Daniel Short Gianotti

water, energy, carbon, weather & climate

contact

Parsons Laboratory 15 Vassar St. MIT Building 48 Cambridge, MA United States

subjects

water-energy-carbon
cycle coupling
terrestrial climate
feedbacks
climate predictability
stochastic methods
hydroclimatology
remote sensing
ecohydrology

current position

2016-Present Postdoctoral Associate

Massachusetts Institute of Technology

Parsons Laboratory, Department of Civil & Environmental Engineering

education

2011-2016 **PhD in Geography and Environment**

Boston University

Dissertation Title: The Potential Predictability of Precipitation over the

Continental United States

Link: https://hdl.handle.net/2144/19726

Defense Date: August 9, 2016

Committee: Bruce T. Anderson (primary advisor), Guido D. Salvucci,

Michael C. Dietze, Dara Entekhabi, & Anthony C. Janetos (chair)

1999-2003 BS in Mathematics

Harvey Mudd College

publications & talks

Manuscripts in Progress

resubmitted

Global timescales of plant water response to soil moisture pulses

New Phytologist

Feldman, AF, DJ Short Gianotti, AG Konings, P Gentine, & D Entekhabi, "Global timescales of plant water response to soil moisture pulses," *Resubmitted* to New Phytologist.

in revision

Historical landscape drainage estimates derived from satellite-era hydrological dynamics

Water Resources Research

Akbar, R, DJ Short Gianotti, GD Salvucci, & D Entekhabi, "Historical landscape drainage estimates derived from satellite-era hydrological dynamics," *In revision* in Water Resources Research.

resubmitted

Ecosystem plant water content and carbon flux Water Resources Research behavior following moisture pulses: from dryland to mesic environments

Feldman, AF, J Chulakadabba, DJ Short Gianotti, & D Entekhabi, "Ecosystem plant water content and carbon flux behavior following moisture pulses: from dryland to mesic environments," *Resubmitted* to Water Resources Research.

submitted

A kernel-auto-regressive weather generator for Water Resources Research improved subseasonal-to-seasonal precipitation statistics

Short Gianotti, DJ, GD Salvucci, & BT Anderson, "A kernel-auto-regressive weather generator for improved subseasonal-to-seasonal precipitation statistics," *Submitted* to Water Resources Research.

Preprint: https://doi.org/10.1002/essoar.10503866.1

Published Journal Articles

2020b Value of chlorophyll fluorescence for quantifying hydrological states and fluxes: Current status and challenges

Agricultural and Forest Meteorology

Jonard, F, S DeCannière, N Brüggemann, P Gentine, DJ Short Gianotti, G Lobet, DG Miralles, C Montzka, BR Pagán, U Rascher, & H Vereecken (2020), "Value of chlorophyll fluorescence for quantifying hydrological states and fluxes: Current status and challenges," Agricultural and Forest Meteorology 291. https://doi.org/10.1016/j.agrformet.2020.108088

2020a Terrestrial evaporation and moisture drainage in a warmer climate

Geophysical Research Letters

Short Gianotti, DJ, R Akbar, AF Feldman, GD Salvucci, & D Enthekabi (2020), "Terrestrial evaporation and moisture drainage in a warmer climate," Geophysical Research Letters, 47. https://doi.org/10.1029/2019GL086498

Preprint: https://doi.org/10.1002/essoar.10501441.1

2019d Satellite-based assessment of land surface energy partitioning-soil moisture relationships and effects of confounding variables

Water Resources Research

Feldman, AF, DJ Short Gianotti, I Trigo, GD Salvucci, & D Entekhabi (2019), "Satellite-based assessment of land surface energy partitioning-soil moisture relationships and effects of confounding variables," Water Resources Research 55, 10657–10677. https://doi.org/10.1029/2019WR025874

2019c Landscape water storage and subsurface correlation from satellite surface soil moisture and precipitation observations

Water Resources Research

Short Gianotti, DJ, GD Salvucci, R Akbar, K McColl, & D Entekhabi (2019), "Landscape water storage and subsurface correlation from satellite surface soil moisture and precipitation observations," Water Resources Research 55, 9111–9132. https://doi.org/10.1029/2019WR025332

2019b Mapped hydroclimatology of evapotranspiration and drainage runoff using SMAP brightness temperature observations

SMAP brightness temperature observations and precipitation information

Akbar, R. D.I. Short, Gianotti, GD, Salvucci, & D, F.

