

## RESUME WITH SELECTED BIBLIOGRAPHY, 2015

### RICHARD A. YOUNG, PhD, GEOLOGY

**Geologist:** Department of Geological Sciences, SUNY, Geneseo, NY 14454 (585-245-5296, 5291)

Experience and Interests: Geomorphology, groundwater, environmental geology and waste disposal, photogrammetry, GIS, glacial geology (NY), lunar and planetary geology, sedimentation, engineering geology, Colorado Plateau Tertiary geology.

#### **Education:**

Cornell University, B.A. Geology, 1962

Washington University (St. Louis), Ph.D., Geology, 1966

Dissertation: ***Cenozoic Geology along the Edge of the Colorado Plateau in NW Arizona.***  
(Hualapai Indian Reservation and adjacent areas)

#### **Academic Positions, Appointments and Awards:**

2013 (June)	<b>Professor Emeritis</b> , Department of Geological Sciences, SUNY Geneseo (Research projects)
2010	<b>Geneseo Alumni Award</b>
2004	President's Award for <b>Excellence in Research and Creative Endeavors, SUNY Geneseo</b>
2002	Awarded <b>SUNY Chancellor's Research Recognition Award</b> (Albany, October 2002).
1991-present	Appointed <b>Distinguished Service Professor of Geological Sciences, State University of New York</b> by SUNY Chancellor (at SUNY, Geneseo)
1990	Appointed <b>Faculty Exchange Scholar</b> , SUNY, by Chancellor Johnstone
1979-1991	<b>Professor</b> , Department of Geological Sciences, SUNY College of Arts and Science, Geneseo, New York
1977-1986	<b>Chairman</b> , Department of Geological Sciences, SUNY College of Arts and Science, Geneseo, New York
1966-1977	<b>Assistant and Associate Professor</b> of Geological Sciences, SUNY College of Arts and Science, Geneseo, New York

#### **Selected Professional and Consulting Positions:**

2012- present	<b>Enviro Compliance Solutions, Inc.</b> , Contract to USDOE and NYSERDA as member of Subject Matter Expert, Erosion Working Group, for Erosion Studies for West Valley Nuclear Waste Site (West Valley Demonstration Project Phase 1 Studies at Western NY Nuclear Service Center).
2002-2003	<b>US Army Corps of Engineers</b> study of Genesee River erosion history.
2005-present	<b>Citizens Representative</b> , Akzo-Nobel Retsof Brine Mitigation Project (follow-up mitigation efforts following Retsof Mine collapse of 1994)
1994-present	Consultant to NY State Attorney General's Office (Peter Skinner, Tim Hoffman) on issues related to Retsof Mine collapse. Also, water-well pollution at Bennett Heights subdivision, Batavia NY, and Akzo Brine Mitigation committee.
1977-1993	<b>Hydrologist with U.S. Geological Survey</b> , Ground Water Branch, Ithaca, NY. W.A.E. Status for glacial, ground water, and sedimentological studies in the Genesee Valley region. IJC Studies of Great Lakes pollution and National Urban Runoff Program (NURP).
1980-1999	Occasional geologic <b>consultant to H &amp; A of New York, Inc.</b> Including: Pure Waters Combined Sewer Overflows and Abatement Project (CSOAP) ( <b>structural deformation in deep sewer tunnels</b> ). <b>Gravel Pit</b>

