

## **GREGG M. GARFIN**

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### **STATEMENT**

I am trained as a climatologist and geographer. My research interests include climate variability and change, drought science and planning, issues at the intersection of climate-water-society, climate change adaptation, and decision support. My primary work encompasses bridging the science-society interface, through knowledge exchange between scientists and resource managers, planners, policy makers, and other decision-makers. I served as co-Convening Lead Author for the 3<sup>rd</sup> National Climate Assessment, [Chapter 20: Southwest](#). I am co-editor of [Climate in Context: Science and Society Partnering for Adaptation](#). I am Chapter Lead for the 4<sup>th</sup> National Climate Assessment, Chapter 25: Southwest.

### **EDUCATION**

- 1998 The University of Arizona; Ph.D., Geosciences
- 1992 University of Massachusetts, M.S., Geography and Geology
- 1989 University of Massachusetts, B.S., Geography and Geology

### **PROFESSIONAL APPOINTMENTS**

- 2017-Present [University Director](#), Southwest Climate Science Center
- 2014-Present [Associate Professor and Associate Specialist in Climate Science, Policy & Natural Resources](#), School of Natural Resources and the Environment, University of Arizona
- 2010-2014 *Assistant Professor and Assistant Specialist in Climate Science, Policy & Natural Resources*, School of Natural Resources and the Environment, University of Arizona
- 2016-Present *Faculty Associate*, Udall Center for Studies in Public Policy, University of Arizona
- 2010-Present *Adjunct Assistant Professor*, Laboratory of Tree-Ring Research, University of Arizona
- 2007-Present [Deputy Director for Science Translation and Outreach](#), Institute of the Environment, University of Arizona
- 2005-Present *Affiliated Faculty*, School of Geography and Development, University of Arizona
- 2003-2006 *Program Manager*, Climate Assessment for the Southwest Project (CLIMAS), Institute for the Study of the Planet Earth, University of Arizona
- 2000-2003 *Assistant Staff Scientist*, CLIMAS, ISPE, University of Arizona

## SELECTED AWARDS

- 2013 Service Award, University of Arizona, SNRE
- 2012 Innovative Program Gold Award, Climate and Natural Resource Extension,
- 2012 UA CALS Outstanding Environment and Sustainability Extension Signature Program
- 2009 American Water Resources Association, William R. Boggess Award
- 2007 California Department of Water Resources, Climate Science Service Award
- 2005 Edmund A. Arbas Award of Excellence, Arizona Research Labs
- 2005 Honor Award, National Predictive Services Group, National Interagency Fire Center

