MARGARET T. GLASSCOE

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Margaret Glasscoe is a Science Researcher in the Earth Surface and Interior Group at the Jet Propulsion Laboratory, California Institute of Technology. She has experience working with a number of elastic and viscoelastic simulation software and modeling geodetic data. Her expertise includes disaster response and decision support systems, modeling deformation of the Earth's crust to study postseismic response to large earthquakes, numerical models of the rheological behavior of the crust, and simulations and analysis of interacting fault systems.

Education

Ph.D., Geology, University of California, Davis (2015); emphasis in numerical methods and solid mechanics
M.S., Geology, University of California, Davis (2003)
B.S., Geological Sciences, University of Southern California, *Magna Cum Laude* (1997)
B.A., Print Journalism, University of Southern California, *Magna Cum Laude* (1997)

Professional Experience

Jet Propulsion Laboratory
Science Researcher (Geophysicist), Terrestrial Science/Solid Earth/Earth Surface and Interior Group, 2004-present
Member of the Technical Staff, Data Understanding Systems Group, 2000-2004
Research Assistant, Satellite Geodesy and Geodynamics Systems Group, 1996-2000

Awards

JPL Voyager Award: Nepal Multihazard Risk Assessment, 2015
NASA Group Achievement Award: Nepal Earthquake Response, 2015
JPL Discovery Award: E-DECIDER, 2013
JPL SPOT Award: Earth Science Engagement and Outreach, 2010
NASA Board Act Award: GeoFEST v. 4.8, 2008
JPL Outstanding Accomplishment Award: InSAR Workshop Report, 2006
JPL Team Bonus Award: QuakeSim Parallel GeoFEST Development Team, 2004
NASA Graduate Student Research Program Fellowship, 1999-2000, 2000-2001, 2001-2002
Southern California Earthquake Center Community Outreach Award (Education), 1998
JPL Notable Organizational Value Added (NOVA) Award, 1997, 1998

Other Relevant Activities

NASA Disasters Program Coordinator (2016-present)

ESIP Federation Type II Partner Organization and Disasters Lifecycle Member

Coordinator of NASA 2016 Vigilant Guard17 California and Nevada National Guard Multistate Exercise in partnership with military and CA Earthquake Clearinghouse partners, NASA Centers, and NASA Airborne projects (UAVSAR, ASO, and AVIRIS)

Coordinator of NASA 2015 May Capstone/National Level Exercise activities in partnership with the California Earthquake Clearinghouse, CA EPA, CA Department of Public Health, FEMA Region 9, CA National Guard, CA OES, various state partners, and NASA projects (E-DECIDER, ARIA, GeoGateway, UAVSAR, READI)

Co-lead of 2014 UNICEF Nepal Multi-Hazard Risk Assessment Study and development of the joint JPL/ImageCat/UNICEF DisasterViewer Hazards platform following the April 2015 Gorkha Nepal Earthquake

Member of 2014 and 2015 NISAR Applications Workshop Organizing and Report Writing Committees

FEMA Emergency Management Institute Course Training: IS-100 Introduction to Incident Command System (ICS), IS-200: ICS for Single Resources and Initial Action Incidents, IS-700 National Incident Management System (NIMS), IS-800: National Response Framework, An Introduction

Selected Publications

Donnellan, A., Parker, J.W., **Glasscoe, M.,** De Jong, E., Pierce, M., Fox, J., McLeod, D., Rundle, J., Grant Ludwig, L. 2012, A Distributed Approach to Computational Earthquake Science: Opportunities and Challenges, Computing in Science and Engineering, 14, 31-42.

Donnellan, A., Rundle, J., Fox, G., McLeod, D., Grant, L., Tullis, T., Pierce, M., Parker, J., Lyzenga, G., Granat, R., and **Glasscoe, M.**, 2005, QuakeSim and the Solid Earth Research Virtual Observatory, Pure and Applied Geophysics, v. 163, pp. 2263-2279.

Glasscoe, M.T., Parker, J.W., Wang, J., Pierce, M.E., Yoder, M.R., Eguchi, R.T., Huyck, C.K., Hu, Z., Bevington, J., Ghosh, S., Gill, S., Chen, Z., Rosinski, A., E-DECIDER Decision Support Tools for Disaster Response, in *Applied Geology in California*, Anderson, B., Ferriz, H. and Hitchcock, C., eds., Star Publishing, Redwood City, CA, Association of Environmental and Engineering Geologists Special Publication no. 26, pp 631-650.

Glasscoe, M.T., Wang, J., Pierce, M.E., Yoder, M.R., Parker, J.W., Burl, M.C., Stough, T.M., Granat. R.A., Donnellan, A., Rundle, J.B., Ma, Y., Bawden, G.W. and Yuen, K., 2015, E-DECIDER: Using Earth Science Data and Modeling Tools to Develop Decision Support for Earthquake Disaster Response, Pure and Applied Geophysics, v. 172, pp. 2305–2324, doi: 10.1007/s00024-014-0824-9.

