi, I. M. Held, R. Jones, R. Laprise, L. R. Leung, J. Pal, J. Roads, L. Sloan, R. Stouffer, G. Takle, and W. Washington, 2005: The North American Regional Climate Change Assessment Program

- (NARCCAP): A Multiple AOGCM and RCM Climate Scenario Project over North America. *Climate Science in Support of Decision Making*, U.S. Climate Change Science Program workshop, Arlington, VA, 14-16 November 2005.
- Gutowski, W.J., L.O. Mearns, R. Arritt, G. Boer, D. Caya, P. Duffy, F. Giorgi, I. M. Held, R. Jones, R. Laprise, L. R. Leung, J. Pal, J. Roads, L. Sloan, R. Stouffer, G. Takle, and W. Washington, 2005: The North American Regional Climate Change Assessment Program (NARCCAP): A Multiple AOGCM and RCM Climate Scenario Project over North America. *Scientific Assembly of the International Association of Meteorology and Atmospheric Sciences (IAMAS)*, Beijing, China, 2-11 August 2005.
- Gutowski, W.J., and D. Flory, 2005: High-Resolution Simulation of Convective Precipitation Climatology in the Central U.S. Great Plains. *Scientific Assembly of the International Association of Meteorology and Atmospheric Sciences (IAMAS)*, Beijing, China, 2-11 August 2005.
- Takle, E., B. Rockel, W. J. Gutowski, J. Roads, J. R.W. Arritt, and I. Meinke, 2005: Transferability: A Global Approach to Regional Climate Model Simulations. *Scientific Assembly of the International Association of Meteorology and Atmospheric Sciences (IAMAS)*, Beijing, China, 2-11 August 2005.
- Gutowski, W.J., R.W. Arritt, E.S. Takle, Z. Pan, C. Anderson, K. Kozak, F. Otieno, 2005: Projected Changes in Precipitation Intensity in a Greenhouse Scenario Climate. *Scientific Assembly of the International Association of Meteorology and Atmospheric Sciences (IAMAS)*, Beijing, China, 2-11 August 2005.
- Arritt, R.W., Z. Pan, E.S. Takle, and W.J. Gutowski, 2005: Influence of land-atmosphere coupling on development and persistence of a projected climate anomaly over the central U.S. *Scientific Assembly of the International Association of Meteorology and Atmospheric Sciences (IAMAS)*, Beijing, China, 2-11 August 2005.
- Gutowski, W.J., R.W. Arritt, E.S. Takle, Z. Pan, C. Anderson, K. Kozak, F. Otieno, 2005: Regional simulation of precipitation "extremes". *North American Weather and Climate Extremes: Progress in Monitoring and Research*, July 2005, Aspen Global Change Institute, Aspen, CO.
- Gutowski, W.J., R.W. Arritt, E.S. Takle, Z. Pan, C. Anderson, K. Kozak, F. Otieno, 2005: Challenges for Predicting Seasonal Precipitation on Annual and Longer Time Scales. *Fifth Conference*, Global Energy and Water Cycle Experiment (GEWEX), Costa Mesa, CA, June 2005.
- Mearns, L.O., R. Arritt, G. Boer, D. Caya, P. Duffy, F. Giorgi, W. J. Gutowski, I. M. Held, R. Jones, R. Laprise, L. R. Leung, J. Pal, J. Roads, L. Sloan, R. Stouffer, G. Takle, and W. Washington, 2005: NARCCAP, North American Regional Climate Change Assessment Program, A Multiple AOGCM and RCM Climate Scenario Project over North America.

- Fifth Conference*, Global Energy and Water Cycle Experiment (GEWEX), Costa Mesa, CA, June 2005.
- Rockel, B., J. Roads, I. Meinke, W.J. Gutowski, R.W. Arritt, and E.S. Takle, 2005: ICTS (Inter-CSE Transferability Study) of regional climate models within CEOP. *Fifth Conference*, Global Energy and Water Cycle Experiment (GEWEX), Costa Mesa, CA, June 2005.
- Arritt, R.W., Z. Pan, E.S. Takle, and W.J. Gutowski, 2005: The role of atmosphere-land coupling in producing a climate anomaly over the central U.S. *Fifth Conference*, Global Energy and Water Cycle Experiment (GEWEX), Costa Mesa, CA, June 2005.
- Gutowski, W., and the NARCCAP Team, 2005: The North American Regional Climate Change Assessment Program (NARCCAP): A multiple AOGCM and RCM climate scenario project over North America. *General Assembly*, European Geophysical Union, Vienna, Austria, April 2005.
- Arritt, R.W., and the NARCCAP Team, 2005: Simulation of the North American monsoon in NARCCAP Experiment 0. *General Assembly*, European Geophysical Union, Vienna, Austria, April 2005.
- Takle, E., B. Rockel, W. J. Gutowski, J. Roads, J. R.W. Arritt, and I. Meinke, 2005: Transferability: Advancing the Science of Hydrometeorology. *General Assembly*, European Geophysical Union, Vienna, Austria, April 2005. [solicited]
- Rockel, B., J. Roads, I. Meinke, W.J. Gutowski, R.W. Arritt, and E.S. Takle, 2005: ICTS (Inter-CSE Transferability Study) of regional climate models within CEOP/GEWEX. *General Assembly*, European Geophysical Union, Vienna, Austria, April 2005.
- Gutowski, W.J., 2005: Status of regional climate modeling. *Workshop on Research Needs and Directions of Regional Climate Modeling Using WRF and CCSM*, NCAR CGD and MMM Divisions, Boulder, CO, 22-23 March 2005. [invited]
- Arritt, R.W., C. J. Anderson, W. J. Gutowski, E. S. Takle, D. Caya, C. G. Jones, J. J. Katzfey, J. W. Larson, R. Laprise, J. L. McGregor, J. Roads, and J. Taylor, 2005: Influences on predictability in multi-year regional climate simulations for the continental United States. *Annual Meeting*, American Meteorological Society, San Diego, CA, January 2005.
- Cassano, J.J., W. J. Gutowski, M. J. Shaw, and C. S. Takeuchi, 2005: Atmospheric modeling over the Mackenzie, Kuparuk and Lena watersheds: A contribution to the NSF ARCSS Freshwater Initiative. *Annual Meeting*, American Meteorological Society, San Diego, CA, January 2005.
- W. J. Gutowski, R. Arritt, S. Biner, G. Boer, D. Caya, P. Duffy, M. Giguere, F. Giorgi, I. Held, R. Jones, R. Laprise, R. Leung, L. Mearns, A. Nunes, J. Pal, Y. Qian, J. Roads, L. Sloan, M. Snyder, R. Stouffer, E. Takle, and W. Washington, 2005: Initial results from the North American Regional Climate Change Assessment Program. *Annual Meeting*, American Meteorological Society, San Diego, CA, January 2005.

- Mearns, L.O., R. Arritt, G. Boer, D. Caya, P. Duffy, F. Giorgi, W. J. Gutowski, I. M. Held, R. Jones, R. Laprise, L. R. Leung, J. Pal, J. Roads, L. Sloan, R. Stouffer, G. Takle, and W. Washington, 2005: NARCCAP, North American Regional Climate Change Assessment Program, A Multiple AOGCM and RCM Climate Scenario Project over North America. *Annual Meeting*, American Meteorological Society, San Diego, CA, January 2005.
- Rockel, B., J. Roads, I. Meinke, W. J. Gutowski, R. Arritt, and E. S. Takle, 2005: ICTS (Inter-CSE Transferability Study): an application of CEOP data. *Annual Meeting*, American Meteorological Society, San Diego, CA, January 2005.
- Takle, E.S., B. Rockel, W. J. Gutowski, Jr., J. O. Roads, I. Meinke, and R. W. Arritt, 2005: Transferability experiments for advancing the GEWEX agenda. *Annual Meeting*, American Meteorological Society, San Diego, CA, January 2005.
- Leung, R.L., L O. Mearns, R. Arritt, G. Boer, D. Caya, P. Duffy, F. Giorgi, W. J. Gutowski, I. M. Held, R. Jones, R. Laprise,, J. Pal, J. Roads, L. Sloan, R. Stouffer, G. Takle, and W. Washington, 2004: NARCCAP, North American Regional Climate Change Assessment Program, A Multiple AOGCM and RCM Climate Scenario Project over North America. *Fall Meeting*, American Geophysical Union,, San Francisco, CA, December 2004.
- John J. Cassano, W. J. Gutowski, M. J. Shaw, and C. S. Takeuchi, 2004: Atmospheric modeling over the Mackenzie, Kuparuk and Lena watersheds: A contribution to the NSF ARCSS Freshwater Initiative. *Fall Meeting*, American Geophysical Union, San Francisco, CA, December 2004.
- Takle, E.S., B. Rockel, W. J. Gutowski, Jr., J. O. Roads, I. Meinke, and R. W. Arritt, 2004: Transferability experiments for advancing the GEWEX agenda. *Fall Meeting*, American Geophysical Union,, San Francisco, CA, December 2004.
- Takle, E.S., Rockel, B., W. J. Gutowski, and R. W. Arritt, 2004: Transferability Working Group. *Tenth Annual Meeting of the GEWEX Hydrometeorology Panel*, Montevideo, Uruguay, 13-16 September 2004.
- Gutowski, W. J., and D. Flory, 2004: High-resolution climate simulation for regional hydrology. *GAPP Science Team Meeting*, Boulder, Colorado, 30-31 August 2004.
- Hay, L.E., M.P. Clark, M. Pagowski, G.H. Leavesley, G.A. Grell and W.J. Gutowski, Jr., 2004: One-way coupling of an atmospheric and a hydrologic model in Colorado. *GAPP Science Team Meeting*, Boulder, Colorado, 30-31 August 2004.
- Gutowski, W. J., 2004: Coupled Atmosphere-Aquifer Feedbacks in a Kansas Grassland. *Annual Meeting*, American Quaternary Association, Lawrence, KS, 26-28 June 2004. [invited]
- Otieno, F., and W. J. Gutowski, 2004: The role of potential regional feedbacks in the hydroclimate of the Midwest at 6k BP. *Annual Meeting*, American Quaternary Association, Lawrence, KS, 26-28 June 2004.

