



Alan Gillespie

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Major Interests: Quaternary geology, remote sensing
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Education and Degrees:

Ph.D.	Geology	California Institute of Technology	1982	Thesis advisor: Clarence R. Allen. <i>Quaternary Glaciation and Tectonism in the Southeastern Sierra Nevada, Inyo County, California.</i>
M.S.	Geology	California Institute of Technology	1977	
B.S.	Geophysics	Stanford University	1969	

Professional Experience:

1987- present	<u>Professor</u> and <u>Director</u> , Keck Remote Sensing Lab, Dept. Earth & Space Sci., University of Washington, Seattle, WA.
1999-2000	<u>Interim Executive Director</u> , Division of Earth & Ecological Sci., Desert Research Institute, Reno, NV.
1975-1979	<u>Vice President</u> , GeoImages, Inc., Altadena, CA.
1974-1975	<u>Software Consultant</u> , Rand Corporation, Santa Monica, CA.
1969-1987	<u>Member, Tech. Staff</u> , Image Processing Lab, Geology Group Jet Propulsion Laboratory, Pasadena, CA.

Honors and Awards:

- Mongolian Academy of Science, 29 June 2010, Khubilai Khaan Award for collaborative research
- Don J Easterbrook Distinguished Scientist Award, GSA/QGG 5/22/08
- 2009 Caswell Silver Distinguished Lecturer, Earth and Planetary Sciences, University of New Mexico, 10/9/09
- NASA Group Achievement Award, 2000, ASTER Science Team.
- NASA Group Achievement Award, 1975, ERTS geological analysis & image processing team.
- Editor's Citation, 1985, *Geophysical Research Letters*, excellence in reviews.
- Editor's Citation, 1990, *Journal of Geophysical Research*, excellence in reviews.
- Editor's Citation, 2006, *Geosphere*, excellence in reviews (*GSA Today* vol x(n), pp.
- Distinguished Visiting Scientist, Jet Propulsion Laboratory, 9/1/97-8/30/1999.
- Fellow, Geological Society of America, 5/4/08

Professional Societies:

- American Geophysical Union
- Geological Society of America (1984-2012).
- American Quaternary Association
- American Epigraphic Society
- International Quaternary Association

Service outside the University of Washington (selected):

- Councilor, American Quaternary Association, 2002-2006
- Chair, GSA Quaternary Geology & Geomorphology Division, 2002-2004
- Editor, *Quaternary Research*, 2000-2006 and 2008-present (Assoc. Editor, 1996-2000)
- Guest Editor, *First JPL Workshop on Remote Sensing of Land Surface Emissivity*, Pasadena CA, Jan. 1999
- Guest Editor, *Geografiska Annaler* 80A (3-4), Nov. 1998
- Member, Editorial Board, *Quaternary Science Reviews*, 2004-2012
- Member, Editorial Board, *Geology*, 1988-1991
- Member, GSA Quaternary Geology & Geomorphology Panel, 1992-1994
- Associate Editor, *Journal of Geophysical Research*, 1993-1995
- Member, Editorial Board, *Remote Sensing of Environment*, 1999-present
- Member, SES Panel on Remote Sensing, "Solid-Earth Science and Society," Nat'l Research Council, Nat'l Academy Press
- Chair, Board of Directors, Epigraphic Society, 2006- (Member of Board, 1996-2006)
- Member, Board of Directors, Damdin Da Intellectual Development Fund, Mongolia, 1998-present
- Chair, Landscape dynamics, evolution, and modeling panel, Zyzyzyx, CA, April 1998.
- Adjunct Professor, Humboldt State University, Arcata, CA, 1988- present
- Chair, Special Session on Hyperspectral Thermal Imaging, IGARSS, Seattle, July, 1998.
- Member, International Scientific Committee, Recent Advances in Quantitative Remote Sensing Symposium, 2002-present.
- Co-convenor, Sudden Climate Change Workshop, University of Washington, Seattle, Oct. 1988.
- Co-convenor, Spectral Mixture Analysis Workshop I, University of Washington, Seattle, Oct. 1990.
- Co-convenor, Spectral Mixture Analysis Workshop II, University of Washington, Seattle, Oct. 1992.
- Co-convenor, The glacial history of the Sierra Nevada: A symposium in Memorial to Clyde Wahhaftig, Univ. Calif. White Mtn. Res. Stn., Sept. 1995
- Co-convenor, The geomorphic and climatic significance of rock glaciers, Absarokas, WY, Aug. 1997.
- Co-convenor, Rock Art Dating Workshop, Boulder City, NV, Oct. 1998.
- Co-convenor, SN: Geomorphology From Earth Orbits Posters, American Geophysical Union Fall Meeting 2008.
- Editor, Special Issue on Scientific Results from ASTER, *Remote Sensing of Environment* 99(1-2), 2005
- Member, Collaborative Innovation Centre for Arid Environments and Climate Change, Lanzhou University, China
- Member, Board, *Gloria Farley Publications Inc. (nonprofit)*, Denver CO., 2006 – present
- Co-chair, Temperature/Emissivity Separation Working Group (TEWG), U.S. – Japanese ASTER Science Team, 1992—present

Students Advised (Chair or Co-Chair) (16)

Jigjidsuren Batbaatar	PhD	Department of Geological Sciences, UW
Paul Bierman	PhD	Department of Geological Sciences, UW
Douglas Clark	PhD	Department of Geological Sciences, UW
Iryna Danilina	PhD	Department of Earth and Space Sciences, UW
Degui Gu	PhD	Department of Geophysics, UW
Wen-Hao Li	PhD	Department of Geological Sciences, UW
Van Kane	PhD	College of Forest Resources, UW
Amit Mushkin	PhD	Department of Earth and Space Sciences, UW
Randall Perry	PhD	Department of Earth and Space Sciences, UW
Matthew Smith	PhD	Department of Earth and Space Sciences, UW
Stephen Thompson	PhD	Department of Geological Sciences, UW
Paul Zehfuss	PhD	Department of Earth and Space Sciences, UW
Kyle Bland	MSc	Department of Geological Sciences, UW
Jennifer Kay	MSc	Department of Earth and Space Sciences, UW
Stephen Martel	MSc	Department of Earth Sciences, Stanford University
Laura Trunk	MSc	Department of Earth and Space Sciences, UW