Akbar, R, DJ Short Gianotti, GD Salvucci, & D Entekhabi (2019), "Mapped hydroclimatology of evapotranspiration and drainage runoff using SMAP brightness temperature observations and precipitation information," Water Resources Research 55, 3391–3413. https://doi.org/10.1029/2018WR024459

2019a Satellite and station observations demonstrate Water Rewarder availability's effect on continental-scale evaporative and photosynthetic land surface dynamics

Water Resources Research

Water Resources Research

Short Gianotti, DJ, AJ Rigden, GD Salvucci, & D Entekhabi (2019), "Satellite and station observations demonstrate water availability's effect on continental-scale evaporative and photosynthetic land surface dynamics," Water Resources Research 55, 540–554. https://doi.org/10.1029/2018WR023726

2018e Pulse-response vegetation water uptake is persistent Nature Plants across biomes

Feldman, AF, DJ Short Gianotti, AG Konings, KA McColl, R Akbar, GD Salvucci, & D Entekhabi (2018), "Pulse-response vegetation water uptake is persistent across biomes," Nature Plants 4 (12), 1026–1033. https://doi.org/10.1038/s41477-018-0304-9

2018d Partitioning evapotranspiration over the continental United States using weather station data

Geophysical Research Letters

Rigden, AJ, GD Salvucci, D Entekhabi, & DJ Short Gianotti (2018), "Partitioning evapotranspiration over the continental United States using weather station data," Geophysical Research Letters 45 (18), 9605–9613. https://doi.org/10.1029/2018GL079121

2018c Estimation of landscape soil water losses Jou from satellite observations of soil moisture

Journal of Hydrometeorology

Akbar, R, DJ Short Gianotti, KA McColl, E Haghighi, GD Salvucci, & D Entekhabi (2018), "Estimation of landscape soil water losses from satellite observations of soil moisture," Journal of Hydrometeorology 19 (5), 871–889. https://doi.org/10.1175/JHM-D-17-0200.1

2018b Hydrological storage length- scales represented by remote sensing estimates of soil moisture and precipitation

Water Resources Research

Akbar, R, DJ Short Gianotti, KA McColl, E Haghighi, GD Salvucci, & D Entekhabi (2018), "Hydrological storage length- scales represented by remote sensing estimates of soil moisture and precipitation," Water Resources Research 54 (3), 1476–1492. https://doi.org/10.1002/2017WR021508

2018a Soil and atmospheric controls on the land surface energy balance: A generalized framework for distinguishing moisture- and energy-limited evaporation regimes

Water Resources Research

Haighighi, E, DJ Short Gianotti, R Akbar, GD Salvucci, & D Entekhabi (2018), "Soil and atmospheric controls on the land surface energy balance: A generalized framework for distinguishing moisture- and energy-limited evaporation regimes," Water Resources Research 53 (3), 1831–1851. https://doi.org/10.1002/2017WR021729

2017b Global characterization of surface soil moisture drydowns

Geophysical Research Letters

McColl, K, W Wang, B Peng, R Akbar, D Short Gianotti, M Pan, & D Entekhabi (2017), "Global characterization of surface soil moisture drydowns," Geophysical Research Letters 44 (8), 3682–3690. https://doi.org/10.1002/2017GL072819

2017a Tracking the Pacific Decadal Precession

Journal of Geophysical Research: Atmospheres

Anderson, BT, JC Furtado, E Di Lorenzo, DJ Short Gianotti (2017), "Tracking the Pacific Decadal Precession," Journal of Geophysical Research: Atmospheres 122 (6) 3214–3227. https://doi.org/10.1002/2016JD025962

2016b Dominant timescales of potentially predictable precipitation variations across the continental United States

Journal of Climate

Anderson, BT, DJ Short Gianotti, GD Salvucci, & J Furtado (2016), "Dominant timescales of potentially predictable precipitation variations across the continental United States," Journal of Climate 29, 8881–8897. https://doi.org/10.1175/JCLI-D-15-0635.1