- Gutowski, W. J., R. W. Arritt, and E. S. Takle, 2004: Project to Intercompare Regional Climate Simulations (PIRCS): Update, Lessons and Suggestions for a California Regional Assessment. *California Energy Commission Workshop on Intercomparison of Simulations of California's Climate*, Sacramento, CA, 11 June 2004. [[invited](#)]
- Gutowski, W. J., R. W. Arritt, and E. S. Takle, 2004: Transferability experiments with RegCM3. *Second ICTP Workshop on the Theory and Use of Regional Climate Models*, Trieste, Italy, 31 May - 9 June 2004. [[invited](#)]
- Hinzman, L.D., J.J. Cassano, M.A. Nolan, D.L. Kane, W. Gutowski, K. Yoshikawa, P. Marsh, Y. Kodama, and R. Janowicz, 2004: Detection and attribution of changes in the hydrologic regimes of the Mackenzie, Kuparuk and Lena river basins. NSF ARCSS FWI All-hands Meeting, Woods Hole, MA, 4-7 May 2004.
- Cassano, J.J., W.J. Gutowski, L.D. Hinzman, Y. Kodama, and C. Takeuchi, 2004: Atmospheric modeling over the Mackenzie, Kuparuk and Lena Watersheds: A contribution to the NSF ARCSS Freshwater Initiative. NSF ARCSS FWI All-hands Meeting, Woods Hole, MA, 4-7 May 2004.
- Takle, E. S., W. J. Gutowski, Jr., and R. W. Arritt, 2004: Transferability experiments for addressing challenges to understanding global water and energy budgets. *Extended Abstracts - Regional-Scale Climate Modeling Workshop*. World Climate Research Programme. Lund eRep, Phys. Geogr., No 5, May 2005. pp 120-121. [Available online at <http://www.nateko.lu.se/Elibrary/LeRPG/5/LeRPG5Article.pdf>]
- Tadross, M., B. Hewitson, C. Jack, W. J. Gutowski and M. New, 2004: RCM climatologies and GCM-forced changes. *Second AIACC Regional Workshop for Africa and Indian Ocean Islands*, Dakar, Senegal, 24-27 March 2004. [[invited](#)]
- Prusa, J., and W.J. Gutowski, 2004: Continuous Dynamic Grid Adaptation in a Global Atmospheric Model, *Department of Energy SciDAC PI Meeting*, Charleston, SC, 22-24 March 2004.
- Takle, E. S., D. Herzmann, W. J. Gutowski and D. Flory, 2004: Online portfolios: Applications for university education and research. *Annual Meeting*, American Meteorological Society, Seattle, WA, January 2004.
- R.W. Arritt, C. J. Anderson¹, E. S. Takle, Z. Pan, W. J. Gutowski, Jr., F. O. Otieno, R. da Silva, D. Caya, J. H. Christensen, D. Lüthi¹², M. A. Gaertner, C. Gallardo, S.-Y. Hong, C. Jones, H.-M.H. Juang, J. J. Katzfey, W. M. Lapenta, R. Laprise, J. W. Larson, G. E. Liston, J. L. McGregor, R. A. Pielke, Sr., J. O. Roads, J. A. Taylor, 2004: Ensemble methods for seasonal limited area forecasts. *Annual Meeting*, American Meteorological Society, Seattle, WA, January 2004.

- Gutowski, W. J., 2003: Atmospheric modeling challenges for U.S. and African climate. *CLIVAR/PAGES/IPCC Workshop: A multi-millennia perspective on drought and implications for the future*, Tucson, Arizona, 18-21 November 2003. [invited participant]
- Roy, P. Person, M. Zableiski, V., Ito, E., Winter, T., Rosenberry, D., Cohen, D., and W. Gutowski, 2003: The role of aquifers in paleoclimatic reconstructions of the Crow Wing Watershed, Minnesota, *Geological Society of American Annual Meeting*, Nov. 2-5. 84-11.
- Gutowski, W. J., 2003: The problem of drizzle in RMIP and other regional climate simulations. *Third Workshop of Regional Climate Model Studies*, Shanghai, China, 27-29 August 2003. [invited]
- Lee, D.-K., W. J. Gutowski, M.-S. Suh, C.-J. Kim and H.-S. Kang, 2003: Intercomparison of summer precipitation between RegCM2, SNURCM and ISUMM5 in the RMIP-I simulation. *Third Workshop of Regional Climate Model Studies*, Shanghai, China, 27-29 August 2003.
- Gutowski, W. J., 2003: Some GAPP challenges posed by climate modeling. *GAPP Science Team Meeting*, Seattle, Washington, 21-23 July 2003. [invited]
- Gutowski, W. J., and Coauthors, 2003: Diagnosis of precipitation variability in nested regional climate models. *GAPP Science Team Meeting*, Seattle, Washington, 21-23 July 2003.
- Gutowski, W. J., 2003: Climate variability and change. *ISU Workshop on Complexity in the Environment*, Ames, Iowa, 16 July 2003. [invited]
- Gutowski, W. J., and D. Flory, 2003: High-resolution RCM simulation of Kansas convective storms: Preliminary results. *ICTP Workshop on the Theory and Use of Regional Climate Models*, Trieste, Italy, 26 May - 6 June 2003.
- Prusa, J., and W.J. Gutowski, 2003: Continuous Dynamic Grid Adaptation in a Global Atmospheric Model, *Department of Energy Community Climate Prediction Program Meeting*, Charleston, SC, 17-19 March 2003.
- Gutowski, W. J., H. Wei, C. Vörösmarty and B. Fekete, 2002: Dynamic influence of wetlands on Arctic climate revealed by ensemble RCM simulation. *Second ICTP Conference on Detection and Modeling of Regional Climate Change*, Trieste, Italy, 30 September - 4 October 2002.
- Gutowski, W. J., Z. Pan, F. Otieno, R. W. Arritt and E. S. Takle, 2002: Analysis of REGM2 precipitation error using self-organizing maps and land-atmosphere water budgets. *Second ICTP Conference on Detection and Modeling of Regional Climate Change*, Trieste, Italy, 30 September - 4 October 2002.

- Prusa, J. M., and W. J. Gutowski, 2002: Continuous dynamic grid adaptation for regional simulation in a global atmospheric model. *Second ICTP Conference on Detection and Modeling of Regional Climate Change*. Trieste, Italy, 30 September - 4 October 2002.
- Pan, Z., R. W. Arritt, W. J. Gutowski, E.S. Takle, C.J. Anderson, F. Otieno, R. da Silva, and PIRCS modelers, 2002: On PIRCS Models' Consistency of Dynamics with Precipitation, *Thirteenth Symposium on Global Change and Climate Variations*, American Meteorological Society, Orlando, FL, 14-18 January 2002.
- Gutowski, W. J., 2001: Self-Organizing Maps (SOMs): Proposed RMIP Analysis. *Regional Model Intercomparison Project, Science Team Meeting*, Kobe, Japan, 11-13 December 2001. [invited]
- Gutowski, W. J., 2001: Assessing the water cycle in regional climate simulation. *Annual Meeting, South African Society for Atmospheric Science*, Cape Town, South Africa, 6-7 September 2001. [invited]
- Pan, Z., S.E. Bryant, E.S. Takle, C.J. Anderson, W.J. Gutowski, R. W. Arritt, 2001: Verification and future-scenario projections of snow depth and soil moisture in a regional climate model, *8th Scientific Assembly of IAMAS*, Innsbruck, Austria, 10-18 July 2001.
- Arritt, R. W., C.J. Anderson, W.J. Gutowski, E.S. Takle, Z. Pan, F. Otieno, M. De Castro, D. Caya, S.-C. Chen, J.H. Christensen, 2001: A multi-model regional climate ensemble for the 1993 flood over the central United States, *8th Scientific Assembly of IAMAS*, Innsbruck, Austria, 10-18 July 2001.
- Bryant, S. E., E. S. Takle, Z. Pan, C. J. Anderson, W. J. Gutowski, Jr., and R. W. Arritt, 2001: Evaluation of precipitation, snow-water equivalent, daily max/min temperatures and climate feedback in a regional climate model. *European Geophysical Society XXVI General Assembly*. Nice France, 25 - 30 March 2001.
- Pan, Z., R.W. Arritt, J.H. Christensen, W.J. Gutowski, and E.S. Takle, 2001: Evaluation of extreme precipitation simulation in regional climate models. *European Geophysical Society XXVI General Assembly*. Nice France, 25 - 30 March 2001.
- Pan, Z., E.S. Takle, R. W. Arritt, and W. J. Gutowski, Jr., 2001: Changes in snow depth and soil moisture from regional model simulations of future scenario climates. *12th Symposium on Global Change Studies*, Amer. Meteorol. Soc., Albuquerque, NM
- Miller, N. I., W.J. Gutowski Jr., Z. Pan, J. H. Christensen, R.K. Hartman, R.W. Arritt, E. S. Takle, and O. B. Christensen, 2001: Assessing California Streamflow under present day and a 2040 to 2049 climate change scenario. *12th Symposium on Global Change Studies*, Amer. Meteorol. Soc., Albuquerque, NM
- Kim, J., N. L. Miller, T.-K. Kim, R. W. Arritt, W. J. Gutowski, Jr., and E. S. Takle, 2001: Downscaled climate change scenario for the western U. S. using MAS-SPS Model nested