Students Advised (Committee member, including graduate School Representative) (37)

Rolf Aalto	PhD	Department of Geological Sciences, UW
Kostas Andreadis	PhD	Department of Civil Engineering, UW
Adam Barker	PhD	Department of Earth and Space Sciences, UW
Brian Collins	PhD	Department of Earth and Space Sciences, UW
Jennifer Francis	PhD	Department of Atmospheric Sciences, UW
Jan Heine	PhD	Department of Geological Sciences, UW
Jennifer Kay	PhD	Department of Earth and Space Sciences, UW
Juan-Carlos Jiménez-Muñoz	PhD	Departament de Física de la Terra i Termodinàmica, University of Valencia, Spain
Kristine Crossen	PhD	Department of Geological Sciences, UW
Christina Giovas	PhD	Department of Anthropology
Issac Larsen	PhD	Department of Earth and Space Sciences, UW
Jim Lutz	PhD	College of Forest Resources, UW
Karen Hutten	PhD	School of Environmental and Forest Sciences, UW
Nir Naveh	PhD	Department of Civil Engineering, UW
Michele Koppes	PhD	Department of Earth and Space Sciences, UW
Michael O'Neal	PhD	Department of Earth and Space Sciences, UW
Martin Pincheira	PhD	College of Forest Resources, UW
Elizabeth Safran	PhD	Department of Geological Sciences, UW
Sanjoy Som	PhD	Department of Earth and Space Sciences, UW
Leslie Reid	PhD	Department of Earth and Space Sciences, UW
Dar Roberts	PhD	Department of Geological Sciences, UW
Summer Rupper	PhD	Department of Earth and Space Sciences, UW
Don Sabol	PhD	Department of Geological Sciences, UW
Eric Steig	PhD	Department of Geological Sciences, UW
Terry Swanson	PhD	Department of Geological Sciences, UW
Glenn Thackray	PhD	Department of Geological Sciences, UW
Van Kane	PhD	College of Forest Resources, UW
Kelin Whipple	PhD	Department of Geological Sciences, UW
Michael Wiedmer	PhD	School of Environmental and Forest Sciences, UW
Guang Zheng	PhD	College of Forest Resources, UW
Byron Amerson	MSc	Department of Earth and Space Sciences, UW
Layton Chinn	MSc	Department of Earth and Space Sciences, UW
Fred Fischer	MSc	Department of Geology, Humboldt State University
James McCaughey	MSc	Department of Geological Sciences, University of Nevada, Reno
Doug LaFarge	MSc	Department of Geology, Humboldt State University
Joanna Redwine	MSc	Department of Geology, Humboldt State University
Maureen Timmons	MSc	Department of Geological Sciences, UW

Post-Doctoral Research Associates

Rebecca Handcock	Department of Earth and Space Sciences, UW
Charles Hibbitts	Department of Earth and Space Sciences, UW
Amit Mushkin	Department of Earth and Space Sciences, UW
Robin Weeks	Department of Earth and Space Sciences, UW

Visiting scholars

Yehouda Enzel	The Institute of Earth Sciences, The Hebrew University of Jerusalem, Givat Ram Campus, Israel
Jigjidsuren Batbaatar	Mongolian University of Science and Technology, Ulaanbaatar, Mongolia
Osmar Abilio de Carvalho Júnior	University of Brasilia, Brasilia, Brazil
Wang Guangjun	China University of Geosciences (Beijing), China, March 1 2013 – February 28 2014
Amit Mushkin	Geological Survey of Israel, July 15 2013 – July 14 2015

Publications (4 books, 185 articles (59=1st author), 211 abstracts and other presentations (78=1st author))

Articles and Books (* - reviewed)

1970

*Gillespie, A. R., and Gillespie, R. W., 1970. Stonehenge and the Piri Re'is Map. *Navigation* 17, 122-123.

1972

*Gillespie, A. R., and Soha, J. M., 1972. An orthographic photomap of the south pole of Mars from Mariner 6 and 7. *Icarus* 16, 522-527.

1975

Gillespie, A. R., 1975. Color manipulation of digital images. *Proceedings of the Society of Photographic Science and Engineering, Symposium IV, Unconventional Photographic Systems*, Washington, D.C., Nov. 20-21, pp. 35-37.

Goetz, A. F. H., Billingsley, F. C., Gillespie, A. R., Abrams, M. J., Squires, R. L., Shoemaker, E. M., Luchitta, I., and Elston, D. P., 1975. Application of ERTS images and image processing to regional geologic problems and geologic mapping in northern Arizona. *NASA-JPL Technical Report 32-1597*, May 15.

Kahle, A. B., Gillespie, A. R., Goetz, A. F. H., and Addington, J. D., 1975. Thermal inertia mapping. *Proceedings of the 10th International Symposium on Remote Sensing of the Environment*, Ann Arbor, MI, Oct. 6-10, p. 985-994.

Siegal, B. S., Kahle, A. B., Goetz, A. F. H., Gillespie, A. R., and Abrams, M. J., 1975. Detectability of geothermal areas using Skylab X-5 data. *Proceedings of the NASA Earth Resources Survey Symposium*, NASA TM X-58168, Vol. I-B, Houston, TX, pp. 625-640.

Siegal, B. S., Kahle, A. B., Goetz, A. F. H., Gillespie, A. R., Abrams, M. J., and Pohn, H. A., 1975. Final report on the detection of geothermal areas from Skylab thermal data. *NASA-JPL Technical Memorandum 33-728*, June 15.