- evaluation** and court testimony; **Iroquois Gas Transmission Pipeline photogeologic route analysis and field evaluation** (St. Lawrence to Hudson River).
- 1994 Hualapai Indian Tribe, Grand Canyon. **Geologic Consultant during Environmental Impact Studies**, western Grand Canyon Trip, October 1994
- 1993 -1996 Consultant to P. Hartnett, Esq., Tully Valley **Salt Mine (Mud Boils) Lawsuit**
- 1983-1994 Geologic **consultant to IMS Engineers, Superfund Hazardous Waste site geologist, Moyer Landfill, Pennsylvania** (Subcontract to NUS Corp.). Also additional projects on occasional basis. 1992-3 **Scofield Barracks (U.S. Army base), Oahu, Hawaii**, Groundwater contamination studies of base facilities, hydrogeology.
- 1985-1986 **Consultant to Rochester Gas & Electric/Morrison-Knudson Engineers** for hydrogeologic data evaluation of Lower Falls hazardous waste site, Rochester, NY.
- 1986-1992 Geologic **consultant to U.S. Bureau of Indian Affairs** (Truxton Canyon Agency, Arizona) and Hualapai Tribe for water well site selection on Hualapai and Havasupai Indian Reservations.
- 1978-2010 **Geologic consultant to Monroe County** Environmental Management Council, Landfill Review Committee and Monroe County Health Department, Waste Site Advisory Committee). Including funding from N.Y.S.D.E.C. and U.S.E.P.A. for location and evaluation of county-wide abandoned waste sites (Published as U.S.E.P.A. Document EPA-600/4-83-050, 1983).
- 1985-1987 Field reconnaissance reviews for N.Y. State Geological Survey, **Surficial Geologic Map of N.Y.**, Niagara and Finger Lakes Sheets.
- 1977-1978 Geologic **consultant, Town of Caledonia**, NY, Monroe-Livingston Landfill litigation (see publications).
- 1976 Geologic mapping for **N.Y. State Geological Survey**, Genesee River Watershed Mapping Project (Jointly funded by USGS, NYSDEC).
- 1972-1975 **Principal Investigator Contract for Apollo Missions 15-17** Photogeologic Analysis: Eastern Maria Data Analysis Experiment, NASA Contract NAS 9-12770, Manned Spacecraft Center, Houston.
- 1966 Geologic consultant to **Ocean Science and Engineering, Inc.** on **U.S. Army** contract to locate rock quarries in S. Vietnam. Electrical Resistivity and Seismic surveys, Rock drilling and field evaluation.
- 1962-1964 Geologic **research contract at Museum of Northern Arizona**, Cenozoic Geology, Hualapai Reservation (Developed into PhD dissertation, mapping project 1962-1966).

### Current Professional Societies:

Geological Society of America (Fellow)

### Research Awards and Grants:

Museum of **Northern Arizona**, Geology of Hualapai Indian Reservation (Summers 1962-1964).  
 Geological Society of America **Penrose Bequest Grant** (1964).  
 SUNY **Research Foundation**, Faculty Fellowship (1971).  
 NASA Contract NAS 9-12770, **Photogeologic Analysis Apollo Projects 15-17** (1972-1975).  
 SUNY Research Foundation, **Faculty Fellowship and Grant-in-Aid** (1975).  
 Collaborations in Art, Science, and Technology (CAST) N.Y. State Council on the Arts. **Use of ERTS satellite imagery** with M.J. Teres (Exhibit at Syracuse University, 1975).  
 NYS Geological Survey, **Mapping project, Genesee Valley** (1975-1976).  
 USEPA (Las Vegas Environmental Systems Lab) Jointly with Monroe County Environmental Management Council for pilot study, development of US EPA manual to **evaluate abandoned waste sites** (1981-1983).  
 NYS/UUP Experienced **Faculty Travel Awards**, 1985 and 1987, Arizona-Colorado Plateau Field Research.  
 Genesee Foundation, Arizona Research, **Decade of North American Geology** project.  
**Cole Memorial Research Grant**, Geological Society of America, 1988, **Research on Colorado Plateau**, Grand Canyon.

SUNY Geneseo **Research Development Award, Genesee Valley** Pleistocene Chronology, 1992.  
Monroe County, NY, **Chronology of Irondequoit Bay** Pleistocene History, 1992.  
Monroe County Health Department Study of **Irondequoit Creek submergence** (Ellison Park) (1996)  
Monroe County Health Department Study of rates of **Genesee River meander migration** (1997)  
SUNY Geneseo **Spencer Roemer Summer Research Fellowship**, \$5000 (1999)  
**US Corps of Engineers** study of Genesee River erosion history, \$64,000, (2002-2003)  
Univ. of Arizona, 2004, (cooperative research with George Burr) **25 radiocarbon ages** (\$400 each)

### **Teaching and Research Interests:**

Tectonic geomorphology, fluvial geomorphology, general geology, lunar and planetary geology, glacial geology, remote sensing and geographic information systems (GIS), environmental geology, sedimentation, Cenozoic geology of Colorado Plateau/Grand Canyon, structural controls of ground water, Hawaii & New York (global stadial and interstadial glacial events).