- within the HadCM2 scenario. *12th Symposium on Global Change Studies*, Amer. Meteor. Soc., Albuquerque, NM
- Takle, E. S., Z. Pan, R. W. Arritt, and W. J. Gutowski, Jr., 2001: Changes in snow depth and soil moisture from regional climate model simulations of future scenario climates. *12th Symposium on Global Change Studies*, Amer. Meteor. Soc., Albuquerque, NM.
- Arritt, R. W., R. Wilby, L. E. Hay, W. J. Gutowski, Jr., C. J. Anderson, M. P. Clark, G. H. Leavesley, Z. Pan, R. Silva, and E. S. Takle, 2000: Comparison of statistical and dynamical downscaling for evaluating climate change impacts on water resources. *International Workshop on Climatic Change: Implications for the Hydrological Cycle and for Water Management*. Wengen Switzerland.
- Gutowski, W. J., H. Wei, C. J. Vorosmarty, and B. Fekete, 2000: Regional Climate Simulation for the Pan-Arctic Region using MM5: Issues for pan-Arctic System Hydrology. *Workshop on Arctic System Hydrology*, National Center for Ecological Analysis and Synthesis, 18-20 September 2000, Santa Barbara, California. [[invited](#)]
- Gutowski, W. J., R. W. Arritt, E. S. Takle and Z. Pan, 2000: Project to Intercompare Regional Climate Simulations (PIRCS): Lessons and Suggestions for ARCMIP. *Arctic Model Intercomparison Project (ARCMIP) Planning Workshop*, University of Alaska, 13-15 September 2000, Fairbanks, Alaska. [[invited](#)]
- Gutowski, W. J., H. Wei, C. J. Vorosmarty, and B. Fekete, 2000: Regional Climate Simulation for the Pan-Arctic Region using MM5. *Arctic Model Intercomparison Project (ARCMIP) Planning Workshop*, University of Alaska, 13-15 September 2000, Fairbanks, Alaska. [[invited](#)]
- Gutowski, W. J., R. W. Arritt, E. S. Takle and Z. Pan, 2000: Project to Intercompare Regional Climate Simulations (PIRCS): Lessons and Suggestions for an Asian RMIP. *Regional Climate Model Inter-comparison for Asia: Inception Workshop*, Yonsei University, 26-29 June 2000, Seoul Korea. [[invited](#)]
- Gutowski, W. J., H. Wei, C. J. Vorosmarty, and B. Fekete, 2000: Regional Climate Simulation for the Pan-Arctic Region using MM5. *MM5 Users Workshop*, National Center for Atmospheric Research, 21-23 June 2000, Boulder, Colorado.
- Gutowski, W. J., Pan, Z., C. J. Anderson, R. W. Arritt, F. Otieno, E. S. Takle, J. H. Christensen, and O. B. Christensen, 2000: What RCM Data Are Available for California Impacts Modeling? (How Good Is It?). *California Energy Commission Workshop on Climate Change Scenarios for California*, California Energy Commission, 12 – 13 June 2000, Sacramento, California. [[invited](#)]
- Gutowski, W. J., C. J. Vorosmarty, H. Wei, and B. Fekete, 2000: Simulation of the Coupled Land-Atmosphere Hydrologic Cycle. *Climate Change Prediction Program Meeting*, 27-29 March 2000, Bethesda, Maryland.

- Arritt, R. W., C. J. Anderson, W. J. Gutowski, Jr., Z. Pan, E. S. Takle, and PIRCS Investigators, 2000: Project to Intercompare Regional Climate Simulations (PIRCS): Simulation of the 1993 Flood over the central U.S. *15th Conference on Hydrology*, American Meteorological Society, 9 - 16 January 2000, Long Beach, California.
- Gutowski, W. J., Jr., R. Wilby, L. E. Hay, C.J. Anderson, R.W. Arritt, M. C. Clark, G. H. Leavesley, Z. Pan, R. Silva, E. S. Takle, 2000: Statistical and Dynamical Downscaling of Global Model Output for U.S. National Assessment Hydrological Analyses. *11th Symposium on Global Change Studies*, American Meteorological Society, 9 - 16 January 2000, Long Beach, California.
- Pan, Z., J. H. Christensen, R. W. Arritt, W. J. Gutowski, Jr., and E. S. Takle, 2000: Ten-Year U.S. Regional Climate Simulations for Impact Assessments. *11th Symposium on Global Change Studies*, American Meteorological Society, 9 - 16 January 2000, Long Beach, California.
- Gutowski, W. J., 1999: Development of Regional Climate Modeling for Southern Africa: The Role for IITAP. *Annual Meeting, South African Society of Atmospheric Scientists*, 18-19 November 1999, Richards Bay, South Africa. [[invited](#)]
- Gutowski, W. J., R. W. Arritt, E. S. Takle and Z. Pan, 1999: Lessons learned from PIRCS *Workshop on Regional Climate Prediction and Downscaling Techniques for South America*, 8-10 September 1999, Petrópolis, Rio de Janeiro, Brazil. [[invited](#)]
- Gutowski, W. J., R. L. Wilby, L. E. Hay, E. S. Takle, R.W. Arritt, Z. Pan, 1999: Statistical versus Dynamical Downscaling for Hydrologic Analysis. *Workshop on Regional Climate Prediction and Downscaling Techniques for South America*, 8-10 September 1999, Petrópolis, Rio de Janeiro, Brazil. [[invited](#)]
- Gutowski, W. J., R. L. Wilby, L. E. Hay, E. S. Takle, R.W. Arritt, Z. Pan, C.J. Anderson, R. Silva, D. Caya, S.-C. Chen, J.H. Christensen, S.-Y. Hong, H.-M. H. Juang, J.J. Katzfey, W.M. Lapenta, R. Laprise, G. Liston, P. Lopez, J. McGregor, R. Pielke, Sr., and J.O. Roads, 1999: A Comparison of Statistical and Dynamical Downscaling for Hydrologic Analysis. *The Physics of Climate Change: A Regional Perspective*, 9 - 12 June 1999, Trieste, Italy
- Takle, E. S., Arritt, R.W., W.J. Gutowski, Jr., Z. Pan, C.J. Anderson, R. Silva, D. Caya, S.-C. Chen, J.H. Christensen, S.-Y. Hong, H.-M. H. Juang, J.J. Katzfey, W.M. Lapenta, R. Laprise, P. Lopez, J. McGregor and J.O. Roads, 1999: Project to Intercompare Regional Climate Simulations (PIRCS): Description and Initial Results *The Physics of Climate Change: A Regional Perspective*, 9 - 12 June 1999, Trieste, Italy.

- Pan, Z., J.H. Christensen, R.W. Arritt, W. J. Gutowski, Jr., E. S. Takle, and C.J. Anderson, 1999: Assessment of Regional Climate Change Simulation for Impacts Analysis. *The Physics of Climate Change: A Regional Perspective*, 9 - 12 June 1999, Trieste, Italy.
- Gutowski, W. J., R. L. Wilby, E. S. Takle, R.W. Arritt, Z. Pan, C.J. Anderson, R. Silva, D. Caya, S.-C. Chen, J.H. Christensen, S.-Y. Hong, H.-M. H. Juang, J.J. Katzfey, W.M. Lapenta, R. Laprise, G. Liston, P. Lopez, J. McGregor, R. Pielke, Sr., and J.O. Roads, 1999: A Comparison of Statistical and Dynamical Downscaling for Hydrologic Analysis. *American Geophysical Union - Spring Meeting*, 1 - 4 June 1999, Boston, Massachusetts.
- Gutowski, W. J., Z. Pan, F. Otieno, R. W. Arritt, E. S. Takle, 1999: Investigation of Seasonal Predictability of Precipitation for the Central United States, *PI Meeting, GEWEX Continental International Project*, 17-18 May, 1999, College Park, Maryland.
- Arritt, R.W., W.J. Gutowski, Jr., E.S. Takle, Z. Pan, C.J. Anderson, R. Silva, D. Caya, S.-C. Chen, J.H. Christensen, S.-Y. Hong, H.-M. H. Juang, J.J. Katzfey, W.M. Lapenta, R. Laprise, P. Lopez, J. McGregor and J.O. Roads, 1999: Project to Intercompare Regional Climate Simulations (PIRCS): Preliminary analyses of precipitation processes. *14th Conference on Hydrology*, American Meteorological Society, 10-15 January 1999, Dallas, Texas.
- Arritt, R.W., W.J. Gutowski, Jr., E.S. Takle, Z. Pan, C.J. Anderson, R. Silva, D. Caya, S.-C. Chen, J.H. Christensen, S.-Y. Hong, H.-M. H. Juang, J.J. Katzfey, W.M. Lapenta, R. Laprise, P. Lopez, J. McGregor and J.O. Roads, 1999: Project to Intercompare Regional Climate Simulations (PIRCS): Preliminary results for the 1988 Midwest drought. *10th Symposium on Global Change Studies*, American Meteorological Society, 10-15 January 1999, Dallas, Texas.
- Gutowski, W. J., R. W. Arritt, E. S. Takle and Z. Pan, 1998: Project to Intercompare Regional Climate Simulations (PIRCS). *Fourteenth Session - Working Group on Numerical Experimentation of the World Climate Research Programme*, 3-6 November 1998, Montreal, Canada. [\[invited\]](#)
- Arritt, R.W., W.J. Gutowski, Jr., E.S. Takle, Z. Pan, C.J. Anderson, R. Silva, D. Caya, S.-C. Chen, J.H. Christensen, S.-Y. Hong, H.-M. H. Juang, J.J. Katzfey, W.M. Lapenta, R. Laprise, P. Lopez, J. McGregor and J.O. Roads, 1998: Use of limited area models to develop regional climate scenarios. *2nd International Specialty Conference on Global Climate Change*, Air and Waste Management Association, 13-15 October 1998, Washington, DC.
- Arritt, R. A., E. S. Takle, W. J. Gutowski, J. H. Christensen, 1998: Regional climate change for impacts analysis: evaluating ensemble projections. *Second International Climate and History Conference*, 7 - 11 Sept. 1998, Univ. East Anglia, Norwich, UK.