## SELECTED PUBLICATIONS

- Garfin, G.**, S. LeRoy, M. Muth, H. Jones, M. Ibarra Ochoa, J. L. Vazquez Aguirre, M. Shafer, D. Brown, J. Saldana Colin, G. Velazquez Angulo, M. L. Romo Aguilar. (in press). Climate Services for Coping with Climate Change, Drought, and Extreme Heat in the México-U.S. Border Region. In Montero Martinez, M.J., and O. F. Ibanez Hernandez (eds.), *Cuenca del Río Conchos: Una Mirada desde las Ciencias ante el Cambio Climático*. Jiutepec, Morelos, Mexico: Instituto Mexican de Tecnología del Agua, pp. 39-73. ISBN 978-607-9368-89-0.
- Jackson, S.T., C. Enquist, and **G. Garfin** (eds.). 2017 (December). Special Issue: Translational Ecology. *Frontiers in Ecology and the Environment* 15(10).
- Enquist, C.A.F., S.T. Jackson, **G. Garfin**, F.W. Davis, L.R. Gerber, J. Littell, J.L. Tank, A. Terando, T. Wall, B. Halpern, J.K. Hiers, T.L. Morelli, E. McNie, N.L. Stephenson, M.A. Williamson, C.A. Woodhouse, L. Yung, M. Brunson, K. Hall, L.M. Hallett, D.M. Lawson, M. Moritz, K. Nydick, A. Pairis, A.J. Ray, C. Regan, H.D. Safford, M.W. Schwartz, M.R. Shaw. 2017. Foundations of Translational Ecology. *Frontiers in Ecology and the Environment* 15(10): 541-550.
- Schwartz M.W., J.K. Hiers, F.W. Davis, **G. Garfin**, S.T. Jackson, A.J. Terando, C.A. Woodhouse, T.L. Morelli, M.A. Williamson, M.W. Brunson. 2017. Developing a Translational Ecology Workforce. *Frontiers in Ecology and the Environment* 15(10): 587-596.
- Wall, T.U., E.C. McNie, and **G.M. Garfin**. 2017. Use-Inspired science: making science usable by and useful to decision makers. *Frontiers in Ecology and the Environment* 15(10): 551-559.
- Jackson, S.T., **G.M. Garfin**, and C.A.F. Enquist. 2017. Toward an effective practice of translational ecology. *Frontiers in Ecology and the Environment* 15(10): 540.
- Petersen, S., **Garfin, G.**, MacClune, K., Allen, C., Shafer, M., Hayhoe, K., Kos, L., LeRoy, S., Nasser, E., Riley, R., Stults, M., 2017. Critical Thresholds, Extreme Weather, and Building Resilience: How using Critical Thresholds to Customize Climate Projections of Extreme Events to User Needs Can Support Decisions and Build Resilience. A Sectoral Applications Research Program Project supported by the National Oceanic and Atmospheric Administration's Climate Program Office. Award Number: NA14OAR4310248. Austin: Adaptation International, 34 p.
- Garfin, G.**, D.A. Falk, A.C. Haverland, K. Jacobs, J.L. Weiss, J.T. Overpeck, C.D. O'Connor, A. Haworth, A. Baglee. 2017. SERDP Project RC2232 User Guide. April 2017. Best Practices for Assessing Climate Related Risk and Mainstreaming Climate Change Adaptation: Lessons Learned from DoD Installations in the Southwestern United States. 99 p.

- Garfin, G.**, D.A. Falk, K. Jacobs, A.C. Haverland, J.L. Weiss, J.T. Overpeck, C.D. O'Connor, A. Haworth, A. Baglee. 2017. Climate Change Impacts and Adaptation on Southwestern DoD Facilities, SERDP Project RC-2232: FINAL REPORT. University of Arizona. February 2017. 212 p.
- Garfin, G.**, S. LeRoy, and H. Jones. 2017. Developing an Integrated Heat Health Information System for Long-Term Resilience to Climate and Weather Extremes in the El Paso-Juárez-Las Cruces Region. Tucson, AZ: Institute of the Environment, 63 p. <http://doi.org/10.7289/V5930R6Q>
- Garfin, G.** and S. LeRoy. 2017. NIHHS Rio Grande-Rio Bravo 2017 Summer Meeting: Evaluation, Knowledge Sharing, and Next Steps Summary. Tucson, AZ: CLIMAS, 15 p.
- LeRoy, S., **Garfin, G.** and H. Jones. 2017. NIHHS Southwest Regional Pilot: 2017 Winter Work Streams Meeting Summary. Tucson, AZ: CLIMAS, 6 p.
- Garfin, G.**, M. Wilder, and R. Merideth (eds.). 2016. Environmental change assessments. (Metrics: Measurement and Assessment of Adaptive Capacity and Water Security). *Current Opinion in Environmental Sustainability* (Special Issue).
- Garfin, G.M.**, et al. 2016. Metrics for assessing adaptive capacity and water security: common challenges, diverging contexts, emerging consensus. *Current Opinion in Environmental Sustainability* 21: 86-89.
- Star, J., E. Rowland, M.E. Black, C.A.F. Enquist, **G. Garfin**, C. Hawkins Hoffman, H. Hartmann, K.L. Jacobs, R.H. Moss and A.M. Waple. 2016. Supporting adaptation decisions through scenario planning: Enabling the effective use of multiple methods. *Climate Risk Management*
- Garfin, G.**, S. LeRoy, D. Martin, M. Hammersley, A. Youberg, and R. Quay. 2016. *Managing for Future Risks of Fire, Extreme Precipitation, and Post-fire Flooding*. Report to the U.S. Bureau of Reclamation, from the project Enhancing Water Supply Reliability. Tucson, AZ: Institute of the Environment, 33 p. DOI: 10.13140/RG.2.2.12750.05448
- Garfin, G.**, S. LeRoy, B. McMahan, M. Black, and B. Roh. 2016. Preparing for High Consequence, Low Probability Events: Heat, Water & Energy in the Southwest. Report to the U.S. Bureau of Reclamation, from the project Enhancing Water Supply Reliability. Tucson, AZ: Institute of the Environment, 30 p. DOI: 10.13140/RG.2.1.4823.3205
- LeRoy, S., **G. Garfin**, and M. Black. 2016. Anticipating Cascading Effects from Climate Extremes. *EOS*.
- Garfin, G.**, T. Brown, T. Wordell, and E. Delgado. 2016. The Making of National Seasonal Wildfire Outlooks. Chapter 7. In A. Parris, G. Garfin, K. Dow, R. Meyer, and S. Close (eds.), *Climate in Context: Science and Society Partnering for Adaptation*. J. Wiley and Sons, Ltd./AGU, pp. 143-172.
- Carbone, G., J. Rhee, K. Dow, J. Fowler, **G. Garfin**, H. Hartmann, E. Lay, and A. DeGaetano. 2016. Challenges, Pitfalls, and Lessons Learned in Developing a Drought Decision-Support Tool. Chapter 8. In A. Parris, G. Garfin, K. Dow, R. Meyer, and S. Close (eds.), *Climate in Context: Science and Society Partnering for Adaptation*. J. Wiley and Sons, Ltd./AGU, pp. 173-190.
- Parris, A., S.L. Close, R. Meyer, K. Dow, and **G. Garfin**. 2016. Evolving the Practice of Regional Integrated Sciences and Assessments. Chapter 12. In A. Parris, G. Garfin, K. Dow, R. Meyer, and S. Close (eds.), *Climate in Context: Science and Society Partnering for Adaptation*. J. Wiley and Sons, Ltd./AGU, pp. 255-262.
- G. Garfin**, Black, M., and E. Rowland. 2015. Climate Adaptation Scenario Planning: State of the Art. Workshop on Scenario Planning for Climate Adaptation Decision Making Tucson, Arizona, 31 March–1 April 2015. *EOS*.