2016a A decadal precession of atmospheric pressures over the North Pacific

Geophysical Research Letters

Anderson, BT, DJ Short Gianotti, J Furtado, & E Di Lorenzo (2016), "A decadal precession of atmospheric pressures over the North Pacific," Geophysical Research Letters 43 (8) 3921–3927. https://doi.org/10.1002/2016GL068206

2015c Detectability of historical trends in station-based precipitation characteristics over the continental United States

Journal of Geophysical Research

Anderson, BT, DJ Short Gianotti, & GD Salvucci (2015), "Detectability of historical trends in station-based precipitation characteristics over the continental United States," Journal of Geophysical Research 120 (10) 4842–4859. https://doi.org/10.1002/2014JD022960

2015b Changes in Autumn Senescence in Northern Hemisphere Deciduous Trees: a Meta-Analysis of **Autumn Phenology Studies**

Gill, AL, AS Gallinat, R Sanders-DeMott, AJ Rigden, DJ Short Gianotti, JA Mantooth, & PH Templer (2015), "Changes in Autumn Senescence in Northern Hemisphere Deciduous Trees: a Meta-Analysis of Autumn Phenology Studies," Annals of Botany, (Special Issue on Plants and Climate Change) 116, 875-888. https://doi.org/10.1093/aob/mcv055

2015a Characterizing the potential predictability of seasonal, station-based heavy precipitation accumulations and extreme dry-spell durations

Journal of Hydrometeorology

Annals of Botany

Anderson, BT, D Gianotti, & G Salvucci (2015), "Characterizing the potential predictability of seasonal, station- based heavy precipitation accumulations and extreme dry-spell durations," Journal of Hydrometeorology 16 (2) 843-856. https://doi.org/10.1175/JHM-D-14-0111.1

2014a The Potential Predictability of Precipitation Occurrence, Intensity, and Seasonal Totals over the **Continental United States**

Journal of Climate

Short Gianotti, DJ, BT Anderson, & GD Salvucci (2014), "The Potential Predictability of Precipitation Occurrence, Intensity, and Seasonal Totals over the Continental United States," Journal of Climate 27 (18), 6904–6918. https: //doi.org/10.1175/JCLI-D-13-00695.1

2013b Shifting seasonality and increasing frequency of precipitation in wet and dry seasons across the US

Geophysical Research Letters

Journal of Climate

Pal, I, BT Anderson, GD Salvucci, & DJ Gianotti (2013), "Shifting seasonality and increasing frequency of precipitation in wet and dry seasons across the US," Geophysical Research Letters 40 (15), 4030–4035. https://doi.org/10. 1002/grl.50760

2013a What Do Rain Gauges Tell Us about the Limits of **Precipitation Predictability?**

> Gianotti, D, BT Anderson, & GD Salvucci (2013), "What Do Rain Gauges Tell Us about the Limits of Precipitation Predictability?" Journal of Climate 26 (15), 5682-5688. https://doi.org/10.1175/JCLI-D-12-00718.1

Conference Presentations

* denotes presenting author

2019 Land Surface Fluxes and Hydrologic Sensitivities in a Warmer Climate

American Geophysical Union Fall Meeting

Short Gianotti, DG*, R Akbar, AF Feldman, GD Salvucci & D Entekhabi (2019) "Land Surface Fluxes and Hydrologic Sensitivities in a Warmer Climate," American Geophysical Union Fall Meeting: H54G-08, San Francisco, CA.

2019	Satellite-based assessment of land surface energy partitioning-soil moisture relationships and effects of confounding variables American Geophysical Union Fall Meeting
	Feldman, AF*, DJ Short Gianotti, IF Trigo, GD Salvucci, & D Entekhabi (2019) "Satellite-based assessment of land surface energy partitioning-soil moisture relationships and effects of confounding variables," American Geophysical Union Fall Meeting: H53F-05, San Francisco, CA.
2019	The impact of higher-than-radiometer resolution landscape and weather features on SMAP product American Geophysical Union Fall Meeting
	Li, Y*, H Lu, D Entekhabi, & DJ Short Gianotti (2019) "The impact of higher-than-radiometer resolution landscape and weather features on SMAP product," American Geophysical Union Fall Meeting: H51S-1771, San

2019 Surface-Subsurface Linkages Derived From SMAP Science Team Meeting SMAP Time Series

Francisco, CA.

