Eugene S. Takle

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Professional Preparation

B.A.	Physics, Math	Luther College, 1966
Ph.D.	Physics	Iowa State University, 1971

Professional Experience

7/83 – present	Professor, Iowa State University
7/76 – 6/83	Associate Professor, Iowa State University
12/71-6/76	Assistant Professor, Iowa State University

Recent Representative Publications

Takle, E., C. Anderson, M. Jha, and P.W. Gassman. 2006. Upper Mississippi River Basin modeling system part 4: Climate change impacts on flow and water quality. In: *Coastal Hydrology and Processes* (Eds. V.P. Singh and Y.J. Xu). Water Resources Publications, Highland Ranch, CO (In press).

Takle, E. S., J. Roads, B. Rockel, W. J. Gutowski, Jr.. R. W. Arritt, I. Meinke, C. G. Jones, and A. Zadra, 2006: Transferability intercomparison: An opportunity for new insight on the global water cycle and energy budget. *Bull. Amer. Meteor. Soc.* (provisionally accepted)

Takle, E. S., M. Jha, and C. J. Anderson, 2005: Hydrological cycle in the Upper Mississippi River Basin: 20th century simulations by multiple GCMs. *Geophys. Res. Lett.,* 32, L18407 10.1029/2005GL023630 (28 September)

Jha, M., Z. Pan, E. S. Takle, R. Gu, 2004: Impact of climate change on stream flow in the Upper Mississippi River Basin: A regional climate model perspective. *J. Geophys. Res. 109*, D09105, doi:10.1029/2003JD003686.

Takle, E. S., 2004: Soil Management and conservation: Windbreaks and shelterbelts. In D. Hillel, C. Rosenzweig, D. Powlson, K. Scow, M. Singer, and D. Sparks, (eds). *Encyclopedia of Soils in the Environment*. Academic Press. London. 340-345.

Takle, E. S., and Z. Pan, 2004: Climate Change and Crop Production: Challenges to Modeling Future Scenarios. In Lal, R., J. Duxbury, B. A. Stewart, and D. O. Hansen, 2004, ed., *Climate Change and Global Food Security*. Marcel Dekker.

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.

Takle, E. S., W. J. Massman, J. R. Brandle, R. A. Schmidt, R. Garcia, I. V. Litvina, X. Zhou, G. Doyle, and C. W. Rice, 2004: Influence of high-frequency ambient pressure pumping on carbon dioxide efflux from soil. *Agric. and Forest Meteor.*. 124, 193-206.

Pan, Z., M. Segal, R. W. Arritt, and E. S. Takle, 2004: On the potential change in solar radiation over the U.S. due to increases of atmospheric greenhouse gases. *Int. J. Renewable Energy* 29, 1923-1928.

Gutowski, W. J., F. Otieno, 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.

Anderson, C. J., R. W. Arritt, E.S. Takle, Z. Pan, W. J. Gutowski, Jr., F. O. Otieno, R. da Silva, D. Caya, J. H. Christensen, D. Luthi, M. A. Gaertner, C. Gallardo, F. Giorgi, 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, and J. A. Taylor, 2003: Hydrological processes in regional climate model simulations of the central United States flood of June-July 1993. *J. Hydrometeor., 4*, 584-598.

Gutowski, W. J. Jr., S. G. Decker, R. A. Donavon, Z. Pan, R. W. Arritt, and E. S. Takle, 2003: Temporal scale of precipitation errors in central US climate simulation. *J. Climate*, 16, 3841-3847.

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.

Pan, Z., J. H. Christensen, R. A. Arritt, W. J. Gutowski, Jr., E. S. Takle, and F. Otenio, 2001: Evaluation of uncertainties in regional climate change simulations. *J. Geophys. Res. 106*, 17,735-17,752.

Takle, E. S., W. J. Gutowski, Jr., R. W. Arritt, Z. Pan, C. J. Anderson, R. Ramos da Silva, D. Caya, S.-C. Chen, J. Hesselbjerg Christensen, S.-Y. Hong, H. M. (Henry) Juang, J. Katzfey, W. M. Lapenta, R. Laprise, P. Lopez, J. Mc Gregor, and J. O. Roads, 1999: Project to Intercompare Regional Climate Simulations (PIRCS): Description and initial results. *J. Geophys. Res. 104* , 19,443 19,462.

Synergistic Activities

Contributing author, Intergovernmental Panel on Climate Change Third Assessment. Report, 2001

Atmospheric Science Editor, *Earth Science Reviews*

Chair, Transferability Working Group, GEWEX Hydrometeorology Panel, WCRP. (GEWEX=Global Energy and Water Experiment; WCRP = World Climate Research Program

Member, National Research Council (NRC) study committee entitled Developing Mesoscale Meteorological Observational Capabilities to Meet Multiple National Needs, 2007-08

Member, review team for US Climate Change Science Program Synthesis and Assessment Product 4.3, *The Effects of Climate Change on Agriculture, Land Resources, Water Resources, and Biodiversity*. (2007)

Collaborative Research Activities

Since 1995 Takle Gutowski, and Arritt have served as Co-Directors of the Regional Climate Modeling Laboratory at ISU (http://rcmlab.agron.iastate.edu/). This laboratory initiated and directed the Project for Intercomparison of Regional Climate Simulations (PIRCS) (see Takle et al., 1999) which engaged an international team of 18 regional climate modeling groups in intercomparison experiments for assessing the strengths and weaknesses of regional climate models. The RCM Lab now has a central role in the interagency North American Regional Climate Change Assessment Program (http://www.narccap.ucar.edu/) , which is creating climate change scenarios at regional scale for North America for follow-on impacts assessment studies.

From 2004-2006 Professor Takle served as Chair of the Transferability Working Group of GEWEX/GHP (http://rcmlab.agron.iastate.edu/twg/history.html), which had a central role in a set of transferability experiments conducted by an international team that led to a *BAMS* paper describing, with an

example, transferability experiments as the next phase of regional climate research beyond intercomparison studies.

Outreach Activities

Professor Takle has lectured widely in Iowa and throughout the Midwest (see Public Presentations: http://www.meteor.iastate.edu/faculty/takle/) on climate change and has taught a course on global change since 1990 with an online component (http://www.meteor.iastate.edu/gccourse/) since 1995 that has served other universities and science writers world-wide. He has provided advice and testimony on weather, climate, and climate change to state agencies, Iowa legislature, the natural gas industry, Illinois Commerce Commission, Attorney General's office of the State of Washington, public interest groups, and the electric utility industry.