

## **Eugene S. Takle**

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### **a. Professional Preparation**

Luther College	Physics, Math	B.A., 1966
Iowa State University	Physics	Ph. D., 1971
Cooperative Institute for Research in Environmental Sciences University of Colorado	NSF Faculty Research Associate	1978-1979
Naval Postgraduate School Monterey, CA	NRC Senior Postdoctoral Research Associate	1983-1985

### **b. Appointments**

Iowa State University, 1971-present

Director, Climate Science Program, 2008-

Interim Faculty Director, University Honors Program, 2006-2008

Professor of Meteorology, Dept. of Geological & Atmospheric Sciences, 1983-

Professor of Agricultural Meteorology, Dept. of Agronomy, 1983-

Professor of Aerospace Engineering (courtesy appt.), Dept. Aerospace Engineering 2007-

Associate Professor, 1976-1983

Assistant Professor, 1971-1976

### **c. Publications last 3 years**

Wu, F., D. Bhatnagar, T. Bui-Klimke, I. Carbone, R. Hellmich, G. Munkvold, P. Paul, G. Payne, E. S. Takle, and C. Woloshuk, 2010: Climate change impact on mycotoxin risks in US Maize. Submitted to the *World Mycotoxin Journal*, July 2010.

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*. (in press)

Gutowski, William J. Jr., Raymond W. Arritt, Sho Kawazoe, David M. Flory, Eugene S. Takle, Sébastien Biner, Daniel Caya, Richard G. Jones, René Laprise, L. Ruby Leung, Linda O. Mearns, Wilfran Moufouma-Okia, Ana M. B. Nunes, Yun Qian, John O. Roads, Lisa C. Sloan, and Mark A. Snyder., 2010: Regional, Extreme Monthly Precipitation Simulated by NARCCAP RCMs. *J. Hydromet* (in press)

Breakah, T., R. C. Williams, D. E. Herzmann, and E. S. Takle, 2010: The effects of utilizing accurate climatic conditions for mechanistic empirical pavement design, a case study. Accepted by *Journal of Transportation Engineering*

Wang, S.-Y., T.-C. Chen, and E. S. Takle, 2010: Climatology of summer midtropospheric perturbations in the U.S. Northern Plains. Part II: Large-scale effects of terrain boundary layer on genesis. *Clim Dynamics*, DOI: 10.1007/s00382-010-0765-7.

Lu, E., and E. S. Takle: 2010: Concurrent variations of water vapor and temperature corresponding to the interannual variation of precipitation in the North American Regional Reanalysis, *J. Geophys. Res.*, doi:10.1029/2009JD012956.

Takle, E. S., 2010: Was climate change involved? Chapter 12. In Mutel, C. ed., *A Watershed Year: Anatomy of the Iowa Floods of 2008*. University of Iowa Press. 250 pp.

- Lu, E., E. S. Takle, M. Jha, 2010: The relationships between climatic and hydrological changes in the Upper Mississippi River Basin: A SWAT and multi-GCM study. *J. Hydrometeor.*, **11**, 437-451. doi:10.1175/2009JHM1150.1.
- Pan, Z., D. Andrade, M. Segal, J. Wimberley, N. McKinney, and E. S. Takle, 2010: Uncertainty in future soil carbon trends at a central US site under an ensemble of GCM scenario climates. *Ecological Modeling*, **221**, 876-881. doi:10.1016/j.ecolmodel.2009.11.013
- Lu, Er, E. S. Takle, and Y. Wang, 2010: Spatial variabilities and their relationships of the trends of temperature, water vapor, and precipitation in the North American Regional Reanalysis. *J. Geophys Res.* **115**, D06110, 11pp. doi:10.1029/2009JD013192
- 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.
- Singh, Ranvir, Matthew J. Helmers, Amy Kaleita, and Eugene S. Takle, 2009: Potential impact of climate change on subsurface drainage in Iowa's subsurface drained landscapes. *Journal of Irrigation and Drainage Engineering*, July/August 2009, 459-466. DOI: 10.1061/ASCE IR.1943-4774.00000009
- Carbone, R. E., J. Block, S. E. Boselly, G. R. Carmichael, F. H. Carr, V. Chandrasekar, E. Gruntfest, R. M. Hoff, W. F. Krajewski, M. A. Lemone, J. Purdom, T. W. Schlatter, E. S. Takle, J. Titlow, 2009: *Observing Weather and Climate from the Ground Up: A Nationwide Network of Networks*. National Academies Press. Washington, DC. 268 pp.
- Wang, S.-Y., R. R. Gillies, E. S. Takle, and W. J. Gutowski, Jr., 2009: Characteristics of the Intermountain rainfall climatology simulated by the NARCCAP regional climate models. *Geophys. Res. Lett.*, **36**, 11, doi:10.1029/2009GL037930, 2009
- Munang, R., M. Rivington, G. Takle, B. Mackey, and J. Liu, 2009: Climate information and capacity needs for ecosystem management under Changing Climate. White Paper prepared for World Climate Conference – 3. Geneva Switzerland, 31 Aug – 4 Sept 2009. 42 pp. [Available online at <http://www.unep.org/ecosystemmanagement/LinkClick.aspx?fileticket=zkd1Lw6bM5c%3D&tabid=311&mid=670&language=en-US>]
- Takle, E. S., and S. C. Pryor, 2008: Where is climate science in the Midwest going? Chapter 24. In S. C. Pryor, ed., *Understanding Climate Change: Climate Variability, Predictability and Change in the Midwestern United States*. Indiana University Press. 312 pp.
- Takle, E. S., M. Jha, and E. Lu, 2008: Climate change and streamflow in the Upper Mississippi River Basin. Chapter 12. In S. C. Pryor, ed., *Understanding Climate Change: Climate Variability, Predictability and Change in the Midwestern United States*. Indiana University Press. 312 pp.
- Pryor, S. C., and E. S. Takle, 2008: Climate variability, predictability and change in the Midwestern USA: An introduction. Chapter 1. In S. C. Pryor, ed., *Understanding Climate Change: Climate Variability, Predictability and Change in the Midwestern United States*. Indiana University Press. 312 pp.
- Gutowski, William J., Jr., Stephanie S. Willis, Jason C. Patton, Benjamin R. J. Schwedler, Raymond W. Arritt, and Eugene S. Takle, 2008: Changes in extreme, cold-season synoptic precipitation events under global warming. *Geophys. Res. Lett.*, **35**, L20710, doi:10.1029/2008GL035516.
- Takle, E. S., J. Roads, B. Rockel, W. J. Gutowski, Jr., 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.