- Short Gianotti, DG, GD Salvucci, R Akbar, R Cuenca, & D Entekhabi* (2019) "Surface-Subsurface Linkages Derived From SMAP Time Series," SMAP Science Team Meeting #13, Arcadia, CA.
- 2019 Consequences of the Acceleration of Water Cycle on Surface Water Balance Components
 Using SMAP Observations

 SMAP Science Team Meeting
 - Short Gianotti, DG, R Akbar, AF Feldman, GD Salvucci, & D Entekhabi* (2019) "Consequences of the Acceleration of Water Cycle on Surface Water Balance Components Using SMAP Observations," SMAP Science Team Meeting #13, Arcadia, CA.
- 2019 Decadal Distribution of ET and Drainage
 Based on SMAP Based Hydrologic
 Analogues and Historical Precipitation

 SMAP Science Team Meeting
 - Entekhabi*, D, R Akbar, & DJ Short Gianotti (2019) "Decadal Distribution of ET and Drainage Based on SMAP Based Hydrologic Analogues and Historical Precipitation," SMAP Science Team Meeting #13, Arcadia, CA.
- 2019 Seasonal Hydroclimatology of ET and SMAP Science Team Meeting Drainage from SMAP TB and Precipitation
 - Akbar, R, DJ Short Gianotti, GD Salvucci, & D Entekhabi (2019) "Seasonal Hydroclimatology of ET and Drainage from SMAP TB and Precipitation," SMAP Science Team Meeting #13, Arcadia, CA.
- 2019 Satellite-Based Assessment of Surface SMAP Science Team Meeting Energy Partitioning Soil Moisture Relationships
 - AF Feldman, DJ Short Gianotti, I Trigo, GD Salvucci, & D Entekhabi (2019) "Satellite-Based Assessment of Surface Energy Partitioning Soil Moisture Relationships," SMAP Science Team Meeting #13, Arcadia, CA.

2019 Estimating Surface Soil Moisture from AMSR2 TB with Artificial Neural Network Method and SMAP Products

IEEE Geoscience and Remote Sensing Society

Yao, P*, H Lu, S Yue, F Yang, H Lyu, K Yang, KA McColl, DJ Short Gianotti, & D Entekhabi (2019) "Estimating Surface Soil Moisture from AMSR2 TB with Artificial Neural Network Method and SMAP Products," IEEE Geoscience and Remote Sensing Society: Paper #2869, Yokohama, Japan.

2018 Hydrologic length scale of L-band radiometric soil moisture retrievals

American Geophysical Union Fall Meeting

Short Gianotti, DG*, GD Salvucci, KA McColl, R Akbar, & D Entekhabi (2018) "Hydrologic length scale of L-band radiometric soil moisture retrievals," American Geophysical Union Fall Meeting: H42G-02, Washington, DC.

2018 Water Exchange Patterns in the Soil-Plant Continuum Based on SMAP Microwave Satellite Measurements

American Geophysical Union Fall Meeting

Feldman, AF*, DJ Short Gianotti, AG Konings, KA McColl, R Akbar, GD Salvucci, & D Entekhabi (2018) "Water Exchange Patterns in the Soil-Plant Continuum Based on SMAP Microwave Satellite Measurements," American Geophysical Union Fall Meeting: B53D-06, Washington, DC.

2018 Estimating Surface Soil Moisture from AMSR2 TB with Machine Learning Methods and SMAP Products

American Geophysical Union Fall Meeting

Lu, H, F Yang, H Lyu, K Yang*, KA McColl, DJ Short Gianotti, & D Entekhabi (2018) "Estimating Surface Soil Moisture from AMSR2 TB with Machine Learning Methods and SMAP Products," American Geophysical Union Fall Meeting: H51W-1649, Washington, DC.

2018 Partitioning evapotranspiration over the continental United States using SMAP observations and weather station data

American Geophysical Union Fall Meeting

Salvucci, GD*, AJ Rigden, D Entekhabi, & DJ Short Gianotti (2018) "Partitioning evapotranspiration over the continental United States using SMAP observations and weather station data," American Geophysical Union Fall Meeting: H41F-01, Washington, DC.