- Takle, E. S., Z. Pan, R. W. Arritt, and W. J. Gutowski, Jr., 1998: Regional climate scenarios for water resources research and impact assessment. *Second International Conference on Climate and Water*. Vol. 1, 1-9. 17-20 August, Espoo, Finland.
- Gutowski, W., 1998: Ensemble Seasonal Forecasting for Southern Africa using Advanced Computing. *Workshop on the Development of Science and Technology in Africa*, 27 – 31 July 1998, Durban, South Africa. [Invited]
- Christensen, J H., P. Lopez, W. J. Gutowski. R. W. Arritt and E. S. Takle, 1998: On the role of a consistent treatment of physical parameterization in dynamical down scaling simulations. *Rosby Symposium*, June 1999, Stockholm, Sweden.
- Otles, Z. and W. J. Gutowski, Jr., 1998: Effects of atmospheric stability on Penman-Monteith evaporation rates. *GCIP Mississippi River Climate Conference*. 8-12 June 1998, St. Louis, Missouri.
- Pan, Z. W. J. Gutowski, Jr., Takle, E. S. and R. W. Arritt, 1998: Regional Model Simulation of Interannual Variability Impacts on Atmospheric-Hydrologic Coupling in the Mississippi Basin. *GCIP Mississippi River Climate Conference*. 8-12 June 1998, St. Louis, Missouri.
- Arritt, R. W., W. J. Gutowski, E. S. Takle, Z. Pan, 1998: Regional climate modeling. *Hydro Workshop*, March 1998, Boulder, Colorado. [Invited].
- Gutowski, W. J., R. W. Arritt, E. S. Takle and Z. Pan, 1998: Project to Intercompare Regional Climate Simulations (PIRCS). *MERCURE project workshop*, 9-10 February 1998, Toulouse, France.
- E. S. Takle, Pan, Z., W. J. Gutowski, R. W. Arritt, 1998: Regional Climate Simulation for Impacts Assessment. *ACACIA Executive Board Meeting*, 16 January 1998, Phoenix, AZ.
- Pan, Z., E. Takle, W. Gutowski and R. Turner, 1998: Long simulation of regional climate as a sequence of short segments. *Ninth Symposium on Global Change Studies, 78th AMS Annual Meeting*, 11 - 16 January 1998, Phoenix, Arizona.
- Pan, Z., W. J. Gutowski, W. J., R. W. Arritt, E. S. Takle, D. P. Todey, 1997: Regional Climate Simulation for PIRCS. *American Geophysical Union - Fall Meeting*, 8 - 12 December 1998, San Francisco, California.
- Gutowski, W. J., Y. Chen and Z. Ötles, 1997: Atmospheric water transport in NCEP/NCAR reanalyses versus river discharge. *First International Conference on Reanalyses*, 27-31 October 1997, Silver Spring, Maryland.
- Gutowski, W. J., 1997: *Statistical Downscaling Workshop*, 5 November 1997, Boulder, Colorado. [Invited]

- Gutowski, W. J., E. S. Takle, and R. W. Arritt, 1997: Regional climate modeling in CLIVAR: Recommendations. *CLIVAR Scientific Steering Group - Sixth Session*, 28 April - 2 May 1997, Washington, DC. [Invited]
- Gutowski, W. J., and W. Jiang, 1997: Coupling of baroclinic waves, convection and surface fluxes in the Southern Hemisphere's extratropics. *Preprints: Fifth International Conference on Southern Hemisphere Meteorology and Oceanography*, 7-11 April 1997, Pretoria, South Africa, 43-44.
- Gutowski, W. J., E. S. Takle, R. W. Arritt, W. A. Gallus, Jr., R. W. Turner, and Z. Pan, 1997: Project to Intercompare Regional Climate Simulations (PIRCS). *Preprints: Fifth International Conference on Southern Hemisphere Meteorology and Oceanography*, 7-11 April 1997, Pretoria, South Africa, 276-277.
- Gutowski, W. J., and K. Boyd, 1997: Spatial structure of water-vapor extrema over Southern Hemisphere oceans. *Preprints: Fifth International Conference on Southern Hemisphere Meteorology and Oceanography*, 7-11 April 1997, Pretoria, South Africa, 77-78.
- Gutowski, W. J., C. J. Vorosmarty, M. Person, Z. Otles, B. Fekete and J. York, 1997: Closing the water budget: Challenges and progress. *CHAMMP Science Team Meeting*, 3 - 5 March 1997, San Antonio, Texas.
- Gutowski, W. J., C. J. Vorosmarty, M. Person, Z. Otles, B. Fekete and J. York, 1997: Regional modeling of coupled land-atmosphere hydrologic feedbacks. *CHAMMP Science Team Meeting*, 3 - 5 March 1997, San Antonio, Texas.
- Gutowski, W. J., Ötles, Z. and Y. Chen, 1997: Effect of ocean-surface heterogeneity on climate simulation. *CHAMMP Science Team Meeting*, 3 - 5 March 1997, San Antonio, Texas.
- Chen, Y., W. J. Gutowski and Z. Ötles, 1997: Atmospheric water transport in NCEP reanalyses: Comparison with river discharge. *Conference on Hydrology, 77 Annual Meeting, American Meteorological Society*, 2 - 7 February 1997, Long Beach, California.
- Gutowski, W. J., E. S. Takle, R. W. Arritt, W. A. Gallus, Jr., R. W. Turner, and Z. Pan, 1997: Project to Intercompare Regional Climate Simulations (PIRCS). *Conference on Hydrology, 77 Annual Meeting, American Meteorological Society*, 2 - 7 February 1997, Long Beach, California.
- Gutowski, W. J., C. J. Vorosmarty, M. Person, Z. Otles, B. Fekete and J. York, 1997: Regional modeling of coupled land-atmosphere hydrologic feedbacks. *Conference on Hydrology, 77 Annual Meeting, American Meteorological Society*, 2 - 7 February 1997, Long Beach, California.
- Iselin, J. P., and W. J. Gutowski, 1997: Thin layers of water vapor in STORM-FEST observations: Challenges for observing and modeling atmospheric water transport.

- Conference on Hydrology, 77 Annual Meeting, American Meteorological Society, 2 - 7 February 1997, Long Beach, California.*
- Otles, Z., and W. J. Gutowski, 1997: Effect of atmospheric surface-layer stability on Penman-Monteith evapotranspiration rate. *Conference on Hydrology, 77 Annual Meeting, American Meteorological Society, 2 - 7 February 1997, Long Beach, California.*
- Gutowski, W. J., E. S. Takle, R. W. Arritt, 1996: Planned Mesoscale Climate Simulations for TAR Impacts Assessments. *Interfacing Mesoscale Climate Models with Impacts Assessment: A Workshop, 5 - 6 December 1996, Boulder, Colorado.*
- Gutowski, W.J., C. Vörösmarty, M. Person, Z. Ötles, B. Fekete and J. York, 1996: Regional modeling of coupled land-atmosphere hydrologic processes. *Second International Scientific Conference on the Global Energy and Water Cycle, 17 June - 20 June 1996, Washington, DC.*
- Takle, E. S., W. J. Gutowski, R. W. Arritt, W. A. Gallus, R. W. Turner and Z. Pan, 1996: Project to Intercompare Regional Climate Simulations (PIRCS). *Second International Scientific Conference on the Global Energy and Water Cycle, 17 June - 20 June 1996, Washington, DC.*
- Gutowski, W. J., 1996: Project to Intercompare Regional Climate Simulations (PIRCS). *Workshop on Climate Modeling, Inter-American Institute for Global Change Research & National Center for Atmospheric Research, 5 - 8 March 1996, Boulder, Colorado.*
[Invited]
- Chen, Y., Ötles, Z. and W. J. Gutowski, 1996: Effect of ocean-surface heterogeneity on climate simulation. *Conference on the Global Ocean, Atmosphere, Land System (GOALS), 76th Annual Meeting, American Meteorological Society, 29 January - 2 February 1996, Atlanta, Georgia.*
- Gutowski, W. J., and E. S. Takle, 1995: Project to Intercompare Regional Climate Simulations (PIRCS). Eleventh Session, Working Group on Numerical Experimentation, World Climate Research Programme, 30 October- 3 November 1995, Reading, England.
[Invited]
- Gutowski, W. J., C. J. Vorosmarty, M. Person, Z. Otles and B. Fekete, 1995: Modeling coupled land-atmosphere hydrologic processes, *First GAIM Science Conference, 25-29 September 1995, Garmisch-Partenkirchen, Germany.*
- Jiang, W., W. J. Gutowski and L. E. Branscome, 1995: Suppression of deep convection by baroclinic waves. *Tenth Conference on Atmospheric and Oceanic Waves and Stability, 5-9 June 1995, Big Sky, Montana.*