Glasscoe, M.T., Granat, R.A., Rundle, J.B., Rundle, P.B., Donnellan, A., and Kellogg, L.H., 2009, Analysis of emergent fault element behavior in Virtual California, Concurrency and Computation: Practice and Experience, DOI: 10.1002/cpe.1546.

Glasscoe, M.T., Donnellan, A., Kellogg, L.H., and Lyzenga, G.A., 2004, Evidence of strain partitioning between the Sierra Madre fault and the Los Angeles Basin, southern California from numerical models, Pure and Applied Geophysics, v. 161, pp. 2343-2357.

Glasscoe, M.T., Kellogg, L.H., Lyzenga, G.A., and Donnellan, A., 2002, Fault interaction in the Los Angeles Basin and Transverse Ranges, southern California, from elastic half-space and viscoelastic finite element models, Proceedings from 2002 International ACES Meeting, Maui, HI, 5-10 May (http://quakes.earth.uq.edu.au/ACES-2002-workshop/PDF/page273-278.pdf)

Parker, J., Donnellan, A., **Glasscoe, M.**, Fox, G., Wang, J., Pierce, M., and Ma, Y., 2015, Advantages to Geoscience and Disaster Response from QuakeSim Implementation of Interferometric Radar Maps in a GIS Database System, Pure and Applied Geophysics, v. 172, pp. 2295-2304, doi: 10.1007/s00024-014-0886-8.

Parker, J., Lyzenga, G., Norton, C., Zuffada, C., **Glasscoe, M.**, Lou, J., and Donnellan, A., 2008, Geophysical Finite Element Simulation tool (GeoFEST): algorithms and validation for quasistatic regional faulted crust problems, Pure and Applied Geophysics, v. 165, pp. 497-521.

Turcotte, D.L. and **Glasscoe, M.T.**, 2004, A damage model for the continuum rheology of the upper continental crust, Tectonophysics, 383, 71-80.

Wang, J., Pierce, M.E., Ma, Y., Fox, G.C., Donnellan, A. Parker, J.W., and **Glasscoe, M.**, 2012, Using Service-Based Geographical Information System to Support Earthquake Research and Disaster Response, Computing in Science and Engineering, 14, 21-30.

Yoder, M.R., Rundle, J.B. and **Glasscoe, M.T.**, 2015, Near-Field ETAS Constraints and Applications to Seismic Hazard Assessment, Pure and Applied Geophysics, v. 172, pp. 2277-2293, doi: 10.1007/s00024-014-0785-z.

Selected Conference Talks and Posters

Glasscoe, M., Donnellan, A., Lyzenga, G., Parker, J., and Milliner, C., 2016, Using Remote Sensing Data to Constrain Models of Fault Interactions and Plate Boundary Interactions, presented at the Fall American Geophysical Union Meeting, San Francisco, CA, 12-16 December (talk).

Glasscoe, M., Aubrey, A., Rosinski, A., Morentz, J., Beilin, P., and Jones, D., 2016, Trusted Data Sharing and Imagery Workflow for Disaster Response in Partnership with the State of California, presented at the Fall American Geophysical Union Meeting, San Francisco, CA, 12-16 December (talk).

Glasscoe, M., Parker, J., Lyzenga, G., Donnellan, A., and Milliner, C., 2016, Using Numerical Methods to Investigate Distributed Deformation – The South Napa Earthquake as a Case Study, presented at the 11th Joint Meeting of the US-Japan National Resources Panel on Earthquake Research, Napa, CA 16-18 November (invited talk).

Glasscoe, M., Rosinski, A., Beilin, P., 2016, Trusted Data Sharing and Imagery Workflow for Disaster Response in Partnership with the State of California: Cascadia Rising 2016 and Beyond, presented at the ESIP Summer Meeting, Durham, NC, 19-22 July (invited talk).

Glasscoe, M., Donnellan, A., Lyzenga, G., Parker, J., and Milliner, C., 2016, Constraining Models of Shallow Fault Slip with Remote Sensing Data, presented at the Seismological Society of America Annual Meeting, Reno NV, 20-22 April (talk).

Glasscoe, M., Donnellan, A., Parker, J., Granat, R., Won, P., Lyzenga, G., Pierce, M., Wang, J., Grant Ludwig, L., Eguchi, R., Huyck, C., Hu, Z., Chen, Z., Yoder, M., Rundle, J., and Rosinski, A., 2015, Tools for Disaster Response: E-DECIDER & GeoGateway, presented at the UNWCDRR Public forum: Science and practical DRR ~ role of universities/academia, Tohoku University, Sendai Japan, 17 March (invited talk).