### **Science Television Documentaries** (participant, consultant)

**NOVA** Grand Canyon-John Wesley Powell (1992)

**National Geographic Channel**- Naked Science series: Grand Canyon (2007)

**History Channel** – How the Earth was made series: Grand Canyon (2009)

### **Travel and Field Experience:**

New Zealand, South Vietnam, Southwestern U.S., Hawaii, New England, Big Horn Mts., Wyoming, Ozarks, Central and western N.Y., Nevada Test Site, Scotland. Coleader, Geological Society America, Colorado River-Grand Canyon Geological Society of America Geoventure Trip (WGBH-NOVA) J.W. Powell Video Program, 1992.

### **Personal Data:**

Born Providence, R.I., 1940, Married, two children (Christopher, Erinna)

Wife: Diony (Sutherland), New Zealand born. Author; Editor of journal, ***Birth*** (Wiley-Blackwell).

Home phone: 585-243-0087

### **Professional Committees:**

Resource Group Member Ad Hoc Lunar Photography and Cartography Committee, **Lunar and Planetary Science Inst., Johnson Space Center.**

Crater Analysis Techniques Working Group, **NASA, Office of Space Science**, Washington, D.C.

**International Geodynamics Committee** (Working Group 7) Organizing Committee for Plateau Uplift Symposium and Associate Editor for Proceedings, **Johnson Space Center.**

Crater Analysis Methodologies Workshop, **USGS/NASA**, Flagstaff, AZ, NASA Tech. Mem. 79730, Icarus, v. 37, p. 467- 474.

**Enviro Compliance Solutions, Inc.**, Contract to USDOE and NYSERDA as member of **Subject Matter Expert, Erosion Working Group**, for Erosion Studies for West Valley Nuclear Waste Site (West Valley Demonstration Project Phase 1 Studies at Western NY Nuclear Service Center).

### **Major Conferences (Involving organization, participation, workshops, publications):**

Lunar and **Planetary Science** Conferences (Annual) 3rd through 8th, 10th, 12th, 15th (papers published in proceedings).

NASA Lunar Utilization Conference: Utilization of Unique Mare Stratigraphy for determination of **lunar surface material properties and location of subsurface operations facilities** (Paper at Special Session of 7th Lunar Science Conference, 1976).

15th Annual Binghamton **Geomorphology Symposium** (publication, Tectonics, Colorado Plateau-Grand Canyon).

Interdisciplinary Aspects of **Radioactive Waste** Generated by Nuclear Power Plants (SUNY Cortland, 1983, Speaker).

Till facies workshop: **Glacial Deposits in the Northeast, N.Y.** State Geological Survey, 1983.

Risk Assessment at **Hazardous Waste Sites**, American Chemical Society Symposium, Las Vegas (1982, paper in proceedings, hardbound text, American Chemical Society).

The Impact of **Waste Storage and Disposal on Groundwater Resources**, U.S. Geological Survey, Ithaca, (paper in proceedings).

Symposium: Mesozoic and **Cenozoic Tectonics of the Lower Colorado River** Region, Geological Society of America, Anaheim, CA, Paper in Anderson-Hamilton Volume, 1982.

Tectonic framework of the **Mohave-Sonoran Deserts**, California and Arizona, Panelist, Paper in proceedings, 1980. USGS Open-File Report 81-503

Rochester Academy of Science Centennial Meeting on **Geology of Genesee Valley**, Co-chairman, Paper in proceedings, 1981.

N.Y. State Geological Survey Conference: Status of the **N.Y. Surficial Geologic Map** (1981).

First National **Groundwater Monitoring** Conference and Exposition, Ohio State University, 1981.

Crater Analysis Methodologies Workshop, **NASA/USGS**, Flagstaff, 1977.

International Geodynamics Committee **Plateau Uplifts Conference**, Field trip co-leader, Las Vegas to Flagstaff, paper in proceedings, 1978, Tectonophysics, V. 61.

Regional Geophysics and Tectonics of the Intermountain West, Geological Society of America **Penrose Conference**, Alma, Utah, 1975.

Hawaiian **Planetology Conference**, Hilo, Hawaii, NASA, 1974, Mars Mapping Conference.

Pleistocene Stratigraphy in the Northeast, Geological Society of America **Penrose Conference**, Univ. of Mass., 1974.

Pacific to **Arizona Crustal Experiment** meeting (PACE), USGS, Flagstaff, 1985.