- Gutowski, W. J., C. J. Vorosmarty, M. Person, Z. Otles and B. Fekete, 1995: Regional modeling of coupled land-atmosphere hydrologic processes, *Conference on Hydrology, 75th Annual Meeting, American Meteorological Society*, 15-20 January 1995, Dallas, Texas.
- Gutowski, W. J., Z. Otles, C. J. Vorosmarty and M. Person, 1994: Coupling of atmospheric convection and surface hydrologic processes in a heterogeneous domain, *GCIP/MAGS Workshop on Scaling in Hydrometeorological/Hydrologic Processes and Models*, 23-19 September 1994, Victoria, British Columbia.
- Gutowski, W. J., 1994: Regional modeling of the coupled land-atmosphere hydrologic cycle, *Fifth PRC/USA Workshop on Climate Studies*, 1 - 4 August 1994, Beijing, People's Republic of China. [Invited]
- Gutowski, W. J., C. J. Vorosmarty, M. Person, B. Fekete, Z. Otles and D. Slawinski, 1994: Heterogeneous coupling of land-atmosphere hydrologic processes. *CHAMMP Science Team and Model Development Meeting*. 25-29 April 1994, Albuquerque, New Mexico.
- Nendick, P.C., and W. J. Gutowski, 1994: Impact of CO₂ doubling in GCMs on eddy-driven heat and water cycles, *106th Annual Meeting, Iowa Academy of Science*, 22-23 April 1994, Davenport, Iowa.
- Gutowski, W. J., E. A. Uken, and K. A. Jovaag, 1994: Remote sensing of the atmosphere's hydrologic cycle, *106th Annual Meeting, Iowa Academy of Science*, 22-23 April 1994, Davenport, Iowa.
- Gutowski, W. J., C. J. Vorosmarty, M. Person, B. Fekete, Z. Otles and D. Slawinski, 1994: Coupled land-atmosphere hydrology in a heterogeneous domain. *Fifth Symposium on Global Change Studies*. 23-28 January 1994, Nashville, Tennessee.
- Vorosmarty, C. J., W. J. Gutowski, M. Person, B. Fekete, Z. Otles, D. Slawinski, 1993: Coupled land-atmosphere hydrology models: the drainage basin perspective. *Workshop of Scaling in Hydrology*. November 1993, Robertson, Australia.
- Vorosmarty, C. J., W. J. Gutowski, M. Person, B. Fekete, Z. Otles, D. Slawinski, 1993: Coupled land-atmosphere hydrology models: the drainage basin perspective. *Workshop on the Biosphere-Atmosphere Field Experiment in Amazonia*. 8-11 September 1993, Sao Jose dos Campos, Brazil.
- Vorosmarty, C. J., W. J. Gutowski, M. Person, T.-C. Chen and D. Case, 1993: Linked atmosphere-hydrology models at the macro-scale, *IAHS Symposium on Macroscale Modeling of the Hydrosphere*, 11-23 July 1993, Yokohama, Japan. [Keynote address]
- Gutowski, W. J., and L. E. Branscome, 1993: Hydrologic and radiative feedbacks on extratropical transient eddies: Implications of global warming, *Seventeenth Stanstead Seminar: The role of large-scale, extratropical dynamics in global climate change*, 13-18 June 1993, Lennoxville, Québec, Canada.

- Gutowski, W. J., and E. A. Uken, 1993: Synoptic Dynamics of the Southern Hemisphere, Extratropical Water Vapor Cycle Revealed by SSM/I Retrievals and NMC Analyses, *Fourth International Conference on Southern Hemisphere Meteorology and Oceanography*, 29 March - 2 April 1993, Hobart, Australia.
- Gutowski, W. J., and L. E. Branscome, 1993: Impact of CO₂ Doubling on the Energetics and Hydrologic processes of Southern Hemisphere Transient Eddies, *Fourth International Conference on Southern Hemisphere Meteorology and Oceanography*, 29 March - 2 April 1993, Hobart, Australia.
- Gutowski, W. J., C. J. Vorosmarty and M. Person, 1993: Modeling coupled land-atmosphere hydrology in a heterogeneous environment, *CHAMMP Science Team Meeting*, 15-17 March 1993, Monterey, California.
- Branscome, L. E., and W. J. Gutowski, 1993: The Impact of Doubled CO₂ on the Hydrologic and Radiative Processes of Extratropical Transient Eddies. *Fourth Symposium on Global Change Studies*, 17-23 January 1993, Anaheim, California.
- Yang, S., and W. J. Gutowski, 1992: Associations among Asian monsoon, ENSO and Eurasian snow cover. *Second International Conference on East Asia and Western Pacific Meteorology and Climate*, September 1992, Hong Kong.
- Gutowski, W. J., 1992: Atmospheric climate modeling at regional scales. *First EDAC Workshop for Central and Eastern Europe*, 11-15 May 1992, Durham, New Hampshire.
- Gutowski, W. J., and R. Rosen, 1991: Sensitivity of zonal winds and atmospheric angular momentum to doubling CO₂. *Fifth Conference on Climate Variations*, 14-18 October 1991, Denver, Colorado.
- Branscome, L. E., W. J. Gutowski and D. A. Stewart, 1991: Life cycles of moist baroclinic waves. *Eighth Conference on Atmospheric and Oceanic Waves and Stability*, 14-18 October 1991, Denver, Colorado.
- Yang, S., P. J. Webster and W. J. Gutowski, 1991: Potential vorticity and tropical-extratropical interaction: ENSO-related variability. *Fifth Conference on Climate Variations*, 14-18 October 1991, Denver, Colorado.
- Rosen, R., and W. J. Gutowski, 1991: Impact of doubling CO₂ on zonal winds and atmospheric angular momentum to a doubling of CO₂. *XX General Assembly, International Union of Geodesy and Geophysics*, 11-24 August 1991, Vienna, Austria.
- Gutowski, W. J., G. F. McMahon, P. Kirshen and S. Schluchter, 1990: Potential impact of global warming on flooding in South Florida. *Chapman Conference on Hydrological Aspects of Global Climate Change*, 12-14 June 1990, Lake Chelan, Washington.

- Gutowski, W. J., and L. E. Branscome, 1990: Impact of CO₂-induced climate change on water vapor transport by atmospheric waves. *Chapman Conference on Hydrological Aspects of Global Climate Change*, 12-14 June 1990, Lake Chelan, Washington.
- Gutowski, W. J., and L. E. Branscome, 1990: Impact of CO₂-induced climate change on water vapor transport by atmospheric waves. *NASA Workshop on the Role of Water Vapor in Climate Processes*, 28 October - 1 November 1990, Easton, Maryland.
- Gutowski, W.J., L. E. Branscome and D. A. Stewart, 1989: Modeling moisture transports by baroclinic eddies. *Fifth Scientific Assembly, International Association of Meteorology and Atmospheric Physics*, 31 July - 12 August 1989, Reading, England.
- Gutowski, W.J., X.-Z. Liang, M. J. Iacono, W.-C. Wang and R. D. Cess, 1989: Spectral vs. gridpoint schemes in climate simulation. *International Conference on Modelling of Global Climate Change and Variability*, 11-15 September 1989, Hamburg, Germany.
- Wang, W.-C., G. I. Molnar, S. D. Goldenberg and W. J. Gutowski, 1989: Transient temperature responses to increases in atmospheric trace gases: A seasonal energy balance model study. *International Conference on Modelling of Global Climate Change and Variability*, 11-15 September 1989, Hamburg, Germany.
- Turner, R. W., D. A. Stewart, L. E. Branscome and W. J. Gutowski, 1989: Nonlinear calculations of planetary wave instability in the Venus upper atmosphere. *Preprints, Seventh Conference on Atmospheric and Oceanic Waves and Stability*, American Meteorological Society, 10-14 April, 1989, San Francisco, CA.
- Gutowski, W. J., L. E. Branscome and D. Steward, 1987: Life cycles of baroclinic waves: Mean flow adjustment and modification by surface fluxes. *Sixth Conference on Atmospheric and Oceanic Waves and Stability*, 25-28 August 1987, Seattle, WA.
- Gutowski, W. J., D. Gutzler, D. Portman and W.-C. Wang, 1987: Surface energy fluxes and surface warming in GCM doubled CO₂ experiments. *International Union of Geodesy and Geophysics, XIX General Assembly*, 9-22 August 1987, Vancouver, BC.
- Gutowski, W. J., D. Gutzler and D. Portman, 1987: Regional climate variability in three general circulation models. *Fourth Conference on Climate Variations: Climate Dynamics Update*, 10-13 March 1987, Baltimore, MD.
- Gutowski, W. J., G. Molnar and W.-C. Wang, 1986: Speeding convergence of mixed layer ocean-atmosphere models. *1986 AGU Spring Meeting*, 19-22 May 1986, Baltimore, MD.
- Gutowski, W. J., and R. N. Hoffman, 1985: Robust data quality control in a statistical interpolation analysis scheme. *Preprints, Seventh Conference on Numerical Weather Prediction*, 17-20 June 1985, Montreal, Quebec, American Meteorological Society, 57-60.

Gutowski, W. J., and R. N. Hoffman, 1985: Robust data quality control in a statistical interpolation analysis scheme. *Ninth Conference on Probability and Statistics in the Atmospheric Sciences*, 9-11 October 1985, Virginia Beach, Virginia, 428-433.

Gutowski, W. J., 1985: Baroclinic adjustment and mid-latitude temperature profiles. *Fifth Conference on Atmospheric and Oceanic Waves and Stability*, 4-7 March 1985, New Orleans, LA.

Gutowski, W. J., G. Molnar and W.-C. Wang, 1985: Feedback effects of dynamical heat fluxes during climate change. *Third Conference on Climate Variations and Symposium on Contemporary Climate*, 8-11 January 1985, Los Angeles, CA.

INVITED SEMINARS:

- Nanjing University, Nanjing, China: “The Coordinated Regional Climate Downscaling Experiment: Update and Opportunities” (April 2018) [about 40 people]
- Institute of Plateau Meteorology, Chengdu, China: Two lectures – “The North American Regional Climate Change Assessment Program (NARCCAP): Simulations of Contemporary Climate Means and Extremes” and “NARCCAP Simulations of Projected Climate Change” (September 2012)
- University of Cape Town, Cape Town, South Africa: Lecture for the CSAG Winter School – “The Intergovernmental Panel on Climate Change (IPCC) Working Group 1” (July 2012)
- Iowa State BioGeoSciences REU Program: “My Research Program – W. Gutowski” (June 2012)
- Iowa State Pierre Lecture Series: Respondent to lecture by Art Bettis (Univ. Iowa) (March 2012)
- Iowa State Computational Fluid Dynamics Center: “Continuous Dynamic Grid Adaptation in A Global Atmospheric Model: Implementation and Applications” (January 2012)
- Iowa State BioGeoSciences REU Program: “My Research Program – W. Gutowski” (June 2011)
- Institute of Oceanology, Polish Academy of Sciences, Sopot, Poland: “Regional Arctic Climate Model: Overview, Selected Results and Future Plans” (W. Maslowski, W. Gutowski and J. Cassano) (May 2011)
- Centre for Regional Change in the Earth System, Danish Meteorological Institute, Copenhagen, Denmark: Five lectures for the CRES Summer School on Regional Climate Modelling as a Tool for Impacts Research – “Climate Modelling 101” (W. Gutowski), “Regional Climate Modelling” (D. Caya and W. Gutowski), “Regional Projections” (W. Gutowski and D. Caya), “Ensemble Modeling”