- Garfin, G.** and J. Brugger. 2015. Training Climate Science Integrators. *Southern Climate Monitor* 5(6). <http://www.southernclimate.org/>
- Liverman, D., **G. Garfin**, S. Doster, K. Bao, F. Gladstone, J. A. Krosnick, B. MacInnis, and J. Overpeck. 2015. *Arizona's Views on Climate Change. Executive Summary*. Tucson: Institute of the Environment, 9 pp.
- Garfin, G.**, G. Franco, H. Blanco, A. Comrie, P. Gonzalez, T. Piechota, R. Smyth, and R. Waskom, 2014. Ch. 20: Southwest. *Climate Change Impacts in the United States: The Third National Climate Assessment*. J. M. Melillo, Terese (T.C.) Richmond, and G. W. Yohe, Eds., U.S. Global Change Research Program, 462-486. doi:10.7930/J08G8HMN.
- Garfin, G.**, H. Chang, and M. Switanek, 2014. Climate and hydrology of the Upper Gila River Basin. In Gori, D., M.S. Cooper, E.S. Soles, M. Stone, R. Morrison, T.F. Turner, D.L. Propst, G. Garfin, M. Switanek, H. Chang, S. Bassett, J. Haney, D. Lyons, M. Horner, C.N. Dahm, J.K. Frey, K. Kindscher, H.A. Walker, and M.T. Bogan. *Gila River Flow Needs Assessment*. A report by The Nature Conservancy. Santa Fe: The Nature Conservancy, pp. 40-79.
- Garfin, G.**, 2014. The imperatives and challenge of addressing climate risk in Cooperative Extension communities: an opportunity or an obstacle to Extension work? *Rural Connections* 8(2):17-20.
- Garfin, G.**, A. Jardine, R. Merideth, M. Black, and S. LeRoy (eds.), 2013. *Assessment of Climate Change in the Southwest United States: A Report Prepared for the National Climate Assessment*. Washington, DC: Island Press, 509 p.
- M. Apel, A. Mostafa, B. Brandau, **G. Garfin**, 2013. Externships in Sustainability Program as an Outreach Tool for Extension. *Journal of Extension* 51(2): 2TOT7.
- Garfin, G.**, P. Romero Lankao, and R. Varady, 2013. Editorial: Rethinking integrated assessments and management projects in the Americas. *Environmental Science & Policy* 26:1-5.
- Varady, R.G., C.A. Scott, M. Wilder, B. Morehouse, N. Pineda Pablos, **G.M. Garfin**, 2013. Transboundary adaptive management to reduce climate-change vulnerability in the western US–Mexico border region. *Environmental Science and Policy* 26:102-112.
- Cross, M., P. McCarthy, **G. Garfin**, D. Gori, and C. Enquist, 2013. Accelerating climate change adaptation for natural resources in southwestern United States. *Conservation Biology* 27:4-18.
- Garfin, G.M.**, 2012. Climate change challenges and solutions for water managers. In S.B. Megdal, R.G. Varady, S. Eden (eds.) *Shared Borders, Shared Waters: Israeli-Palestinian and Colorado River Basin Water Challenges*. Leiden, The Netherlands : CRC Press, Taylor & Francis Group, pp. 187-202.
- Garfin, G.**, H. Hartmann, M. Crescioni-Benitez, T. Ely, J. Keck, J.W. Kendrick, K. Legg, and J. Wise. 2011. Climate-Friendly Park Employees: The Intermountain Region's climate change training assessment. *Park Science* 28(1): 30-36.
- Garfin, G.**, N. Lee, V. Magana, R. Stewart, T. Rolfe, and J. McEvoy, 2011. International Workshop for CHANGE: Climate and Hydrology Academic Network for Governance and the Environment. *BAMS*. doi:10.1175/2010BAMS2927.1
- O'Connor, C.D., **G.M. Garfin**, D.A. Falk, T.W. Swetnam, 2011. Human Pyrogeography: A New Synergy of Fire, Climate and People is Reshaping Ecosystems across the Globe. *Geography Compass* 5(6): 329–350. DOI: 10.1111/j.1749-8198.2011.00428.x