Lunar and Planetary Institute Topical **Conference on Heat and Detachment in Crustal Extension on Continents and Planets**, (speaker) Sedona, Arizona, 1985.

Field-trip co-leader for "**Structure and Geomorphic Character of Western Colorado Plateau in the Grand Canyon-Lake Mead Region**", Geological Society of America Rocky Mt. Section Meeting, Flagstaff, 1986.

Field-trip co-leader for "**Geomorphology and Structure of the Colorado Plateau/Basin and Range Transition Zone, Arizona**", 100th Annual Meeting of the Geological Society of America, Phoenix, AZ, 1987.

Symposium Organizer, Chronology and Style of **Laramide and Early Tertiary Events in the Southern Great Basin and Adjacent Colorado Plateau Transition Zone**, Geological Society of America Cordilleran Meeting, Las Vegas, March 1988.

Co-author, Geological Society of America Decade of North American Geology Volume (DNAG), **Geomorphic Systems of North America, Special Volume 2** (Colorado Plateau Tertiary history, Chapt. 8), 1987

PACE/CACTIS Conference, U.S. Geological Survey, Flagstaff, AZ, 1988 (**Pacific-Arizona Crustal Experiment**).

28th International Geological Congress, Washington, DC, July 1989, Symposium presentation and poster session, Colorado Plateau.

Geological Society of America, Northeastern Section Meetings, Buffalo, 1996, Organizer: **Symposium on Early and Middle Wisconsin Events in the Great Lakes-Eastern North America Region** (Fall 1996).

Geological Society of America Annual Meeting, Denver, 1996, **Cretaceous-Tertiary Uplift of the SW Colorado Plateau: Abstracts with Programs**, v. 28, no.7, p. A514. (paper presented)

Geological Society of America Northeastern Section Meeting, Portland Maine, 1998, **Bedrock-Till deformation structure along the Clarendon-Linden fault zone near Linden, NY**: Abstracts with Programs, v. 31, no. 2, p. 85, paper presented.

Geological Society of America Northeastern Section Meeting, Providence, RI, 1999, **Regional Hydrologic impact of a large**

**salt mine collapse beneath a deep, ice-scoured, drift-filled bedrock valley, west-central, NY State**, Abstracts with Programs, v. 31, no., 2, p. A-81, paper presented.

Geological Society of America Annual Meeting, Denver, October 1999, Paper accepted for presentation in Theme Session, **Terrestrial Signature of Heinrich Event (H4) in Western NY**.

Workshop for western **NY Secondary School Teachers**, Letchworth Park, October 18, 1999; Lecture and Field Trip (Ideas and materials for teaching glacial geology topics).

**Chair and organizer** of Symposium on **Origin of Grand Canyon/Colorado River**: June 2000, Grand Canyon National Park, Sponsors: Grand Canyon National Park, Grand Canyon Association, US Geological Survey, Northern Arizona Univ., Arizona Geological Survey, Nevada Geological Survey, SUNY Geneseo Geological Sciences Department (Grand Canyon Association Monograph 12 (2001)

**The Mackin Conference**, 2001, Invited Symposium: "The Geologic Transition, High Plateaus to Great Basin – A symposium and Field Guide". Utah Geologic Association Publication 30 (Pacific Section AAPG Guidebook 78), publication listed below.

**USGS Workshop – Grand Canyon – Colorado River Evolution 2**, Co-convenor and co-chair. Flagstaff, AZ. May 24-26, 2010. Research progress on Colorado River History, Details at: <https://sites.google.com/site/crevolution2/home>

