

Ethan Gutmann

National Center for Atmospheric Research
PO Box 3000
Boulder, CO 80307-3000
(303)579-0206
gutmann@ucar.edu
<http://ethangutmann.com>

- EDUCATION
- ◇ **University of Colorado**, Boulder, CO.
 - Ph.D. in Geology: 2008
 - Doctoral Dissertation: *Determination of Soil Hydraulic Properties from Remotely Sensed Surface Temperature*
 - M.Sc. in Geology: 2002
 - Master's Thesis: *Mapping the Potential for Eolian Surface Activity in Grasslands of the High Plains using Landsat Images.*
 - ◇ **Williams College**, Williamstown, MA.
 - B.A. in Geology and Computer Science, 1999, Cum Laude with Highest Honors
 - Honors Thesis: *Diagenetic Quartz Pebble Conglomerates : Theory and Methods of Analysis.*
- AWARDS & FELLOWSHIPS
- ◇ **NCAR Advanced Studies Program Postdoctoral Fellowship** (2008 – 2010)
 - ◇ **AGU Outstanding Student Paper Award** (2004, 2005, 2007)
 - ◇ **Keck Fellowship** (1999 – 2000)
- WORK EXPERIENCE
- ◇ **Associate Scientist III**, National Center for Atmospheric Research (2010 – present)
 - ◇ **Postdoctoral Researcher**, National Center for Atmospheric Research (2008 – 2010)
 - ◇ **Freelance Writer**, ArsTechnica.com (2008 – 2010)
 - ◇ **Research Assistant**, Department of Geological sciences, (2003 – 2008)
 - ◇ **Consultant**, Research Systems Inc., (2003 – 2004)
 - ◇ **Software Engineer**, Independent (1999)
- TEACHING EXPERIENCE
- ◇ **Instructor**, University of Colorado (Spring 2009)
 - Course: *Writing in Geosciences*
 - ◇ **Instructor**, University of Colorado (Spring 2007)
 - Course: *Introduction to Geology*
 - ◇ **Teaching Assistant**, University of Colorado (Fall 2000 – Spring 2003)
 - Courses: *Remote Sensing of the Environment,*
Remote Sensing Data Analysis
 - ◇ **Teaching Assistant**, Williams College (1998-1999)
 - Courses: *Introduction to Computer Networking,*
Climates Through Time
- SERVICE
- ◇ **Associate Editor** : Monthly Weather Review (2013)
 - ◇ **Reviewer** : *Remote Sensing of Environment, Water Resources Research, Geophysical Research Letters, Journal of Climate, Monthly Weather Review, Journal of Hydrometeorology, Journal of Glaciology, Journal of Hydrology, Hydrologic and Earth System Science, Journal of Applied Meteorology and Climatology (various)*
 - ◇ **Workshop Organizer** : *Orographic Precipitation and Climate Change (2012)*

◇ **Committees:** *ASP Thompson Lecture Series, ASP Seminar Series (2008 – 2010)*

PROFESSIONAL SOCIETIES American Geophysical Union
American Meteorological Society
Sigma Xi