- Gutowski, W. J., Jr., K. A. Kozak, R. W. Arritt, J. H. Christensen, J. C. Patton, and E. S. Takle, 2007: A possible constraint on regional precipitation intensity changes under global warming. *J. Hydromet.*, 8, 1382-1412.
- Zhou, X. H., J. R. Brandle, E. S. Takle, and C. W. Mize, 2007: Relationship of three-dimensional structure to shelterbelt function: A theoretical hypothesis. In Batish, D. R., R. K. Kohi, S. Jose, and H. P. Singh, eds., 2007: *Ecological Basis of Agroforestry*. CRC Press. Pp. 273-286.
- Mize, C, J. Colletti, W. Batchelor, J.S. Kim, E.S. Takle, and J.R. Brandle. 2007. Modeling a field shelterbelt system with the shelterbelt agroforestry modeling system. In Batish, D. R., R. K. Kohi, S. Jose, and H. P. Singh, eds., 2007: *Ecological Basis of Agroforestry*. CRC Press. Pp 287-299.

(ii) Five other significant publications

- 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.
- 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.
- 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., and Z. Pan, 2005: Climate Change and Crop Production: Challenges to Modeling Future Scenarios. In Lal, R., N. Uphoff, B. A. Stewart, and D. O. Hansen, 2005, ed., *Climate Change and Global Food Security*. Taylor & Francis. 383-403.

**d. Synergistic Activities**

Dr. Takle is Trustee of the University Corporation for Atmospheric Research and Commissioner for Education and Human Resources of the American Meteorological Society. He is Atmospheric Science Editor of **Earth Science Reviews** and Associate Editor of **Journal of Applied Meteorology and Climatology**. He was co-author of Ch 5 *Ecosystems and their Goods and Services* of the **WG II IPCC 2001 Report**. With R. Arritt and W. Gutowski he co-directs the Regional Climate Modeling Laboratory at ISU which has a central role in the North American Regional Climate Change Assessment Program funded by NSF. He was a member of the National Research Council study committee that produced the study entitled *Observing Weather and Climate from the Ground Up: A Nationwide Network of Networks*. National Academies Press. Washington, DC. 268 pp. He was convenor of the workshop: Communicating Information for Decision-Makers: Climate Change at the Regional Scale. *Climate Change: Science and Solutions*. 8<sup>th</sup> National Conference on Science, Policy, and the Environment. National Council for Science and the Environment.

**e. Collaborators & Other Affiliations**

**(i) Collaborators**

LO Mearns, D Bader, P Duffy, W Kuo, R Lueng, D Middleton, D Nychka, L Sloan, S Sain, CG Jones, B Rockel, I Meinke, A Zadra, Z Pan, K Hibbard, BE Law, M Ryan, CJ Anderson, D

Caya, JH Christensen, D Luthi, MA Gaertner, C Gallardo, F Giorgi, S-Y Hong, HMH. Juang, J J. Katzfey, WM Lapenta, R Laprise, JW Larson, GE. Liston, JL McGregor, RA Pielke, Sr., JA Taylor, LE Hay, MP Clark, RL Wilby, GH Leavesley, KE Kunkel, EK Andsager, X-Z Liang, S-Y Wang, RR Gillies, B Schwedler, JC Patton, SJ Willis, M Jha, R Singh, MJ Helmers, A Kaleita, SC Pryor, RJ Barthelmie, DT Young, E Lu, RW Arritt, WJ Gutowski, S-Y Wang, T-C Chen, Y Wang, D Andrade, M Segal, J Wimberley, N McKinney, RR Gilles, RE Carbone, J Block, SE Boselly, GR Carmichael, FH Carr, V Chandrasekar, E Grutfest, RM Hoff, WF Krejewski, MA Lemone, J Purdom, TW Schlatter, J Titlow, CW Mize, JR Brandle, W Batchelor, JS Kim, CJ Colletti, XH Zhou, KA Kozak, PW Gassman, DJ Wuebbles, CL Kling, WA Gallus

**(ii) Graduate and Postdoctoral Advisors**

John L. Stanford (retired)

**(iii) Thesis Advisor and Postgraduate-Scholar Sponsor**

Larry Alfred, Dennis L. Becker, Marla Sanders Taylor, L. P. Chang, Randy D. Russell, Warren E. Heilman,, Jerome D. Fast, Amy Moser Carlson, Jon Reisner, Wenbi Yu, Shiyuan Zhong, Adoum Alkhalil, Xindi Bian, Jeff Padin, Paul Thomson, Youngtae Kim, Zaitao Pan, Kandis Boyd, Michael R. Taber, Kathryn J. St. Croix, Hao Wang, David S. Knollhoff, Manoj Jha, Tina Greenfield, Michael Falk, Christopher Anderson, Le Ly, Eric Lu.