2018 Water Use Efficiency Dependence on Soil Moisture

Science Utilization of SMAP Meeting

Short Gianotti, DJ, GD Salvucci, AJ Rigden, & D Entekhabi (2018) "Water Use Efficiency Dependence on Soil Moisture," Science Utilization of SMAP Meeting #2, Arcadia, CA. 2018 Water Exchange Patterns in the Soil-Plant Science Utilization of SMAP Meeting **Continuum Based on SMAP Microwave** Satellite Measurements Feldman, AF*, DJ Short Gianott, AG Konings, KA McColl, R Akbar, GD Salvucci, & D Entekhabi (2018) "Water Exchange Patterns in the Soil-Plant Continuum Based on SMAP Microwave Satellite Measurements," Science Utilization of SMAP Meeting #2, Arcadia, CA. 2018 Linkages between water, energy and carbon SMAP End of Prime Mission Science Meeting cycles revealed by SMAP Short Gianotti, DJ, GD Salvucci, AJ Rigden, & D Entekhabi* (2018) "Linkages between water, energy and carbon cycles revealed by SMAP," SMAP End of Prime Mission Science Meeting, Jet Propulsion Laboratory, Pasadena, CA.

2018 Estimation of ecosystem-scale soil water losses from satellite observations of soil moisture

SMAP End of Prime Mission Science Meeting

Akbar, R, Short Gianotti, DJ*, K McColl, E Haghighi, GD Salvucci, & D Entekhabi (2018) "Estimation of ecosystem- scale soil water losses from satellite observations of soil moisture," SMAP End of Prime Mission Science Meeting, Jet Propulsion Laboratory, Pasadena, CA.

2017 Effects of water availability through the coupled land-atmosphere system

American Geophysical Union Fall Meeting

Short Gianotti, DJ*, AJ Rigden, GD Salvucci, & D Entekhabi (2017) "Effects of water availability through the coupled land-atmosphere system," American Geophysical Union Fall Meeting: H12G-07, New Orleans, LA.

2017 What determines transitions between energyand moisture-limited evaporative regimes? American Geophysical Union Fall Meeting

Haghighi, E*, Short Gianotti, DJ, R Akbar, GD Salvucci, & D Entekhabi (2017) "What determines transitions between energy- and moisture-limited evaporative regimes?" American Geophysical Union Fall Meeting: H44C-07, New Orleans, LA.

2017 Soil moisture (SMAP) and vapor pressure deficit controls on evaporation fraction over the Continental U.S.

American Geophysical Union Fall Meeting

Salvucci, GD*, AJ Rigden, DJ Short Gianotti, & D Entekhabi (2017) "Soil moisture (SMAP) and vapor pressure deficit controls on evaporation fraction over the Continental U.S.," American Geophysical Union Fall Meeting: H12G-01, New Orleans, LA.

2017 Soil moisture controls on water/energy/carbon Science Utilization of SMAP coupling Meeting

Short Gianotti, DJ*, AJ Rigden, GD Salvucci, & D Entekhabi (2017) "Soil moisture controls on water/energy/carbon coupling," Science Utilization of SMAP Meeting, Cambridge, MA.

"Estimation of ecosystem-scale soil water losses from satellite observations of soil moisture," Science Utilization of SMAP Meeting, Cambridge, MA. 2017 The Science Applications of SMAP Science Utilization of SMAP Meeting Entekhabi, D*, SMAP Science Team, DJ Short Gianotti, Akbar, R, AJ Rigden, GD Salvucci, & JS Kimball (2017) "The Science Applications of SMAP," Science Utilization of SMAP Meeting, Cambridge, MA. 2016 Soil Moisture Controls on Evaporative American Geophysical Union Fall Meeting **Fraction** Short Gianotti, DJ*, AJ Rigden, GD Salvucci, & D Entekhabi (2016) "Soil Moisture Controls on Evaporative Fraction," American Geophysical Union Fall Meeting: H24C-03, San Francisco, CA. 2015 California Drought, Weather Variability, and AGU Chapman Conference on California Drought: Causes, **Climate Variability** Impacts, and Policy Short Gianotti, DJ*, GD Salvucci, & BT Anderson (2015) "California Drought, Weather Variability, and Climate Variability," AGU Chapman Conference on California Drought: Causes, Impacts, and Policy, Irvine CA. 2014 Characterizing weather and climate variability American Geophysical Union Fall Meeting for precipitation: A data-based stochastic modeling framework Short Gianotti, DJ*, BT Anderson, & GD Salvucci (2014) "Characterizing weather and climate variability for precipitation: A data-based stochastic modeling framework," American Geophysical Union Fall Meeting, San Francisco CA. 2014 Stochastic analysis of California's recent American Geophysical Union Fall Meeting precipitation drought in the context of the last one hundred years Short Gianotti, DJ*, BT Anderson, & GD Salvucci (2014) "Stochastic analysis of California's recent precipitation drought in the context of the last one hundred years," American Geophysical Union Fall Meeting, San Francisco CA.