### **Publications Other Than Abstracts and Short Papers** (In chronologic order)

- McKee, E.D., Wilson, R.F., Breed, W.J., Breed, C.S., *eds.*, 1967, Evolution of the **Colorado River in Arizona**: Mus. Northern Arizona Bull., v. 44, p. 1-68. (**R.A. Young**: Approximately 14 pages of data and discussion in text).
- Young, R.A.**, 1970, Geomorphological implications of **pre-Colorado and Colorado tributary drainage** in the western Grand Canyon region: Plateau, v. 42, no. 3, p. 107-117.
- Young, R.A.**, 1972, Lunar volcanism: **Mare ridges and sinuous rilles**: Apollo 16 Preliminary Science Report, NASA SP-315, Sec. 29, Part P, p. 79-80.
- Young, R.A.**, 1972, **Lunar volcanism**: fracture patterns and rilles in marginal mare craters: Apollo 16 Preliminary Science Report, NASA SP-315, Sec. 29, Part R, p. 89-90.
- Young, R.A.**, Brennan, W.J., and Wolfe, R.W., 1972, **Photogeology: Volcanic and surficial features, Apollo 16** Preliminary Science Report, NASA SP-315, Sec. 29, Part O.
- Young, R.A.**, Brennan, W.J., Wolfe, R.W., and Nichols, D.J., 1973, Analysis of **lunar mare geology** from Apollo Photography, Proceedings of the Fourth Lunar Science Conference, Geochim. Cosmochim. Acta, Suppl. 4, v. 1, p. 57-71.
- Young, R.A.**, Brennan, W.J., Wolfe, R.W., and Nichols, D.J., 1974, **Volcanism in the lunar maria**, Apollo 17 Preliminary Science Report, NASA SP-330, p. 31-1 to 31-11.
- Young, R.A.**, and Brennan, W.J., 1974, **The Peach Springs Tuff**: Its bearing on the structural evolution of the Colorado Plateau and the development of Cenozoic drainage in Mohave County, Arizona: Geological Society of America Bull., v. 85, p. 83-90.
- Young, R.A.**, and Rhodes, W.D., 1973, Late glacial and post **glacial geology of the Genesee Valley** in Livingston County, New York: *In* Guidebook to field excursions, 45th Annual Meeting N.Y. State Geological Association, 17 pages, 6 figs.
- Young, R.A.**, Brennan, W.J., and Nichols, D.J., 1974, **Stratigraphic variations beneath lunar mare** surfaces as indicated by ejecta characteristics of 0.5 to 2 km. craters, *In* "Lunar Science V", The Lunar Science Institute, Houston, Texas, p. 863-865.
- Young, R.A.**, Brennan, W.J., and Nichols, D.J., 1974, Problems in the **interpretation of lunar mare stratigraphy** and relative ages indicated by ejecta from small impact craters. Proc. of the Fifth Lunar Science Conference, Geochim. Cosmochim. Acta, Suppl. 5, v. 1, p. 159-170.
- Young, R.A.**, 1975, **Mare Crater-Size frequency distributions**: Implications for relative surface ages and regolith development. Proceedings of the Sixth Lunar Science Conference, Geochim. Cosmochim. Acta, Suppl. 6, v. 3, p. 2645-2662. Pergamon Press, N.Y.
- Young, R.A.**, and Brennan, W.J., 1976, Selected aspects of **lunar mare geology from Apollo Orbital photography**. Final Report, NASA Contract NAS9-12770, NASA CR-147424, 177 p.
- Young, R.A.**, 1976, The morphological **evolution of mare-highland contacts**: A potential measure of relative mare surface age. Proc. Lunar Science Conference 7th, p. 2801-2816, Pergamon Press, N.Y.
- Young, R.A.**, 1977, A **stratigraphic model for Bessel Crater and southern Mare Serenitatis**. *In* Impact and Explosion Cratering: Planetary and Terrestrial Implications, eds. Roddy, Peppin and Merrill, Pergamon Press, p. 527-538.
- Young, R.A.**, 1978, **Field Trip Guide for International Geodynamics Committee** Conference on Plateau Uplift: Mode and Mechanism. *In* abs. volume, p. F1 to F13, 6 Figs., map. Lunar and Planetary Institute, Houston.
- Young, R.A.**, 1977, The **lunar impact flux**, radiometric age correlation and dating of specific lunar features. Proc.