1976

Abrams, M. J., Siegal, B. S., Goetz, A. F. H., and Gillespie, A. R., 1976. Computer image processing techniques applied to geologic problems. In *Applications of Computer Methods in the Mineral Industry* (R. V. Ramani, ed.), *Proceedings of the 14th International Symposium*, Pennsylvania State University, Oct. 4-8.

Gillespie, A. R., 1976. Directional fabrics introduced by digital filtering of images. *Proceedings of the Second International Conference on Basement Tectonics*, University Delaware, Newark, DE, July 13-17, p. 500-507.

Goetz, A. F. H., Abrams, M. J., Gillespie, A. R., Siegal, B. S., Elston, D. P., Lucchitta, I., Wu, S. S. C., Sanchez, A., DiPaola, W. D., Schaefer, F. J., and Jordan, R., 1976. Comparison of Skylab and Landsat images for geologic mapping in Northern Arizona. Final Report, NASA 7-100, Task Order RD-161, National Technology Information Service E76-10206, Feb. 27.

*Kahle, A. B., Gillespie, A. R., and Goetz, A. F. H., 1976. Thermal inertia imaging: A new geologic mapping tool. *Geophysics Research Letters* 3, 26-28.

Soha, J. M., Gillespie, A. R., Abrams, M. J., and Madura, D. P., 1976. Computer techniques for geological applications. *Proceedings of the Caltech/JPL Conference on Image Processing Technology, Data Sources and Software for Commercial and Scientific Applications*, Caltech, Pasadena, CA, Nov. 3-5, pp. 4-1 through 4-21.

1977

*Gillespie, A. R., and Kahle, A. B., 1977. The construction and interpretation of a digital thermal inertia image. *Photogrammetric Engineering and Remote Sensing* 43, 983-1000.

*Offield, T.W., Abbott, E. A., Gillespie, A. R., and Loguercio, S. O., 1977. Structure mapping on enhanced Landsat images of Southern Brazil: Tectonic control of mineralization and speculations on metallogeny. *Geophysics* 42(3), 482-500.

1979

*Benton, J. F., Gillespie, A. R., and Soha, J. M., 1979. Digital image processing applied to the photography of manuscripts. *Scriptorium* 33, 40-55.

Gillespie, A. R., 1979. Simulations of Stereosat data and characteristics. *Preliminary Stereosat Mission Description*, NASA/JPL Technical Report 720-33, May 30.

1980

*Gillespie, A. R., 1980. Digital techniques of image enhancement. In B. S. Siegal and A. R. Gillespie, eds., Remote Sensing in Geology, Wiley, NY, pp. 139-226.

*Lorre, J. J., and Gillespie, A. R., 1980. Artifacts in digital images. In *Application of Digital Image Processing to Astronomy*. *Society of Photo-Optical Instruments and Engineering* 264, 123-135.

Schildge, J. P., Kahle, A. B., Alley, R. E., and Gillespie, A. R., 1980. Use of thermal inertia properties for material identification. *Proceedings of the Society of Photo-Optical Instruments and Engineering, 24th Annual Technical Symposium, Image Processing for Missile Guidance*, SPIE 238 (T. F. Wenner, ed.), San Diego, CA, Jul. 28 - Aug. 1, pp. 350-357.

1982

*Gillespie, A. R., Huneke, J. C., and Wasserburg, G. J., 1982. An assessment of ⁴⁰Ar-³⁹Ar dating of incompletely degassed xenoliths. *Journal of Geophysical Research* 87, 9247-9257.

1983

*Gillespie, A. R., and Criss, R. E., 1983. Correlation of infrared reflectance ratios at 2.3 μm /1.6 μm and 1.1 μm /1.6 μm with $\delta^{18}\text{O}$ values delineating fossil hydrothermal systems in the Idaho batholith. *International Geosciences Remote Sensing Symposium (IGARSS '83)* 1, TA-4, pp. 4.1-4.6.

*Gillespie, A. R., Huneke, J. C., and Wasserburg, G. J., 1983. Eruption age of a Pleistocene basalt from ^{40}Ar - ^{39}Ar analysis of partially degassed xenoliths. *Journal of Geophysical Research* 88, 4897-5008.

1984

*Allen, C. R., Gillespie, A. R., Han, Y., Sieh, K. E., Zhang, B., and Zhu, C., 1984. Red River and associated faults, Yunnan Province, China. *Bulletin of the Geological Society of America* 95, 686-700.

*Allen, C. R., Han, Y., Sieh, K. E., Zhang, B., Gillespie, A. R., and Zhu, C., 1984. Study of the Quaternary activities of the Red River Fault (I) - General survey of its contemporary activities and evidence of the active faulting. *Chinese Journal of Seismological Research* 7(1), 39-51. (In Chinese).

*Allen, C. R., Han, Y., Sieh, K. E., Zhang, B., Gillespie, A. R., and Zhu, C., 1984. Study of the Quaternary activities of the Red River Fault (II) - Its features of activity, slip rate and recurrence intervals of earthquakes. *Chinese Journal of Seismological Research* 7(2), 171-186. (In Chinese).

*Gillespie, A. R., Huneke, J. C., and Wasserburg, G. J., 1984. Eruption age of a ~100,000-year-old basalt from ^{40}Ar - ^{39}Ar analysis of partially degassed xenoliths. *Journal of Geophysical Research* 89, 1033-1048.

*Gillespie, A. R., Kahle, A. B., and Palluconi, F. D., 1984. Mapping alluvial fans in Death Valley, California, using multichannel thermal infrared images. *Geophysical Research Letters* 11, 1153-1156.