- (J. Christensen and W. Gutowski), “Addressing Uncertainties” (D. Caya and W. Gutowski) (May 2011)
- University of Cape Town, Cape Town, South Africa: “The Coordinated Regional Climate Downscaling Experiment: CORDEX,” (August 2009)
- Goddard Institute for Space Studies, New York, New York: “Coordinated Regional Climate Modeling Programs: CORDEX, NARCCAP and Extreme Precipitation” (July 2009)
- University of Cape Town, Cape Town, South Africa: “Precipitation Changes under Global Warming” (June 2008)
- International Research Institute for Climate and Society, Columbia University: “Precipitation Changes under Global Warming” (June 2008)
- Seminars in Seoul, Korea: “CAM-EULAG Model Development” at Seoul National University and Yonsei University; “Changes in Precipitation Extremes” at Seoul National University and an Asian Pacific Network workshop on climate extremes (February 2008)
- Institute of Oceanology, Polish Academy of Sciences, Sopot, Poland: “Precipitation Changes in Future Climate: Extreme Events and Constraints” (April 2007)
- Institute for Atmospheric Physics, Chinese Academy of Sciences (August 2005)
- Department of Geosciences, University of Nebraska/Lincoln - two seminars: Changes in precipitation in future climate, CLASP (November 2004)
- Centro de Investigaciones del Mar y la Atmósfera and Departamento de Ciencias de la Atmósfera y los Océanos, Universidad de Buenos Aires (September 2004)
- Department of Meteorology, Penn State University (February 2004)
- Department of Atmospheric and Oceanic Sciences, University of Wisconsin/Madison (September 2003).
- Drought Monitoring Centre, Harare, Zimbabwe (November 2001)
- Environment and Geographical Science Department, University of Cape Town, Cape Town, South Africa (August 2001)
- Department of Geophysics, Peking University, Beijing, China (February 2000)
- START Temperate East Asia Regional Center, Chinese Academy of Sciences, Beijing, China - 4 lectures on regional climate modeling: PIRCS, 10-year Simulations, STAT-LAM Comparison, CLASP model (February 2000)
- Environment and Geographical Science Department, University of Cape Town, Cape Town, South Africa (June 1999)
- St. Anthony Falls Laboratory, Department of Civil Engineering, University of Minnesota, Minneapolis, MN (April 1999)
- Dept. of Geography and Environmental Studies, University of the Witwatersrand, Johannesburg, South Africa (August 1998)
- Institute for Hydraulics Research, University of Iowa, Iowa City, IA (April 1995)
- Dept. of Geology and Geophysics, University of Minnesota, Minneapolis, MN (Feb. 1995)
- Potsdam Institute for Climate Impact Research, Potsdam, Germany (Sept. 1994)
- Meteorology Summer School, Meteorological Service of Hungary, Balatonalmádi, Hungary (Sept. 1994)
- Dept. of Atmospheric and Oceanic Sciences, University of Wisconsin, Madison, WI (April, 1994)

Stratospheric Physics Group, Dept. of Physics, ISU, Ames, IA (Dec. 1993)
Dept. of Mechanical Engineering, Iowa State Univ., Ames, IA (November 1993)
University of New Hampshire, Durham, NH (May 1992)
University of Toronto, Toronto, Ont. (April 1992)
Iowa State University, Ames, IA (March 1991)
Colorado State University, Fort Collins, CO (February 1991)
University of New Hampshire, Durham, NH (May 1990)
Dalhousie University, Halifax, NS (March 1989)
University Toronto, Toronto, Ont. (April 1989)
Atmospheric and Environment Service, Toronto, Ont. (April 1989)
Massachusetts Institute of Technology, Cambridge, MA (October 1988)
University of Miami, Miami, FL (October, 1986)
McGill University, Montreal, PQ (January, 1986)
Atmospheric and Environmental Research, Cambridge, MA (March, 1983)
Goddard Institute for Space Studies, New York, NY (March, 1983)
Yale University, New Haven, CT (April, 1983)
Scripps Institute for Oceanography, La Jolla, CA (June, 1983)
Harvard University, Cambridge, MA (June, 1983)

ADMINISTRATIVE RESPONSIBILITIES:

Chair, department promotion committee for Prof. Kristie Franz (to Full Professor) (Summer-Fall 2018)

Lead Author, Chapter 10, Working Group 1, Sixth IPCC Assessment Report, (June 2018 –).

RGCM Program proposal review panel, U.S. Dept. of Energy, Rockville, MD (May 2018)

Invited Participant, IPCC: *Expert Meeting on Regional Assessment*, ICTP, Trieste, Italy (May 2018)

Member, International Advisory Panel, Future Resilience for African Cities and Lands (FRACTAL) Program (July 2016 – present)

Founding Co-chair, Societal Dimensions Working Group, for the Community Earth System Model at the National Center for Atmospheric Research (September 2011 – February 2016).

Chair, Post-Tenure Review Committee for C. Harding (November 2015).

Member, Science Committee, *International Conference on Regional Climate: CORDEX 2016*, Stockholm, Sweden (May 2016)

Promotion evaluation of Dr. Moetasim Ashfaq for Full Technical R&D Staff at Oak Ridge National Lab (October 2014)

Promotion evaluation of Dr. Nir Krakauer for Associate Professor at the City College of the City University of New York (July 2014)

Member, Science Committee, *International Conference on Regional Climate: CORDEX 2013*, Brussels, Belgium (November 2013)

World Climate Research Programme Modelling Advisory Council (December 2013 – present)

CORDEX Science Advisory Team, World Climate Research Programme:
Member: May 2012 – September 2013
Co-Chair: October 2013 – present

Working Group on Regional Climate, World Climate Research Programme, *ex officio* member as Co-Chair of the CORDEX SAT (October 2013 – present).

Member, Scientific Advisory Board, Canadian Network for Regional Climate and Weather Processes (March 2013 – May 2017)

Climatic Change, Guest Editor (December 2012 – April 2014) – 3 papers.

Promotion evaluation of Dr. Eric Salathé for Associate Professor at the University of Washington, Bothell (September 2013)

Promotion evaluation of Dr. Peter Snyder for Associate Professor at the University of Minnesota (August 2013)

Invited Participant, National Oceanic and Atmospheric Administration Workshop: Quantitative Evaluation of Downscaled Climate Projections, National Center for Atmospheric Research, Boulder, CO (August 2013).

Promotion evaluation of Dr. Xiangdong Zhang for Professor at the University of Alaska Fairbanks (August 2013)

Promotion evaluation of Dr. Babatunde Abiodun for Senior Lecturer (equivalent to ISU Associate Professor) at the University of Cape Town, South Africa (July 2013)

Chair, Post-Tenure Review Committee for W. Gallus (February 2013).

Co-convener (with C. Vorosmarty, B. Rosensweig and A. Steiner), Union Session U23a: Regional Modeling to Support Policymaking. *Fall Meeting*, American Geophysical Union, San Francisco, CA, December 2012.

Invited Participant, U.S. Department of Energy Workshop: *Community Modeling and Long-Term Predictions of the Regional-Scale Integrated Water Cycle*, Washington, DC (September 2012).

Member, U.S. CLIVAR Working Group on Extremes and Large-Scale Circulation, started April 2012.

College of Liberal Arts and Sciences: Liberal Arts and Sciences College Representative Assembly (May 2012 – May 2015); LAS Representative Assembly Executive Committee (May 2012 – May 2015).

Department search committee for “strat-sed” position (Fall 2011-Spring 2012)

Lead Author, Chapter 12, Working Group 1, Fifth IPCC Assessment Report, (May 2010 – August 2013).

Journal of Hydrometeorology

Editor (January 2007 – December 2011)

Associate Editor (2012 – 2014)

Promotion evaluation of Dr. Mark A. Snyder for Associate Project Scientist at the University of California – Santa Cruz (September 2012).

Member, Organizing Committee, *CESM Workshop on Societal Dimensions of Earth System Modeling*, National Center for Atmospheric Research, Boulder, CO (May 2011).

Panel member, National Academy of Sciences/Division of Earth and Life Sciences: Challenges and Opportunities in the Hydrologic Sciences (March 2010 – February 2012).

Member, Organizing Committee, World Climate Research Programme/UNESCO Workshop: *Metrics and methodologies of estimation of extreme climate events*, Paris, France (September 2010).

Preparation for Professor promotion for Prof. X. Wu (Summer-Fall 2010)

Invited Participant and Session Leader, World Climate Research Programme Workshop: *Regional Climate: Facilitating the production of climate information and its use in impact and adaptation work*, Lille, France (June 2010).

Co-Director, *Fifth ICTP Workshop on the Theory and Use of Regional Climate Models*. International Centre for Theoretical Physics, Trieste, Italy (31 May – 11 June 2010).

Faculty Advisor, ActiveUs at Iowa State University (Fall 2010 – Spring 2015)

Faculty Evaluation Committee, GeAt (Spring 2010)

Chair, Governance Document Committee (2009-2010)

Curriculum Committee, GeAt (2009 – 2015)

Promotion evaluation of Dr. Jeremy S. Pal for Associate Professor with tenure at Loyola Marymount University (October 2009)

External evaluator of the research productivity of Prof. Bruce Hewitson (University of Cape Town) for the South African National Research Foundation (June 2009)

Special Advisory Committee evaluating candidates applying for an opening at the International Center for Theoretical Physics, Physics of Weather and Climate Section (February-May 2009)

Promotion evaluation of Dr. Stephen R. Sain for Scientist III position at NCAR (March 2009)

Award evaluation of Prof. René Laprise for the Patterson Medal of the Meteorological Service of Canada (March 2009).

Member, Task Force on Regional Climate Downscaling, World Climate Research Programme (2008 – 2011).

Board of Directors, Canadian Regional Climate Modelling and Diagnostics (CRCMD) Network (2008-2009).

Member, Technical Review Panel for FEMA project “Impact of Climate Change on the National Flood Insurance Program, and Improving Coastal Flood Plain Mapping” (November 2008 – October 2011).

