

Daniel Short Gianotti

water, energy, carbon, weather & climate

contact

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

gianotti@mit.edu
206.914.8269
dgianotti.com
 dgianotti
 dgianotti
 @DanGianotti

subjects

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

current position

2016-Present **Postdoctoral Associate**

Parsons Laboratory, Department of Civil & Environmental Engineering

Massachusetts Institute of Technology

education

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

Boston University

Dissertation Title: *The Potential Predictability of Precipitation over the Continental United States*

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

in revision

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 "Value of chlorophyll fluorescence for quantifying hydrological states and fluxes: Current status and challenges," *In review* in Agricultural and Forest Meteorology.

in revision

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," *In review* in New Phytologist.

submitted

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," *Submitted* to Water Resources Research.

- submitted* **Ecosystem plant water content and carbon flux behavior following moisture pulses: from dryland to mesic environments** Water Resources Research
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,” *Submitted* to Water Resources Research.
- in prep* **A kernel-auto-regressive weather generator for improved subseasonal-to-seasonal precipitation statistics** Water Resources Research
Short Gianotti, DJ, BT Anderson, & GD Salvucci, “A kernel-auto-regressive weather generator for improved subseasonal-to-seasonal precipitation statistics,” Expected submission in Water Resources Research, April 2020.

Published Journal Articles

- 2020a **Terrestrial evaporation and moisture drainage in a warmer climate** Geophysical Research Letters
Short Gianotti, DJ, R Akbar, AF Feldman, GD Salvucci, & D Entekhabi, “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, “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 and precipitation information** Water Resources Research
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 availability's effect on continental-scale evaporative and photosynthetic land surface dynamics** 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 across biomes** Nature Plants
 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 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
 Haghighi, 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** *Annals of Botany*
 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
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
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?** Journal of Climate
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 Francisco, CA.
- 2019 **Surface-Subsurface Linkages Derived From SMAP Time Series** SMAP Science Team Meeting
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 Drainage from SMAP TB and Precipitation** SMAP Science Team Meeting
 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 Energy Partitioning Soil Moisture Relationships** SMAP Science Team Meeting
 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 Continuum Based on SMAP Microwave Satellite Measurements** Science Utilization of SMAP 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,” Science Utilization of SMAP Meeting #2, Arcadia, CA.
- 2018 **Linkages between water, energy and carbon cycles revealed by SMAP** SMAP End of Prime Mission Science Meeting
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 energy- and 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 coupling** Science Utilization of SMAP 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.
- 2017 **Estimation of ecosystem-scale soil water losses from satellite observations of soil moisture** Science Utilization of SMAP Meeting
- Akbar, R*, **DJ Short Gianotti**, E Haghighi, GD Salvucci, & D Entekhabi (2017) “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 Fraction** American Geophysical Union
Fall Meeting
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 Climate Variability** AGU Chapman Conference on
California Drought: Causes, 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 for precipitation: A data-based stochastic modeling framework** American Geophysical Union
Fall Meeting
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 precipitation drought in the context of the last one hundred years** American Geophysical Union
Fall Meeting
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.
- 2014 **Integrating satellite and tower phenology: a case-study in real-time ecological forecasting** American Geophysical Union
Fall Meeting
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.
- 2014 **Predicting phenology: A case-study in real-time ecological forecasting** Ecological Society of America
Annual Meeting
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 **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 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 seasonal-mean precipitation variations and extreme event occurrences over the United States** Boston 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.

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, <i>Harvey Mudd College & NASA-JPL</i> .	

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
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Guest Lecturer:

2016-2018	Introduction to Hydrology and Water Resources	Massachusetts Institute of Technology
2017	Introduction to Hydrologic Modeling	Massachusetts Institute of Technology

K-12 Instruction:

2010-2011	High school mathematics	Boston Public Schools
2004-2006	Substitute Teacher All subjects, all ages	Anchorage School District

Private Tutoring:

2002-2010	Math, physics, writing through advanced undergraduate
2006-2010	Chemistry, biology through introductory undergraduate
2006-2010	All subjects through advanced secondary

mentorship

Thesis Committee Member:

2018-2019	Apisada (Ju) Chulakadabba <i>Integration of Satellite and In-situ Data for the Study of Vegetation Responses to Precipitation Pulses in the Southwestern United States</i>	MIT Civil & Environmental Engineering
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First-year Mini-UROP:

2019	Naomi Lutz & Nicole Toft <i>Impacts of Soil Moisture on Ecosystem Carbon and Water Exchanges</i>	MIT Civil & Environmental Engineering
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professional development

2015	ComSciCon 2015 Communicating Science Workshop	Harvard University
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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**

Intergovernmental Panel on
Climate Change

First Order Draft for US Global Change Research Program

Journal Reviews

Bulletin of the American Meteorological Society
Hydrology and Earth System Sciences
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