Gillespie, A. R., and Abbott, E. A., 1984. Mapping compositional differences in silicate rocks with 6-channel thermal images. *Proceedings of the 9th Canadian Symposium on Remote Sensing*, St. Johns, Newfoundland, Canada, Aug., p. 327-336.

1985

*Budinger, F. E. Jr., Boley, J. L., and Gillespie, A. R., 1985. A reassessment of a hearth-like feature at the Calico site using TL, ESR, paleomagnetic, and ^{40}Ar - ^{39}Ar techniques. *Current Research in the Pleistocene* 3, 40-43.

Gillespie, A. R., 1985. Lithologic Mapping of Silicate Rocks Using TIMS. *The TIMS Data Users' Workshop*, June 18 - 19, Jet Propulsion Laboratory Publication 86-38, pp. 29-44.

1986

*Crook, R. Jr., and Gillespie, A. R., 1986. Weathering rates in granitic boulders measured by P-wave speeds. In S. M. Colman and D. Dethier (eds.), *Rates of Chemical Weathering of Rocks and Minerals*, Academic Press, p. 395-417.

*Gillespie, A. R., Kahle, A. B., and Walker, R. E., 1986. Color enhancement of highly correlated images, I. Decorrelation and HSI contrast stretches. *Remote Sensing of Environment* 20, 209-235.

1987

*Gillespie, A. R., A. B. Kahle and R. E. Walker, 1987. Color enhancement of highly correlated images, II. Channel ratio and chromaticity transformation techniques. *Remote Sensing of Environment* 22, 343-365.

*Martel, S. J., Harrison, T. M., and Gillespie, A. R., 1987. Late Quaternary displacement rate on the Owens Valley Fault Zone at Fish Springs, California. *Quaternary Research* 27, 113-129.

Gillespie, A. R., 1987. Enhancing TIMS images for photointerpretation. *Proceedings of the Workshop on Thermal Infrared Multispectral Scanner*, Jet Propulsion Laboratory Publication 36-38, Pasadena, CA, p. 12-24.

Gillespie, A. R., 1987. Letter to the editor in response to an article by R. I Dorn. *Quaternary Research* 28, 102-103.

Gillespie, A. R., 1987. Lithologic mapping of silicate rocks using TIMS data. *Proceedings of the Workshop on Thermal Infrared Multispectral Scanner*, Jet Propulsion Laboratory Publication 36-38, Pasadena, CA, p. 29-44.

Smith, M. O., Adams, J. B., and Gillespie, A. R., 1987. Evaluation and calibration of AVIRIS test-flight data, Owens Valley, CA, Final Report NASA Contract No. NAGW 1135, 17 p.

Smith, M. O., Roberts, D. A., Shipman, H. M., Adams, J. B., Willis, S. C., and Gillespie, A. R., 1987. Calibrating AIS images using the surface as a reference. *Proceedings of the 3rd Airborne Imaging Spectrometer Data Analysis Workshop*, Jet Propulsion Laboratory Publication 87-30, Pasadena, CA, pp. 63-69.

1988

*Kahle, A. B., Gillespie, A. R., Abbott, E. A., Abrams, M. J., Walker, R. E., Hoover, G., and Lockwood, J. P., 1988. Relative dating of Hawaiian lava flows using multispectral thermal infrared Images: A new tool for geologic mapping of young volcanic terranes. *Journal of Geophysical Research* 93, 15239-15251.

1989

*Adams, J. B., Smith, M. O., and Gillespie, A. R., 1989. Simple models for complex natural surfaces: A strategy for the hyperspectral era of remote sensing. *Proceedings of the International Geoscience Remote Sensing Symposium (IGARSS '89)* 1, 16-21.

*Gillespie, A. R., Budinger, F., Jr., and Abbott, E. A., 1989. Verification of prehistoric campfires by Ar-40/Ar-39 analysis. *Journal of Archaeological Science* 16, 271-291.

Gillespie, A. R., 1989. Big Pine Volcanic Field. In Smith, G. I. (ed.), *Field Guide to Eastern California*, International Geological Congress, Washington, D.C., Aug.