Integrating satellite and tower phenology: a

case-study in real-time ecological forecasting

Dietze, M*, HE Emery, D Gergel, D Gianotti, JA Mantooth, & AJ Rigden (2014), "Integrating satellite and tower phenology: a case-study in real-time ecological forecasting" American Geophysical Union Fall Meeting, San Francisco CA.

Estimation of ecosystem-scale soil water

losses from satellite observations of soil

Akbar, R*, DJ Short Gianotti, E Haighighi, GD Salvucci, & D Entekhabi (2017)

Science Utilization of SMAP

American Geophysical Union

Fall Meeting

Meeting

2017

2014

moisture

Predicting phenology: A case-study in real-time ecological forecasting

Dietze, M*, HE Emery, D Gergel, D Gianotti, JA Mantooth, & AJ Rigden (2014), "Predicting phenology: A case-study in real-time ecological forecasting," Ecological Society of America Annual Meeting, Sacramento CA.

2013 Potential Predictability of Precipitation: Occurrence or Intensity?

Climate Diagnostic and Prediction Workshop

Gianotti, DJ*, BT Anderson, & GD Salvucci (2013), "Potential Predictability of Precipitation: Occurrence or Intensity?" 38th Climate Diagnostic and Prediction Workshop, College Park MD.

2012 Establishing Potential Predictability of U.S. Precipitation Using Rain Gauge Data

Climate Diagnostic and Prediction Workshop

Gianotti, DJ*, BT Anderson, & GD Salvucci (2012), "Establishing Potential Predictability of U.S. Precipitation Using Rain Gauge Data," 37th Climate Diagnostic and Prediction Workshop, Fort Collins CO.

2012 Magnitude and significance of observed trends in precipitation frequency over the U.S.

Climate Diagnostic and Prediction Workshop

Pal, I*, BT Anderson, G Salvucci, & D Gianotti (2012), "Magnitude and significance of observed trends in precipitation frequency over the U.S.," 37th Climate Diagnostic and Prediction Workshop, Fort Collins CO.

2012 Historical expansion of the summertime monsoon over the southwestern United States: What can regional models tell us about its causes?

Regional Spectral Modeling Workshop

Anderson, BT*, D Gianotti, & GD Salvucci (2012), "Historical expansion of the summertime monsoon over the southwestern United States: What can regional models tell us about its causes?" Regional Spectral Modeling Workshop, Scripps Institution of Oceanography, San Diego CA.

2012 Magnitude and significance of observed trends in precipitation frequency over the U

American Geophysical Union Fall Meeting

Pal, I*, BT Anderson, G Salvucci, & D Gianotti (2012), "Magnitude and significance of observed trends in precipitation frequency over the US," American Geophysical Union Fall Meeting, San Francisco CA.

2011 Stochastic and deterministic aspects of observed seasonal-mean precipitation variations and extreme event occurrences over the United States

American Geophysical Union Fall Meeting

Gianotti, D*, BT Anderson, & G Salvucci (2011), "Stochastic and deterministic aspects of observed seasonal-mean precipitation variations and extreme event occurrences over the United States," American Geophysical Union Fall Meeting, San Francisco CA.

2011 Detection of historical summertime monsoon precipitation variations and trends over the southwestern United States

WCRP Open Science Conference

Anderson, BT*, D Gianotti, & GD Salvucci (2011), "Detection of historical summertime monsoon precipitation variations and trends over the southwestern United States," WCRP Open Science Conference, Denver CO.

2011 Detection of historical precipitation variations and trends over the continental United States

Department of Energy Principal Investigators Meeting

Anderson, BT*, D Gianotti, & GD Salvucci (2011), "Detection of historical precipitation variations and trends over the continental United States," Department of Energy Principal Investigators Meeting, Washington DC.