Preparation of Associate Professor promotion for Prof. Chris Harding

GeAt department curriculum committee, started January 2008.

Panel member, National Academy of Sciences/Transportation Research Board Study On Climate Change And U.S. Transportation (2005-2008)

Member, U.S. Climate Change Science Program Panels (2005-2008):

(a) Synthesis and Assessment Product 3.1 - Climate Models and Their Uses and Limitations: Climate Sensitivity, Feedbacks, and Uncertainties

(b) Synthesis and Assessment Product 3.3 - Climate extremes including documentation of current extremes: Prospects for improving projections (Coordinating Lead Author for Chapter 3 – Physical Behavior of Extremes and their Projection, Lead Author on Executive Summary and Chapter 4 – Recommendations).

Chair, search committee for surface hydrologist (assistant professor position) 2005-2006.

Co-convenor, Regional climate simulation and downscaling, Session C2. *IAMAS 2005*, Beijing, China (August 2005).

Preparation for Professor promotion for Prof. W. Gallus

Promotion mentor for Prof. C. Cervato

Preparation for Distinguished Professor nomination for Prof. M. Chen

Professor-in-charge, Atmospheric Sciences Program (7/98 – 6/04)

Committee on Global Environmental Change, American Geophysical Union (7/98 – 6/00)

Member, Editorial Board, *Dynamics of Atmospheres and Oceans* (11/96 - 98)

Iowa State University representative to University Corporation for Atmospheric Research,
Boulder, Colorado (9/98 - 8/04)

IITAP appointment: Co-Director, Project to Intercompare Regional Climate Simulations (11/98
– 12/03).

College of Liberal Arts and Sciences: Honors Committee (8/92-7/95); Liberal Arts and Sciences
College Representative Assembly (5/93 - 5/99); LAS Representative Assembly Executive
Committee (5/93 - 5/97; Chair, 5/95 - 5/97)

Department of Geological and Atmospheric Sciences: Curriculum, Awards, and Faculty
Evaluation Committees (started 8/92).

Atmospheric Sciences Program: Various program functions such as planning for external review
(Spring 1992; Spring 1998).

Co-chair, "Interfacing Mesoscale Climate Models with Impacts Assessment" (National Center
for Atmospheric Research, Boulder, Colorado, 5 - 6 December 1996)

Co-chair, "Project to Intercompare Regional Climate Simulations - Workshop II" (Iowa State
University, Ames, Iowa, 5 - 6 June 1997)

Co-chair, "PIRCS Modelers Workshop" (San Francisco, California, 11 December 1997)

Co-chair, "Project to Intercompare Regional Climate Simulations - Workshop III" (Danish
Meteorological Institute, Copenhagen, Denmark, 23-23 May 2000)

Chair and co-convener, Stanstead Seminar on the Role of Large-Scale, Extratropical Dynamics
in Climate Change (8/91 - 8/94)

Manager, AER Climate Group (11/89 - 9/91)

Chair, AER Library Committee (1/88 - 10/89)

Member, AER Computer Resources Task Force (2/88 - 12/88)

OTHER:

TECO program review panel (5/98)

NSF Committee of Visitors (8/98) – external triennial evaluation of NSF Lower Atmospheric Sciences [Division] with specific focus on Climate Dynamics Program

Invited Panelist (3/99) - The Science of Global Climate Change. A Symposium on the State-of-the-Science. Sponsored by the Center for Global and Regional Environmental Research (University of Iowa) and Iowa Division, United Nations Association - USA.

Presentation (00.10) - "Global warming". Sunday Forum of St. John's Episcopal Church, Ames, IA.

External Reviewer, Meteorology Program, University of Pretoria, Pretoria, South Africa (01.09)

Proposal Reviewer, AIACC program.

Presentation (01.11) – “Weather and Climate Research”. Greenfield Girls Primary School, Kenilworth, Cape Town, South Africa.

Invited Participant, Kick-Off Meeting for Assessing Impacts and Adaptations to Climate Change (AIACC) program, 11-15 February 2002, United Nations Environment Programme Headquarters, Nairobi, Kenya.

Invited Participant and session chair, US Workshop on Climate Projections, Uncertainty, and Scenarios for Impacts Assessment, 17-19 July 2002, National Center for Atmospheric Research, Boulder, CO.

NOAA GEWEX/GAPP review panel (02.11)

Op-ed article, "African Traditions Share Iowa Values", *Des Moines Register*, 8 July 2003.

Invited Panelist and Presenter, ISU Workshop on Complexity in the Environment, 16 July 2003, Iowa State University, Ames, IA.

Listed in *Who's Who in Sciences Higher Education* (January 2004).

Nominated by B. Hewitson, F. Giorgi, & N. Leary to be a lead author for the regional climate chapter of the AR4 (but not selected).

Invited Participant, NARCCAP Planning Workshop, 12 June 2004.

Steering Committee Member for ISU Workshop for Defining Key Scientific Questions on the Hydrology of Intensively Managed Landscapes (IMLs) in the Midwest US (15-16 June 2004).

Interviewed by the President of the Iowa Soybean Board, on our warming hole paper (Pan et al. 2004), for 2.5 minute piece that broadcasted from several radio stations (Sept. 2004).

Interviewed by radio station in California on our warming-hole paper (Pan et al. 2004) (Sept. 2004).

Presentation on changing climate, Ames Adult Day Care Center (10 February 2005).

Invited participant, North American Weather and Climate Extremes: Progress in Monitoring and Research (A Workshop), July 2005, Aspen Global Change Institute, Aspen, CO.

Guest speaker, Frontiers of the Discipline, a seminar series for ISU freshmen (18 September 2005).

Interviewed by a reporter for the *Economist* on regional climate change in North America (July 2006)

Invited Participant and discussion chair, Workshop on Hurricanes and Climate Change, 7-8 November 2006, National Center for Atmospheric Research, Boulder, CO.

Interviewed by writer for the *Nevada (Iowa) Journal and Tri-County Times* about recent weather and seasonal outlook (March 2007).

Led a review discussion for a group of students in the Freshman Honors Mentor Program (March 2007).

Interviewed by email by the *Daily Iowan* about global warming and changes in severe weather (6 April 2007).

Interviewed by WHO radio on climate change for Iowa (8 August 2007).

Interviewed by a writer for *Science* on regional climate change modeling (9 August 2007).

Interviewed by a writer for Reuters News Agency on regional climate-change modeling (27 August 2007).

Invited presenter and facilitator for Global Citizenship Symposium on Global Warming and the Climate Challenge Game. Iowa State University (6 October 2007).

ISU Meteorology seminar: "Precipitation Changes under Global Warming" (October 2007).

Interviewed by WHO radio, KASI radio, KCCO television, *Des Moines Register*, and *Iowa State Daily* about the Intergovernmental Panel on Climate Change (IPCC) sharing with Al Gore the Nobel Peace Prize for 2007 (October 2007).

Lecturer for Iowa State Extension's Corn School: "Our Changing Climate: What Should We Do?" (5 February 2008)

Invited dignitary in VEISHA parade. April 2008

Invited workshop participant: *Identifying Outstanding Grand Challenges in Climate Change Research: Guiding DOE's Strategic Planning*, March 25-27, 2008, Arlington, VA.

Interviewed by Radio Iowa, Learfield Communications, on current weather (June 2008).

Interviewed by a reporter for *Newsweek* on current weather, flooding and future conditions for flooding (June 2008).

Interviewed by Iowa Public Radio (Rob Dillard) about CCSP 3-3 report and recent weather conditions in Iowa (June 2008).

Interviewed by a journalism fellow for the www.news21project.org about regional climate change and simulation (July 2008).

Speaker and panelist at a Sigma Xi Science Café on flooding in Iowa: "Future Extreme Rainfall in Iowa" (September 2008).

Lecture for a senior seminar on Local Governments, Energy and Climate Change, in the Design College (September 2008).

Panel speaker for a meeting of HCI 591 (October 2008).

Interviewed by Soheil Rezayazdi of the Center for Global and Regional Environmental Research (Univ. Iowa) for a film CGRER is producing to educate K-12 students on climate-change issues (October 2008).

ISU Meteorology seminar: "Implementation of a Non-Hydrostatic, Adaptive-Grid Dynamics Core in the NCAR Community Atmospheric Model" (October 2008).

Presentation on climate research and Iowa State and professional opportunities, for Meteor 201 (October 2008).

Presentation to Ames Middle School Extended Learning Program: "Climate Change and Iowa Flooding" (October 2008).

Lecture: "Our Changing Climate: Myths and Realities", Iowa State Global Citizenship Symposium (November 2008). [attendance: about 80 people]

Lecture: "Our Changing Climate: Myths and Realities", Putnam Museum, Davenport, Iowa (January 2009). [attendance: about 140 people]

Led Mid-Term Review Discussion with Freshman Honors students (March 2009).

Short lecture: "Climate Change Connections", Campanile, Iowa State University (Earth Day, April 2009).

Guest lecturer: In ISU Honors Seminar, "Understanding Global Warming" (April 2009).

Invited climate expert for Iowa Youth Symposium, Iowa United Nations Association, State Capitol, Des Moines (October 2009).

Lecture: "Our Changing Climate: Myths and Realities", Noontime Lions Club, Marshalltown, Iowa (October 2009). [attendance: about 25 people]

Presenter and panelist: "Global Climate Change – A Faculty Forum", part of the *Live Green! Sustainability Series*, sponsored by the Office of the President, Iowa State University (November 2009). [attendance: about 100-150 people]

Guest lecturer: "Our Changing Climate: Myths and Realities", Earth, Wind and Fire Learning Community, Iowa State University (November 2009).

Guest lecturer: "Climate: Present and Future", Meteorology 201, Iowa State University (November 2009).

Reviewer of "Climate Futures For Tasmania: TECHNICAL REPORT 1 Methods and Results on Climate Modelling" for the Antarctic Climate & Ecosystems Cooperative Research Centre, Hobart, Tasmania, Australia (January 2010).