- Martel, S. J., Harrison, T. M., and Gillespie, A. R., 1989. Adjustments to calculated Quaternary displacement rates across the Fish Springs fault, Owens Valley fault zone, California. *Quaternary Research* 32, 342-343.
- 1990**
- *Smith, M. O., Ustin, S. L., Adams, J. B., and Gillespie, A. R., 1990. Vegetation in deserts: I. A regional measure of abundance from multispectral images. *Remote Sensing of Environment* 31, 1-26.
- *Smith, M. O., Ustin, S. L., Adams, J. B., and Gillespie, A. R., 1990. Vegetation in deserts: II. Environmental influences on regional abundance. *Remote Sensing of Environment* 31, 27-52.
- Adams, J. B., Kapos, V., Smith, M. O., Filho, R. A., Gillespie, A. R., and Roberts, D. A., 1990. A new Landsat view of land use in Amazonia. *Proceedings of the International Symposium on Primary Data Acquisition, ISPRS, MANAUS/1990* 28(1), 177-185 (Brazil).
- Fox, L., III, Fischer, A. F., III, Gillespie, A. R., and Smith, M. O., 1990. Investigation of AVIRIS imagery for application in differentiating soil chronosequences. *Proceedings of the Second Airborne Visible/Infrared Imaging Spectrometer (AVIRIS) Workshop*, Jet Propulsion Laboratory Publication 90-54, Pasadena, CA., pp 94-99.
- Gillespie, A. R., 1990. Big Pine Volcanic Field, California. In Wood, C.A., and Kienle, J., ed., *Volcanoes of North America: United States and Canada*. Cambridge University Press, New York.
- Gillespie, A. R., Burke, R. M., Fischer, A. F., III, Smith, M. O., and Fox, L., III, 1990. Distinguishing soils and surfaces in a carbonate-enriched desert chronosequence with TIMS. In E. A. Abbott (ed.), *Proceedings of the Second Thermal IR Multispectral Scanner (TIMS) Workshop*, Jet Propulsion Laboratory Publication 90-55, Pasadena, CA., p. 119-135.
- Gillespie, A. R., Smith, M. O., Adams, J. B., and Willis, S. C., 1990. Spectral mixture analysis of multispectral thermal infrared images. In E. A. Abbott, ed., *Proceedings of the Second Thermal IR Multispectral Scanner (TIMS) Workshop*, Jet Propulsion Laboratory Publication 90-55, Pasadena, CA., p. 57-74.
- Gillespie, A. R., Smith, M. O., Adams, J. B., and Willis, S. C., 1990. Spectral mixture analysis of multispectral thermal infrared images: Two test cases. *Proceedings of the 5th Australasian Remote Sensing Conference*, Committee of the 5th Australasian Remote Sensing Conference Inc. 1990, Perth, Western Australia, 8-12 Oct., Vol. 1, 381-390.
- Gillespie, A. R., Smith, M. O., Adams, J. B., Willis, S. C., Fischer, A. F., III, and Sabol, D., 1990. Interpretation of residual images: Spectral mixture analysis of AVIRIS images, Owens Valley, California. *Proceedings of the Second Airborne Visible/Infrared Imaging Spectrometer (AVIRIS) Workshop*, Jet Propulsion Laboratory Publication 90-54, Pasadena, CA., p. 243-270.
- Roberts, D. A., Smith, M. O., Adams, J. B., Sabol, D. E., Gillespie, A. R., and Willis, S. C., 1990. Isolating woody plant material and senescent vegetation from green vegetation in AVIRIS data. *Proceedings of the Second Airborne Visible/Infrared Imaging Spectrometer (AVIRIS) Workshop*, Jet Propulsion Laboratory Publication 90-54, Pasadena, CA., pp 42-57.
- 1991**
- Adams, J. B., Barron, E. E., Bloom, A. A., Breed, C., Dohrenwend, J., Evans, D. L., Farr, T. G., Gillespie, A. R., Isacks, L. B., and Williams, R. S., 1991. Report of the Panel on the Land Surface: Processes of Change. In *Solid Earth Science in the 1990s, Volume 2 - Panel Reports*. NASA Technical Memorandum 4256, v. 2, V-1 - V-28, Feb.
- *Bierman, P. R., Gillespie, A. R., and Keuhner, S., 1991. Precision of rock varnish cation-ratio ages. *Geology*, 19, 135-139.
- *Bierman, P. R., and Gillespie, A. R., 1991. Range fires: A significant factor in the dating and evolution of geomorphic surfaces. *Geology* 19, 641-644.
- *Bierman, P. R., and Gillespie, A. R., 1991. Accuracy of rock-varnish chemical analyses: Implications for cation-ratio dating. *Geology* 19, 196-199.
- Bierman, P. R. and A. R. Gillespie, A. R., 1991. Lowering rates of granitic landforms determined by measurement of *in situ* produced cosmogenic nuclides. *EOS* 72(44), 575.
- Bierman, P., Gillespie, A. R., Whipple, K. X., and Clark, D. H., 1991. Quaternary geomorphology and geochronology of Owens Valley, California. In Walawender, M.J., and Hanan, B.B., (eds.), *Geological Excursions in Southern California and Mexico: Guidebook*, 1991 Geological Society of America Annual Meeting, p. 199-223.
- Gillespie, A. R., 1991. Testing a new climatic interpretation for the Tahoe glaciation. In *Natural History of Eastern California and High-Altitude Research*, edited by C. A. Hall, Jr., V. Doyle-Jones, and B. Widawski, *Proceedings of the White Mountain Research Station. Symposium 3*, 383-398.
- Gillespie, A. R., 1991. Quaternary subsidence of Owens Valley, California In *Natural History of Eastern California and High-Altitude Research*, edited by C. A. Hall, Jr., V. Doyle-Jones, and B. Widawski, *Proceedings of the White Mountain Research Station. Symposium 3*, 356-382.
- Gillespie, A. R., 1991. Trail Canyon fans: Capture history of Rock Creek. In Reheis, M. C., Slate, J. C., Sawyer, T. L., Sarna-Wojcicki, A. M., Harden, J. W., Pendall, E. G., Gillespie, A. R., and Burbank, D. M., *Guidebook for Field Trip to Fish Lake Valley, California-Nevada, Pacific Cell, Friends of the Pleistocene*, U. S. Geological Survey Open-File Report 91-290, p.178-184.
- Harden, J. W., Slate, J. L., Lamothe, P., Chadwick, O. A., Pendall, E. G., and Gillespie, A. R., 1991. Soil formation on the Trail Canyon alluvial fan. U. S. Geological Survey Open-File Report 91-291, 22 p.

- Roberts, D. A., Smith, M. O., Adams, J. B. and Gillespie, A. R., 1991. Spectral mixture analysis of AVIRIS data: Leaf spectral types, residuals and canopy shade. *Proceedings of the Third Airborne Visible/Infrared Imaging Spectrometer (AVIRIS) Workshop*, Jet Propulsion Laboratory Publication 91-28, Jet Propulsion Laboratory, Pasadena, CA., p. 43-50.
- Sabol, D. E., Adams, J. B., Smith, M. O., and Gillespie, A. R., 1991. Target detection thresholds using imaging spectrometer data. *Proc. of the Third Airborne Visible/Infrared Imaging Spectrometer (AVIRIS) Workshop*, Jet Propulsion Laboratory Publication 91-28, Jet Propulsion Laboratory, Pasadena, CA., p. 99-108.