- Garfin, G.**, J. Eischeid, M. Lenart, K. Cole, K. Ironside, and N. Cobb, 2010. Downscaling Climate Projections in Topographically Diverse Landscapes of the Colorado Plateau in the Arid Southwestern United States. *The Colorado Plateau IV*. C. Van Riper III, B. Wakeling, T. Sisk (eds.), University of Arizona Press.
- Wilder, M., Scott, C.A., Pineda Pablos, N., Varady, R.G., **Garfin, G.M.**, McEvoy, J., 2010. Adapting Across Boundaries: Climate Change, Social Learning, and Resilience in the U.S.-Mexico Border Region. *Annals Assoc. of American Geographers* 100(4):917-928.
- Jacobs, K., **Garfin, G.**, Buizer, J., 2009. The Science-Policy Interface: experience of a workshop for climate change researchers and water managers. *Science and Policy* 36(10):791-798.
- Ellis, A., Goodrich, G., **Garfin, G.**, 2009. A Hydroclimatic Index for Examining Patterns of Drought in the Colorado River Basin. *International Journal of Climatology*.
- Garrick, D., Jacobs, K., **Garfin, G.**, 2008. Models, Assumptions, and Stakeholders: Planning For Water Supply Variability in the Colorado River Basin. *JAWRA*, 44(2): 381-398.
- Garfin, G.**, Crimmins, M.A., Jacobs, K. 2006. Drought, Climate Variability and Implications for Water Supply and Management. In Colby, B.G. and Jacobs, K. (eds), *Arizona Water Policy: Management Innovations In An Urbanizing, Arid Region*. Resources for the Future, Washington, DC.
- Ray, AJ, **Garfin, GM**, Wilder, M, Vasquez-Leon, M, Lenart, M, Comrie, AC, 2006. Applications of Monsoon Research: Opportunities to Inform Decisionmaking and Reduce Regional Vulnerability. *Journal of Climate* 20(9):1608-1627.
- Jacobs, K., **G. Garfin** and M. Lenart. 2005. More Than Just Talk: Connecting Science and Decisionmaking. *Environment* 47(9): 6-21.
- Jacobs, K, **Garfin, GM**, Morehouse BJ, 2005. Climate Science and Drought Planning: the Arizona Experience. *JAWRA*, 41(2): 437-445.
- Garfin, GM**, Hughes, MK, Liu, Y, Burns, JM, Touchan, R, Leavitt, SW, and An, Z, 2005. Exploratory temperature and precipitation reconstructions from the Qinling Mountains north-central China. *Tree-Ring Research* 61:59-72.
- Touchan, RA, **Garfin GM**, Meko, DM, Funkhouser, G, Erkan, N, Hughes, MK, Wallin, BS, 2003: Preliminary Reconstructions Of Spring Precipitation In Southwestern Turkey From Tree-Ring Width. *International Journal of Climatology* 23: 157-171.