- PUBLICATIONS **Gutmann, E. D.**, Pruitt, T., Clark, M. P., Brekke, L., Arnold, J., Raff, D., and Rasmussen, R. M. (submitted)
An intercomparison of statistical downscaling methods over the contiguous United States. *Journal of Hydrometeorology*.
- Biederman, J. A., Brooks, P. D., Harpold, A. A., **Gutmann, E.**, Gochis, D. J., Reed, D. E., Pendall, E. (2012)
Multi-scale Observations of Snow Accumulation and Peak Snowpack Following Widespread, Insect-induced Lodgepole Pine Mortality. *Ecology*, doi: 10.1002/ece.1342
- Edburg, S.L., J.A. Hicke, P.D. Brooks, E.G. Pendall, B. E. Ewers, U. Norton, D. Gochis, and **E. Gutmann**, (2012)
Cascading Impacts of Bark Beetle-Caused Tree Mortality to Coupled Biogeophysical and Biogeochemical Processes, *Frontiers Ecology and Environment* doi:10.1890/110173
- Gutmann, E.D.**, Larson, K. M., Williams, M. W., Nievinski, F. G. and Zavorotny, V. (2012)
Snow measurement by GPS interferometric reflectometry: an evaluation at Niwot Ridge, Colorado. *Hydrol. Process.*, 26: 2951–2961. doi:10.1002/hyp.8329
- Gutmann, E.D.**, Roy M. Rasmussen, Changhai Liu, Kyoko Ikeda, David J. Gochis, Martyn P. Clark, Jimmy Dudhia, Gregory Thompson, (2012)
A comparison of statistical and dynamical downscaling of winter precipitation over complex terrain. *J. Climate*, 25, 262–281. doi:10.1175/2011JCLI4109.1
- Rasmussen, R., Baker, B., Kochendorfer, J., Meyers, T., Landolt, S., Fischer, A. P., Black, J., Thériault, J. M., Kucera, P., Gochis, D., Smith, C., Nitu, R., Hall, M., Ikeda, K., and **Gutmann, E.** (2011)
How well are we measuring snow: The NOAA/FAA/NCAR winter precipitation test bed. *Bul.Am.Met.Soc.*, 93(6):811–829.
- Rasmussen, R., Liu, C., Ikeda, K., Gochis, D., Yates, D., Chen, F., Tewari, M., Barlage, M., Dudhia, J., Yu, W., Miller, K., Arsenault, K., Grubisic, V., Thompson, G., and **Gutmann, E.** (2011)
High-resolution coupled climate runoff simulations of seasonal snowfall over Colorado: A process study of current and warmer climate. *J. of Climate*, 24(12):3015–3048.
- Ikeda, K., Rasmussen, R., Liu, C., Gochis, D., Yates, D., Chen, F., Tewari, M., Barlage, M., Dudhia, J., Miller, K., Arsenault, K., Grubisic, V., Thompson, G., **Gutmann, E.** (2010)
Simulation of seasonal snowfall over Colorado. *Atmospheric Research*, 97(4), 462–477, doi:10.1016/j.atmosres.2010.04.010
- Gutmann, E. D.**, and E. E. Small (2010)
A method for the determination of the hydraulic properties of soil from MODIS surface temperature for use in land-surface models, *Water Resour. Res.*, 46, W06520, doi:10.1029/2009WR008203.
- Larson, KM; Braun, J; Small, EE; Zavorotny, V; **Gutmann, ED**; Bilich, A (2009)
Determination of GPS soil penetration depth and its relation to soil moisture *IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing*, doi:10.1109/JSTARS.2009.2033612
- Zavorotny, V; Larson, KM; Braun, J; Small, EE; **Gutmann, ED**; Bilich, A (2009)
A Physical Model for GPS Multipath Caused by Land Reflections: Toward Soil Moisture Retrievals, *IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing*, doi:10.1109/JSTARS.2009.2033608

- Larson, KM; **Gutmann, ED**; Zavorotny, V; Braun, J; Williams, M; Nievinski, F (2009)
Can we measure snow depth with GPS Receivers?
Geophysical Research Letters, 36, L17502, doi:10.1029/2009GL039430
- Larson, KM; Small, EE; **Gutmann, ED**; Bilich, A; Axelrad, P; Braun, J;
Zavorotny, V (2008)
Use of GPS receivers as a soil moisture network for water cycle studies
Geophysical Research Letters, 35, L24405, doi:10.1029/2008GL036013
- Larson, KM; Small, EE; **Gutmann, ED**; Bilich, A; Axelrad, P; Braun, J (2008)
Using GPS multipath to measure soil moisture fluctuations: Initial results
GPS Solutions, doi:10.1007/s10291-007-0076-6
- Gutmann, ED** and Small, EE (2007)
A comparison of land surface model soil hydraulic properties estimated by inverse modeling and pedotransfer functions
Water Resources Research, v.43(5) W05418, doi:10.1029/2006WR005135
- Vachon, RW; White, JW; **Gutmann, ED**; Welker, JM (2007)
Amount-weighted annual isotopic ($\delta^{18}\text{O}$) values are affected by the seasonality of precipitation: A sensitivity study
Geophysical Research Letters, 34, L21707, doi:10.1029/2007GL030547
- Gutmann, ED** and Small, EE (2005)
The effect of soil hydraulic properties vs. soil texture in land surface models
Geophysical Research Letters, v.32 L02402, doi:10.1029/2004GL021843
- Cox, R; **Gutmann, ED**; Hines, PG (2002)
Diagenetic origin for quartz-pebble conglomerates
Geology, v.30 no.4, p.323-326
- Cox, R; Atkinson, RK; Bear, BR; Brandriss, ME; Chokel, CB; Comstock, JC;
Gutmann, ED; Interest, LB; Schildgen, TF; Teplitzky, SJ; Willis, MP (2000)
Changes in a fringing reef complex over a thirty-year period: coral loss and lagoon infilling at Mary Creek, St. John, U.S. Virgin Islands
Bulletin of Marine Science, v.66, no.1, p.269-277