1992

- *Gillespie, A. R., 1992. Enhancement of multispectral thermal infrared images: Decorrelation contrast stretch. *Remote Sensing of Environment* 42, 147-155.
- *Gillespie, A. R., 1992. Spectral mixture analysis of multispectral thermal infrared images. *Remote Sensing of Environment* 42, 137-145.
- Bierman, P. R., and Gillespie, A. R., 1992. Accuracy of rock-varnish chemical analyses: Implications for cation-ratio dating. Reply to comment by T. A. Cahill. *Geology* 20, 469-472.
- Bierman, P. R., and Gillespie, A. R., 1992. Accuracy of rock-varnish chemical analyses: Implications for cation-ratio dating. Reply to comment by R. I. Dorn. *Geology* 20, 471-472.
- Bierman, P. R., and Gillespie, A. R., 1992. Range fires: A significant factor in the dating and evolution of geomorphic surfaces. Reply to comment by R. I. Dorn. *Geology* 20, 283-285.
- Bierman, P., Gillespie, A., Harrington, C., Raymond, R., McFadden, L. and Wells, S., 1992. Throwing rocks. *American Scientist* 80, 110-112.
- Gillespie, A. R., Smith, M. O., and Sabol, D., 1992. A field technique for measuring the shadow fraction in spectral mixture analysis. *Proceedings of the Airborne Science Workshop: AVIRIS*, Jet Propulsion Laboratory, Pasadena, CA., 1-5 June.

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Gillespie, A. R., and Clark, D. H., 1994. The Holocene glaciation of the Sierra Nevada. White Mountain Research Station Lecture Series, Bishop, CA, 14 April.

1995

Bierman, P. R., and A. R. Gillespie, A. R., 1995. Geomorphic Applications of in-situ produced cosmogenic isotopes. Short Course. *Geological Society of America, Annual Meeting*, New Orleans, Nov.

Polansky, J., Gillespie, A. R., and Hoskinson, T., 1995. Calendrical precision at equinox sites: Apparent roles for both ritual and science. Utah Rock Art Research Association, Aug.

1997

Bierman, P. R., and A. R. Gillespie, A. R., 1997. Geomorphic Applications of in-situ produced cosmogenic isotopes. Short Course, *Geological Society of America, Annual Meeting*, Salt Lake City, Oct.

Gillespie, A. R., 1997. Fire-progress prediction (INVITED). Technical report submitted to Dr. Thomas McCord, Univ. Hawaii.

Gillespie, A. R., 1997. Remote Sensing in Death Valley (INVITED). Field trip for Dr. Terry Cook.

1998

Gillespie, A. R., 1998. G. K. Gilbert Award presented to John B. Adams (INVITED). *Geology Today*, March.

1999

- Gillespie, A. R., 1999. Thirty Years of Remote Sensing in Death Valley: What have we learned? (INVITED) Las Vegas, NV, April.
- Gillespie, A. R., 1999. Field methods of infrared imaging (INVITED). "Weathering of Basalts on Earth and Mars," (C. Weitz, D. Evans, Jet Propulsion Laboratory) August 14-18, Hilo, Hawaii.
- Gillespie, A. R., 1999. Astronomical petroglyphs in the western Great Basin (INVITED). Amateur Archaeologists of, Reno, NV, 14 Oct.
- Gillespie, A. R., 1999. In-scene atmospheric compensation in hyperspectral TIR images (Invited). Los Alamos National Lab., 8 November.
- Petroy, S. B., Gallerey, W., and Gillespie, A. R., 1999. Spectral and spatial analysis of the ASTER/TES algorithm for application to the VIIRS EDR – Land surface temperature. AER Algorithm IPT Memorandum, February 23.
- 2000**
- Gillespie, A. R., 2000. Heliometric dating of the solar petroglyphs in the Alabama Hills, California (Invited). *Annual Meeting of the International Society for the Study of American Cultures*, Columbus, GA. Oct.
- Gillespie, A. R., 2000. Quaternary history of Owens Valley, California, *Impacts of Climate Change on Landscapes of the eastern Sierra Nevada and Western Great Basin*, U.S.G.S. Earth Surface Dynamics Program, co-sponsored by U. S. Forest Service, Desert Research Institute, Bureau of Land Management, Bishop Office, and U. C. White Mountain Research Station, Bishop, CA. 29 Sept.
- Sabol, D., Buck, P., and Gillespie, A. R., 2000. Direct detection of archaeological sites with remote sensing. Final Project Report Strategic Environmental Research and Development Program (SERDP) Project CSA-1142, Army Research Office Grant Number DAAD-19-99-1-0261, April 12, 35 pp.
- 2001**
- Gillespie, A. R., 2001. Alpine glaciation in Mongolia (INVITED). Israel Geological Congress, Eilat, 20 March.
- Gillespie, A. R., 2001. Weathering of depositional surfaces viewed by remote sensing (INVITED). Department of Geology, The Hebrew University, Givat Ram, 27 March.
- Gillespie, A. R., 2001. Relative dating of fans and lava flows with remote sensing (INVITED). Whitman College, Walla Walla, April 12.
- Gillespie, A. R., 2001. A summer solstice petroglyph complex, eastern California (INVITED). Whitman College, Walla Walla, April 12.
- Gillespie, A. R., 2001. Stephen C. Porter — In appreciation. *Quaternary Research* 55, 1.
- 2002**
- Gillespie, A. R., Gustafson, W., Sabol, D., Kahle, A., and Abbott, E., 2002. Temperature/emissivity separation. *Proceedings of the International Conference on Advances in Infrastructure for e-Business, e-Education, e-Science, and e-Medicine on the Internet*, Scuola Superiore G Reiss Romoli (SSGRR-2002S), L'Aquila, Italy, 29 August.
- Gillespie, A., 2002. Glaciation in Central Asia (Invited). Lehigh University, Bethlehem, PA, Nov.
- Gillespie, A., 2002. TES status update. 24th Joint ASTER Science Team meeting, Palm Springs, California, 4 December
- Gillespie, A., 2002. ASTER TES follow-on activity. 24th Joint ASTER Science Team meeting, Palm Springs, California, 4 December.
- 2003**
- Mushkin, A., Gillespie, A., Balick, L., 2003. Temperature/emissivity separation with MTI. MTI Workshop, Santa Fe, June.
- Gillespie, A., 2003. Glaciation in Central Asia (INVITED). University of California, Riverside, March.
- 2004**
- Sabol, D.E., Gillespie, A.R., Mushkin, A., Karl Hibbitts, C., 2004, Remote Sensing for Characterization of Desert Surfaces. Desert Trafficability Workshop, Bearfight Institute, Winthrop, WA, Jan.
- Gillespie, A. R., 2004. *ARO review Las Vegas, NV*
- 2006**
- Adams, J., Gillespie, A.R., Montgomery, D., Haugerud, R., 2006. Integration and Implications of natural history on life in the Methow Valley. Methow Conservancy 2006 Conservation Courses: Taking a Deeper Look. Reading the Land: Regional Geology. Winthrop/Twisp, Washington. March 13 – April 24.
- Adams, J., Gillespie, A.R., Montgomery, D., Haugerud, R., 2006. Field Trip. Methow Conservancy 2006 Conservation Courses: Taking a Deeper Look. Reading the Land: Regional Geology. Winthrop/Twisp, Washington. March 13 – April 24.
- Gillespie, A. R., 2006. Report on RAQRS II. 30th ASTER Joint US/Japanese Science Team Meeting, Pasadena California, December.
- 2007**
- Gillespie, A.R., 2007. Outburst flood monitoring. Geology Working Group, 31st Joint ASTER Science Team meeting, Tepia Convention Center, Aoyama, Tokyo, 6 June.
- Gillespie, A.R., 2007. Paleoclimate in Central Asia. Geology Working Group, 31st Joint ASTER Science Team meeting, Tepia Convention Center, Aoyama, Tokyo, 6 June.