### **SELECTED SYNERGISTIC ACTIVITIES**

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|--------------|--|
| 2015-Present | Director, Water, Society & Policy Master's Degree Program                          |
| 2015-Present | Member, Center for Compassion Studies, Faculty Advisory Board                      |
| 2014-2017    | Director, University of Arizona Arts+Environment+Humanities Network                |
| 2014-Present | Center for Climate Adaptation Science and Solutions, Core Team                     |
| 2014-2016    | MaRIUS Drought Project, International Advisory Board, Oxford University            |
| 2013-2015    | North American CORDEX, Executive Committee   |
| 2011-2016    | Southern Climate Impacts Planning Program, Advisory Board Member                   |
| 2010-Present | Graduate Certificate Program, Connecting Environmental Science and Decision Making |
| 2009-2016    | City of Tucson Climate Change Committee (currently co-Chair)                       |
| 2010-2015    | U.S. CLIVAR Panel on Prediction, Predictability and Application Interface          |
| 2009-Present | Forests, Woodlands, and Climate E-Extension Community of Practice                  |
| 2003-Present | Arizona Governor's Drought Task Force Monitoring Technical Committee               |

### **SELECTED RECENT FUNDED PROJECTS**

- 2017-2018 *Toward Effective Actionable Science: Stakeholder Needs Assessment.* Funding: USGS.
- 2017-2018 *Hot Spots for Heat Resilience in Border Cities: A pilot Study in El Paso, TX.* Funding: Agnese Nelms Haury Program in Environment and Social Justice.
- 2016-2017 *Developing Integrated Heat-Health Information for Long-term Resilience and Early Warning, for the El Paso-Juárez-Las Cruces Region.* Funding: NOAA.
- 2012-2017 *Climate Change Impacts and Adaptation on Southwestern DoD Facilities.* Funding: Strategic Environmental Research and Development Program. Lead-PI: Rafe Sagarin
- 2014-2016 *Scenario Planning for the Central Basin and Range.* Funding: NOAA. Lead-PI: T. Wall.
- 2014-2016 *Using Critical Thresholds to Customize Climate Projections of Extreme Events to User Needs and Support Decisions.* Funding: NOAA. Lead-PI; S. Petersen
- 2015 *Innovation Adoption and Dissemination for Western Adaptation Alliance.* Funding: Urban Sustainability Directors Network. Lead-PI: T. Lawless
- 2012-2015 *Enhancing Water Supply Reliability Through Improved Predictive Capacity and Response: Knowledge Exchange Component;* Funding Agency: Bureau of Reclamation. Lead-PI: K. Morino
- 2014-2015 *Collaboration Project in Adaptation/Resilience Climate Extremes.* Funding: City of Las Vegas/Urban Sustainability Directors Network.
- 2013-2015 *BLM Scenario Planning – Developing, testing and evaluating scenario planning for Nevada BLM using the Rapid Ecoregional Assessments.* Funding: Bureau of Land Management. Lead-PI: T. Brown
- 2013-2014 *Adaptation to Seasonal to Multi-Decade Change in the Lower Rio Grande Basin.* Funding: NOAA.
- 2011-2014 *Managing Demand and Rethinking Supply: Adaptation, Conservation, and Planning in the Drought-prone Southwestern United States and Northwest Mexico.* Funding Agency: NOAA Climate and Society Interactions-Water; Lead-PI: M. Wilder.

### **COURSES TAUGHT**

Climate Change Adaptation: Perspectives at the Nexus of Science, Society and Resource Management. RNR 440/540, SNRE

Water, Society, and Policy Seminar. RNR 696W, SNRE