2007 Upgrades to a wastewater lagoon treatment system in a rural sub- Arctic community in Alaska

International Symposium on Cold Region Development

Schubert, DH*, DJ Gianotti, & K Sauers (2007), "Upgrades to a wastewater lagoon treatment system in a rural sub- Arctic community in Alaska," International Symposium on Cold Region Development, Tampere Finland.

2007 Application of a Thermal-hydraulic Model to
Analyze and Design a Circulating Water System
in Alaska

International Symposium on Cold Region Development

Schubert, DH*, DJ Gianotti, & G Jones (2007), "Application of a Thermal-hydraulic Model to Analyze and Design a Circulating Water System in Alaska," International Symposium on Cold Region Development, Tampere Finland.

2005 Wastewater treatment lagoon design in rural Alaska

Alaska Water and Wastewater Management Association

Gianotti, DJ*, C Woolard, & D White (2005), "Wastewater treatment lagoon design in rural Alaska," 45th Alaska Water and Wastewater Management Association Annual Statewide Conference, Juneau AK.

Invited Talks, Seminars, and Non-Conference Presentations

- * denotes presenting author
- † denotes student advisee
- ‡ denotes invited talk

2020 Climatic Changes in Land Surface Evaporation and Drainage to Streams

Parsons Laboratory, MIT

Short Gianotti, DJ*, R Akbar, AF Feldman, GD Salvucci, D Entekhabi (2020) "Climatic Changes in Land Surface Evaporation and Drainage to Streams," Ralph M. Parsons Laboratory Remote Environmental Science Seminar Series, Massachusetts Institute of Technology.

2020	Thirsty plants: Tracking their water uptake from parsons Laboratory, MIT space
	Feldman, AF*, DJ Short Gianotti, AG Konings, P Gentine, D Entekhabi (2020) "Thirsty plants: Tracking their water uptake from space," Ralph M. Parsons Laboratory Remote Environmental Science Seminar Series, Massachusetts Institute of Technology.
2020	Water limitation and vegetation response Arnold Arboretum, Harvard University
	Short Gianotti, DJ* [‡] (2020) "Water limitation and vegetation response," Arnold Arboretum of Harvard University Research Talks Series, Arnold Arboretum.
2019	Water availability controls on vegetated Massachusetts Institute of ecosystems Massachusetts Institute of Technology
	Short Gianotti, DJ* (2019) "Water availability controls on vegetated ecosystems," Ralph M. Parsons Laboratory Environmental Science Seminar Series, Massachusetts Institute of Technology.
2019	Impacts of Soil Moisture on Ecosystem Carbon and Water Exchanges Massachusetts Institute of Technology
	Toft*†, N, N Lutz*†, DJ Short Gianotti, & D Entekhabi (2019) "Impacts of Soil Moisture on Ecosystem Carbon and Water Exchanges," Civil & Environmental Engineering Mini-UROP Presentations, Massachusetts Institute of Technology.
2016	The Potential Predictability of Precipitation over the Continental United States Boston University
	Short Gianotti, DJ* (2016) "The Potential Predictability of Precipitation over the Continental United States," Dissertation Defense, Boston University.
2015	Weather models for climate variability Boston University
	Gianotti, DJ* (2015) "Weather models for climate variability," Dept. of Earth & Env. Graduate Student Presentations, Boston University.
2014	Real weather, fake weather, and the California Drought Boston University
	Gianotti, DJ* (2014) "Real weather, fake weather, and the California Drought," Dept. of Earth & Env. Graduate Student Presentations, Boston University.
2012	How predictable is rain? Boston University
	Gianotti, DJ* (2012) "How predictable is rain?" Dept. of Geography & Env. Graduate Student Presentations, Boston University.
2012	Stochastic and deterministic aspects of observed Roston University

Gianotti, D*, BT Anderson, & G Salvucci (2012), "Stochastic and deterministic aspects of observed seasonal-mean precipitation variations and extreme event occurrences over the United States," Science and Engineering Research Symposium, Boston University.

seasonal-mean precipitation variations and extreme

event occurrences over the United States

Non-Refereed Research Documents

2007 Upgrades to a wastewater lagoon treatment system in a rural sub-Arctic community in Alaska

International Symposium on Cold Region Development

Schubert, DH, DJ Gianotti, & K Sauers (2007), "Upgrades to a wastewater lagoon treatment system in a rural sub-Arctic community in Alaska," Proceedings of the 8th International Symposium on Cold Region Development.