Reviewer of chapters for a planned textbook, *Climate Change*, for Prentice-Hall (January 2010).

Lecture: "Climate Change Myths and Realities", Iowa State Environmental Science Club, about 6 people present (February 2010).

Invited reviewer for Zeroth-Order Draft of *IPCC Special Report: Managing the Risks of Extreme Events and Disasters to Advance Climate Change Adaptation* (March 2010).

Mentor for a student presentation at "Research in the Capitol": Justin Wittrock, Algona, meteorology, "Viability of Weather Dissemination Via Social Network Technologies," mentors William Gutowski, professor of geologic and atmospheric sciences, and Kelvin K. Droegemeier and Somer A. Erickson, University of Oklahoma. Twenty Iowa State undergraduates will present their research to legislators and others during the fifth annual "Research in the Capitol." (25 March 2010).

Interviewed by reporter from Reuters about the possible effects of the Iceland volcano on climate and European agriculture (April 2010).

Lecture: "Climate Change Myths and Realities", Ames Public Library, about 10-12 people (April 2010).

Lecture: “Climate Change Myths and Realities”, Deerfield Retirement Community, Urbandale, IA, about 25 people (May 2010).

Interviewed by a reporter for the Associated Press, Michael Crum, about recent and projected changes in precipitation for Iowa (August 2010).

Interviewed by Steve Jones for an article on my climate downscaling work to appear in the LAS alumni magazine (August 2010).

ISU Meteorology seminar: “If Global Warming is Happening, Why are Global Temperatures Going Down?” (September 2010).

Interviewed by a reporter for the *Ames Tribune*, James Pusey, on an Environment Iowa report about climate change and increased flooding (September 2010).

Invited panel speaker: *Forum on Ames Flooding*, about 50 people (October 2010).

Honors Program: Lunch with a Professor. Met with 5 Freshman Honors Program students over lunch (November 2010).

Sustainable Agriculture Colloquium: “The Intergovernmental Panel on Climate Change”, about 45 people (March 2011).

Interviewed by a reporter for *New Scientist*, Ferris Jabr, on future climate trends and the potential for extensive springtime flooding in the Ohio and Upper Mississippi River basins (May 2011).

Lecture: “Climate Change: Myths and Realities”, Nevada Lions Club, Nevada, IA, about 16 people (May 2011).

Lecture: “Climate Change: Some Common Myths”, Ames Lions Club, Ames, IA, 10 people (June 2011).

Lecture: “Our Changing Climate: Myths and Realities”, *Distinctive Voices* lecture series, Jonsson Center, National Academy of Sciences, Woods Hole MA, about 110 people, http://www.youtube.com/watch?v=p9jQYGVdTmU&list=UUOzWn948D9YO41K3G7vI_Zg (June 2011).

Immigration reference letters for three scientists (J. Lu, J. He, M. Ashfaq) (April, December 2011).

Interviewed by a reporter for the *Ames Tribune* regarding the multi-scientist letter on climate change sent to Gov. Branstad and coordinated by State Sen. Rob Hogg (November 2011).

Interviewed with State Sen. Rob Hogg on *The Exchange*, an Iowa Public Radio program, on the multi-scientist letter on climate change sent to Gov. Branstad and coordinated by State Sen. Rob Hogg (November 2011).

Interviewed by *Iowa State Daily* reporter on the unusually warm winter up through early January 2012 (January 2012).

Lecture: “Iowa’s Changing Climate”, Collegiate Presbyterian Church, Ames, IA, about 50 people (February 2012).

Lecture: “Climate Change: What’s Happening?” Alpha Phi Omega Merit Badge University, (Boy Scout meteorology merit badge), Iowa State University, Ames, IA, 19 Boy Scouts and 3 parents (November 2012).

High school class sessions on climate change, via Skype. Short presentation of “Climate Change: What’s Happening?”, followed by Q&A with the students. Part of a curriculum taught by meteorology-major alumnae Kara (Houlihan) Victorsen at Kaneland High School, in Maple Park, Illinois. About 20 students in each class of 42 minutes (February 2013).

Immigration reference letter, further for M. Ashfaq (February 2013).

Session Moderator, 7th Annual Symposium on Undergraduate Research & Creative Expression, Iowa State Honors Program (April 2013).

Interviewed by *Cedar Rapids Gazette* in their preparation for the symposium “Five Years Out: Ongoing Impacts of the 2008 Iowa Flood”, to be held 31 May 2013 (May 2013).

Interviewed by Steve Jones for an article on the Water and Climate Change project supported by the LAS Strategic Research Initiative for LAS alumni magazine (June 2013)

Interviewed by KASI radio and *Radio Iowa* regarding an ISU press release about our Squaw Creek project (June 2013).

Interviewed by the Cedar Rapids *Gazette* regarding the recent summer cold snap and global warming in general (July 2013).

Interviewed by the Des Moines *Register* on financial implications of attempts to mitigate greenhouse gas emissions (October 2013).

Member, Panel of IPCC Fifth Assessment Report (AR5) Lead Authors who met with 3-5 (est.) Members of the European Parliament and staff to answer questions about the Working Group 1 report of the AR5 (November 2013). (Session chaired by Vittorio Prodi, MEP, Italy)

Interviewed by Clint Woods (Professional Staff Member, Subcommittee on Environment, U.S. House Committee on Science, Space, and Technology) about outcomes of the IPCC Fifth Assessment Report of Working Group 1 (November 2013).

Interviewed by Rebecca Lindsey (managing editor of the News & Features section of NOAA's www.Climate.gov) about why the IPCC AR5 moved the lower bound of projected warming from 2.0 °C (AR4) to 1.5 °C (February 2014).

Lecture: "The IPCC Fifth Assessment Report: Where we are. Where we are heading", Osborn Club, Iowa State University, Ames, IA, 10 people (February 2014).

Lecture: "Our Changing Climate: What we know, Where we are heading", Ames Golden K Kiwanis, Ames, IA, about 45 people (February 2014).

Lecture: "Our Changing Climate: What we know, Where we are heading", Collegiate Presbyterian Church, Ames, IA, about 25 people (April 2014).

U.S. Department of Energy, proposal review panel (April 2014; 10 proposals)

NSF/USAID Partnerships for Enhanced Engagement in Research (PEER) Science Program, proposal review panel (April 2014; 12 proposals)

Lecture: "Our Changing Climate: What we know, Where we are heading", League of Women's Voters, Ames, IA, about 25 people (September 2014).

Provided comments to *Science* magazine on a paper about statistical-dynamical downscaling (November 2014).

Lecture: "Our Changing Climate: What we know, Where we are heading", Iowa Chapter of the American Society of Farm Managers and Rural Appraisers, Ames, IA, about 140 people (February 2015).

Lecture: "Our Changing Climate: What we know, Where we are heading", St. John's Church student group, Ames, IA, about 20 people (March 2015).

Panelist: "Climate Change: From Paris to Des Moines", Iowa United Nations Association, Des Moines, IA, about 15 people (April 2016). Panel included Des Moines Mayor Frank Cownie, Lagi Roberts (Alpha Kappa Alpha Sorority), Nick Fetty (CGRER, moderator).

Lecture: "Our Changing Climate: What we know, Where we are heading", West Des Moines Rotary Club, West Des Moines, IA, about 30 people (June 2016).

Lecture: "Our Changing Climate: What we know, Where we are heading", Collegiate Presbyterian Church, Ames, IA, about 25 people (October 2017).

Lecture: "Our Changing Climate: What we know, Where we are heading", Norwalk, IA, Morning Rotary Club, Norwalk, IA, 15 people (October 2017).

Lecture: "Living in South Africa and Working with African Scientists", Sunday Adult Forum. St. John's Episcopal Church, Ames, IA, about 15 people (April 2018).

Radio Interview: By Lynnae Hentzen for *Green City*, KFMG 98.9 (Des Moines), to air late August 2018. Twenty minutes (August 2018).

Served as referee for the following granting agencies:

Asia-Pacific Network for Global Change Research, Assessment of Impact and Adaptations to Climate Change (UNEP program), Canadian Foundation for Climate and Atmospheric Sciences, Czech Science Foundation, The Danish Ministry of Foreign Affairs - Consultative Research Committee for Development Research (FFU), Inter-American Institute, International START Secretariat, (Shota Rustaveli) National Science Foundation of the Republic of Georgia, Natural Environment Research Council (U.K.), Natural Sciences and Engineering Research Council of Canada, South Africa National Research Foundation, U.S. Agency for International Development, U.S. Department of Agriculture, U.S. Department of Energy, U.S. National Aeronautic and Space Administration, U.S. National Center for Atmospheric research, U.S. National Oceanic and Atmospheric Administration, U.S. National Science Foundation (5 Divisions), South African National Research Foundation

Served as referee for the following journals/publishers:

Advances in Global Change Research, Annales Geophysicae, Annals of the American Geographical Society, Assessment of Impact and Adaptations to Climate Change (UNEP program) Working Papers, Bulletin of the American Meteorological Society, Climate Dynamics, Climate Research, Climatic Change, Dynamics of Atmospheres and Oceans, Earth Interactions, Geophysical Research Letters, Geoscientific Model Development, Global and Planetary Change, International Conference for High Performance Computing, Networking, Storage, and Analysis (SC08), International Journal of Climatology, Iranian Journal of Science and Technology, Journal of African Earth Sciences, Journal of Applied Meteorology, Journal of the Atmospheric Sciences, Journal of Climate, Journal of Geophysical Research, Journal of Hydrology, Journal of Hydrometeorology, Journal of the Meteorological Society of Japan, Meteorology and Atmospheric Physics, Monthly Weather Review, National Academies Workshop Reports and Summaries, Nature, Nature Scientific Reports, Publications of the National Academy of Sciences, Quarterly Journal of the Royal Meteorological Society, South African Journal of Science, Super Computing 2008 (computer science conference), Theoretical and Applied Climatology, U.S. National Research Council, Water Resources Research, Weather and Forecasting