- Gillespie, A.R., 2007. Update on validation program for TES. Temperature/Emissivity Working Group, 31st Joint ASTER Science Team meeting, Tepia Convention Center, Aoyoma, Tokyo, 6 June.
- Gillespie, A.R., 2007. Monitoring catastrophic outburst floods from satellite (INVITED). ASTER Workshop, Tepia Convention Center, Aoyoma, Tokyo, 8 June.
- Gillespie, A.R., 2007. Patterns of late Quaternary glaciation in Central Asia. International Quaternary Association (INQUA)(INVITED KEYNOTE). Cairns, Australia, 1 August.

2008

- Adams, J., Gillespie, A., Jackson, M., and Montgomery, D., 2008. Allochthonous Flow and Diapirism in Hebes Chasma, Mars. Applied Geodynamics Laboratory, Fri 17 Oct., University of Texas at Austin, TX
- Dooley, T., Jackson, M., Adams, J., Gillespie, A., and Montgomery, D., 2008. Vanishing Rock in the Deepest Martian Canyon: Modeling the Collapse of Hebes Chasma. Applied Geodynamics Laboratory, Fri 17 Oct., University of Texas at Austin, TX.
- Gillespie, A. R., 2008. A potential problem. Geology Working Group, 34th Joint ASTER Science Team meeting, Sheraton, Pasadena, California, 9 December.
- Gillespie, A. R., 2008. Karstic subsidence of the giant canyons of Mars. Geological Survey of Israel, Jerusalem, 19 June, invited.
- Gillespie, A. R., and Elsa. A. Abbott, 2008. New findings on emissivity spectra accuracy. Temperature/Emissivity Working Group, 34th Joint ASTER Science Team meeting, Sheraton, Pasadena, California, 10 December.
- Pieri, D. C., and Gillespie, A. R., 2008. Paleo ice-cap surfaces and extent. Geology Working Group, 34th Joint ASTER Science Team meeting, Sheraton, Pasadena, California, 9 December.

2009

- Gillespie, A. R., 2009. Salt karst in the Martian Highlands? (Invited). University of New Mexico, Caswell Silver Distinguished Lecturer, 07 Oct.
- Gillespie, A. R., 2009. Glaciation and paleoclimate in arid Central Asia (Invited). University of New Mexico, Caswell Silver Distinguished Lecturer, 08 Oct.
- Gillespie, A. R., 2009. Very large outburst floods (Invited). GLOCOPH, Haifa, Israel, 25 October.
- Gillespie, A. R., 2009. Spatial heterogeneity in Central Asian paleoclimate (Invited). GLOCOPH, Jerusalem, Israel, 28 October
- Gillespie, A. R., 2009. Glaciation in Central Asia (Invited). Humboldt State University, Arcata, California, 16 November.
- Gillespie, A. R., Abbott, E. A., and Gilson, L., 2009. Residual atmospheric effects in AST005. Temperature-Emissivity Working Group, 36th Joint ASTER Science Team meeting, Westin on Market, San Francisco, California, 10 December.
- Gillespie, A. R., Abbott, E. A., and Gilson, L., 2009. Errors in AST005: due to calibration or atmospheric correction? Radiometric Calibration ACT TIR Working Group, 36th Joint ASTER Science Team meeting, Westin on Market, San Francisco, California, 11 December.
- Mushkin, A., and Gillespie, A., R., 2009. ASTER 3B/3N for relative dating of alluvial surfaces. Geology Working Group, 36th Joint ASTER Science Team meeting, Westin on Market, San Francisco, California, 9 December.
- Mushkin, A., Gillespie, A., R., and Danilina, I., 2009. ASTER 3B/3N for correcting emissivity products. Temperature-Emissivity Working Group, 36th Joint ASTER Science Team meeting, Westin on Market, San Francisco, California, 10 December.
- Mushkin, A., and Gillespie, A., R., 2009. Stand age estimation at Cedar River/Gifford Pinchot (Washington) via ASTER 3B/3N surface roughness estimation. Ecosystem Working Group, 36th Joint ASTER Science Team meeting, Westin on Market, San Francisco, California, 10 December.