2007 Application of a Thermal-hydraulic Model to Analyze and Design a Circulating Water System in Alaska

International Symposium on Cold Region Development

Schubert, DH, DJ Gianotti, & G Jones (2007), "Application of a Thermal-hydraulic Model to Analyze and Design a Circulating Water System in Alaska," Proceedings of the 8th International Symposium on Cold Region Development.

2005 Waste Stabilization Pond Design and Performance Study

Alaska Department of Environmental Conservation

Woolard, C, D Gianotti, K Hardie, D White, & A Pinto (2005), "Waste Stabilization Pond Design and Performance Study," Prepared for the Alaska Department of Environmental Conservation.

2003 Fluid drop coalescence in a Hele-Shaw cell

Harvey Mudd College

Gianotti, DJ (2003), "Fluid drop coalescence in a Hele-Shaw cell," Undergraduate Mathematics Thesis, Advised by A Nadim, *Harvey Mudd College*.

2002 Internal metrology for the Space Interferometry Mission

NASA-JPL

Lampe, K, K Hultman, K Hedstrom, D Gianotti, E Deyo, & R Seat (2002), "Internal metrology for the Space Interferometry Mission," Undergraduate Physics Clinic Report, Advised by R Haskell, D MacDonald, & B Nemati, Harvey Mudd College & NASA-JPL.

published software packages

2016 Occurrence Markov Chain daily precipitation model

Short Gianotti, DJ (2016) "Occurrence Markov Chain daily precipitation model," http://github.com/dgianotti/OMC-precip,DOI:10.5281/zenodo. 45435.

appointments held

2016-Present Postdoctoral Associate

Massachusetts Institute of Technology

2011-2015 Research Assistant

Boston University

2011	Math Teacher	Boston Public Schools
2004-2010	Tutor	Private Practice
2007-2008	Lab Technician	California Institute of Technology
2005-2006	Environmental Engineering Associate	GV Jones & Associates
2004-2005	Research Assistant	University of Alaska, Anchorage
2003-2005	Substitute Teacher	Anchorage School District
2004	Staff	National Youth Science Camp
2001-2003	Writing Consultant	Harvey Mudd College
2002	Research Assistant	Lawrence Berkeley National Lab

teaching

Teaching Fellow:

2015 Introduction to Quantitative Environmental Modeling Boston University

Guest Lecturer:

2016-2018

Technology

Massachusetts Institute of

Introduction to Hydrology and Water Resources

2017 Introduction to Hydrologic Modeling Massachusetts Institute of Technology

K-12 Instruction:

2010-2011 **High school mathematics** Boston Public Schools

2004-2006 **Substitute Teacher** Anchorage School District

Chemistry, biology through introductory undergraduate

All subjects, all ages

Private Tutoring:

2006-2010

2002-2010 Math, physics, writing through advanced undergraduate

2006-2010 All subjects through advanced secondary

mentorship

Thesis Committee Member:

2018-2019 Apisada (Ju) Chulakadabba

MIT Civil & Environmental Engineering

Integration of Satellite and In-situ Data for the Study of Vegetation Responses

to Precipitation Pulses in the Southwestern United States

First-year Mini-UROP:

2019 Naomi Lutz & Nicole Toft

MIT Civil & Environmental Engineering

Impacts of Soil Moisture on Ecosystem Carbon and Water Exchanges

professional development

2015 ComSciCon 2015

Harvard University

Intergovernmental Panel on

Climate Change

Communicating Science Workshop

professional service

Non-Journal Reviews

2018 Special Report on Climate Change,

Desertification, Land Degradation, Sustainable

Land Management, Food Security, and Greenhouse gas fluxes in Terrestrial

Ecosystems

First Order Draft for US Global Change Research Program

Journal Reviews

Bulletin of the American Meteorological Society Hydrology and Earth System Sciences Journal of Hydrometeorology International Journal of Climatology Remote Sensing of Environment

Memberships & Research Communities

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