2010

- Gillespie, A. R., 2010. Acceptance for the Khubilai Khaan Award, Mongolian Academy of Sciences (invited). Ulaanbaatar, 29 June.
- Gillespie, A. R., 2010. Spectral constraints on the composition of low-albedo slope streaks in the Olympus Mons Aureole, Planetaryum Seminar, Oct 27, University of Washington.
- Ploskey, Z., Gillespie, A., Stone, J., Clark, D., 2010. Glacial chronology of Convict Creek, eastern Sierra Nevada, CA. Graduate Student Research Symposium, Department of Earth and Space Sciences, University of Washington, Seattle, April.
- Wiedmer, M., Montgomery, D. R., Gillespie, A. R., and Greenberg, H., 2010. Flushing Lake Atna: Late Quaternary Megafloods in South-Central Alaska. The Water Center, College of Forest Resources, University of Washington, January 12, <http://water.washington.edu/Outreach/Events/Tuesday/W10/wiedmer.html>

2011

- Batbaatar, J., and Gillespie, A. R., 2011. Ice ablation in arid climates (Invited). Chinese Academy of Sciences, Xining, Qinghai, China. 12 September.
- Gillespie, A. R., 2011. Glaciation in the Tien Shan (invited). ICDP planning meeting, Bishkek, Kyrgyzstan, June.13.
- Gillespie, A. R., 2011. Quaternary glaciation in northern Central Asia (invited). University of Tomsk, July.

- Gillespie, A. R., 2011. Paleoclimatogological expedition to NE Tibetan Plateau (Qinghai Plateau) (Invited). Chinese Academy of Sciences, Xining, Qinghai, China. 12 September.
- Wiedmer, M., and Gillespie, A. R., 2011. Megafloods from glacial Lake Atna (invited). University of Tomsk, July.
- Gillespie, A. R., 2011. Glaciation at the three corners of the Tibetan Plateau (Xizang, Qinghai and Gansu) (invited). Tibetan Institute, Chinese Academy of Sciences, Beijing, 11 Sept.
- Gillespie, A. R., 2011. Glaciation in the Gobi Desert (invited). Institute of Earth Environment, Chinese Academy of Sciences, 12 Sept.
- Gillespie, A. R., 2011. Glaciation in the northeastern Tibetan Plateau (invited). Qinghai Institute of Salt Lakes, Chinese Academy of Sciences, 13 Sept.
- Gillespie, A. R., 2011. Glaciation in arid Central Asia (invited). Lanzhou University, China, 28 Sept.
- Gillespie, A. R., 2011. Manuscript preparation and editorial policy for the journal (invited). *Quaternary Research* (invited). Lanzhou University, China, 29 Sept.

2012

- Gillespie, A. R., Abbott, E. A., and Danilina, I., 2012. Is the TIR emissivity of Earth-surface materials a significant function of kinetic temperature? 41st US – Japanese Joint Science Team Meeting, Tokyo, Temperature–Emissivity Working Group, June 13
- Amit, R., Enzel, Y., Crouvi, O., Mushkin, A., Jigjidsuren, B., and Gillespie, A., 2012. The role of active sand seas in forming warm-desert loess sequences and implications to the CLP. Quaternary Research Center Conference and Fieldtrip on Loess, University of Washington, May 16.
- Yehouda Enzel, Y., Crouvi, O., Amit, R., and Alan Gillespie, A. R., 2012. Intensive winds during glacial times increased sand dunes activity and loess deposition at margins low-latitude warm deserts (invited). Quaternary Research Center Conference and Fieldtrip on Loess, University of Washington, May 21.
- Gillespie, A. R., 2012. Loess in Washington – organization of the field trip. Quaternary Research Center Conference and Fieldtrip on Loess, University of Washington, May 16.
- Gillespie, A. R., 2012. Glacigenic loess near the terminus of the Cordilleran Ice Sheet on the Waterville Plateau. Quaternary Research Center Conference and Fieldtrip on Loess, University of Washington, May 20.
- Gillespie, A. R., 2012. The climatic significance of Tibetan glaciations (invited). Keynote lecture, International Symposium on the uplift of the Qinghai-Tibetan Plateau and its Societal and Environmental Impacts: In celebration of Professor Li Jijun's 80th birthday and his academic career, theories and achievements, Lanzhou University, China, October 10.
- Gillespie, A. R., 2012. Writing scientific papers (Invited). Graduate lecture, Lanzhou University, China, October 11.
- Gillespie, A. R., 2012. University study in the United States and Europe (invited). Graduate lecture, Lanzhou University, China, October 11.
- Gillespie, A. R., 2012. Darhad Glaciations, Mongolia (invited). Kanazawa University, Japan, 26 November.
- Gillespie, A. R., 2012. Yenisei Megafloods from Darhad Basin, Mongolia (invited). Kanazawa University, Japan, 26 November.
- Gillespie, A. R., and Batbaatar, .2012. Sediment cores DBC1 and DBC2, Paleolake Darhad, Mongolia (invited). Kanazawa University, Japan, 26 November.
- Gillespie, A. R., and Abbott, E. A., 2012. Update: Is TIR reflectivity of Earth-surface materials a significant function of kinetic temperature? 42nd US – Japanese Joint Science Team Meeting, Pasadena, Temperature–Emissivity Working Group, December 12.
- Ramsey, M., and Gillespie, A. R., 2012. Is emissivity immutable? Report on an AGU presentation. 42nd US – Japanese Joint Science Team Meeting, Pasadena, Temperature–Emissivity Working Group, December 12.

2013

- Gillespie, A. R., 2013. Geology and the Pacific Northwest (Invited). Methow Conservancy, 4 February, Twisp, Washington.