- 8th Lunar Science Conference, Pergamon Press, N.Y., v. 3, p. 3457-3473.
- Young, R.A.**, and McKee, E.D., 1978, **Early and Middle Cenozoic drainage** and erosion in west-central **Arizona**, Geological Society of America Bull., v. 89, no. 12, p. 1745-1750.
- Young, R.A.**, 1979, Laramide Deformation, Erosion, and Plutonism along the **SW margin of the Colorado Plateau**. Tectonophysics, v. 61, p. 25-47 (Proceedings of International Geodynamics Commission Plateau Uplifts Symposium).
- Young, R.A.**, (as member of **Crater Analysis Techniques Working Group**), 1979, Standard Techniques for Presentation and **Analysis of Crater-Size frequency data**: Icarus, v. 37, p. 467-474 (Also NASA Technical Memorandum 79730).
- McGetchin, T.R., Burke, K., Thompson, G., **Young, R.A.**, 1979, **Plateau Uplifts: Mode and Mechanism**. EOS (American Geophysical Union), v. 60, p. 64-67.
- Young, R.A.**, 1980, Maps of **bedrock surface, shallow groundwater, and overburden thickness for Monroe County, N.Y.**, Monroe County Environmental Management Council, Nine sheets (1:24,000) with explanatory text and references, Rochester, N.Y.
- Young, R.A.**, 1980, **Subsurface Bedrock Contour Maps, Generalized Groundwater Contour Maps, and Overburden Thickness Maps, Monroe County, New York**: (with explanation), 3 maps in 9 sheets at 1:48,000 scale. Available at cost of reproduction from Monroe County Environmental Management Council, Rochester, N.Y. (Reduced version of earlier produced, 1:24000 maps).
- Young, R.A.**, 1981, **Origin of the Grand Canyon**: Myths and Theories in modern perspective: Rocks and Minerals, v. 55, #1, p. 5-11 (cover photo subject).
- Young, R.A.**, and Hatheway, R.B., 1981, **Glacial Geology of the Genesee Valley-Dansville-Naples Region**: In Field Guidebook for Geology of Genesee Valley Area of Western New York, Spring Meeting of National Association of Geology Teachers, SUNY College at Brockport, p. C-1 to C-14, 34 figures.
- Nelson, A. and **Young, R.A.**, 1981, **A Comprehensive Methodology to Locate Abandoned Dump Sites**: A General Technique for Inventorying Counties and Prioritizing Sites for Future Investigation: For U.S. Environmental Protection Agency 1981 Conference on Management of Uncontrolled Hazardous Waste Sites. Proceedings Volume, October 1981. Washington, DC, p. 52-62. Publisher: Hazardous Materials Control Research Institute, Silver Springs, MD.
- Young, R.A.**, Nelson, A.B., and Hartshorn, L.A., 1982, **Methodology for Assessing Uncontrolled Site Problems at the County Level**: In: **Risk Assessment at Hazardous Waste Sites**, Eds. F.A. Long and G.E. Schweitzer, Amer. Chemical Society Symposium Series #204, p. 55-71. (Results of Symposium at the 183rd Meeting of American Chemical Society, Las Vegas, April 1982).
- Young, R.A.**, 1982, Paleogeomorphic Evidence for the **Structural History of the Colorado Plateau Margin** in Western Arizona: Anderson-Hamilton volume: **Mesozoic-Cenozoic Tectonic Evolution of the Colorado River Region, California, Arizona and Nevada**, p. 29-40. Eds. E. Frost and D. Martin. Symposium for Geological Society of America, Cordilleran Section, Anaheim, California, Cordilleran Publishers, San Diego, 608 pages.
- Young, R.A.**, 1982, Significant, Short-Term Effects of **Variations in Precipitation and Snowmelt** on Sampling Results from Shallow and Deep **Landfill Monitoring Wells** in Western New York: In: **The Impact of Waste Storage and Disposal on Groundwater Resources: A Northeast Conference presented by Cornell University, Ithaca, New York** (June 1982), p. 8.9.1 to 8.9.16 (Published by Cornell University).
- Nelson, A.B., **Young, R.A.**, and Hartshorn, L.A., 1983, **A methodology to Inventory, Classify and Prioritize Uncontrolled Waste Disposal Sites**: U.S. Environmental Protection Agency, Environmental Systems Monitoring Laboratory, Las Vegas, E.P.A. Report EPA-600/4-83-050, 128 pp.
- Young, R.A.**, 1985, Geomorphic evolution of the **Colorado Plateau margin in west-central Arizona**: A tectonic model to distinguish between the causes of rapid symmetrical scarp retreat & scarp dissection: In: **TECTONIC GEOMORPHOLOGY**, Hack and Morisawa, eds., Allen and Unwin, London, 400 pages (Ch. 12 of Symposium Volume).
- Young, R.A.**, 1985, Subsurface Hydrology: In: **LOCAL LAND USE DECISION-MAKING**, vol. 3, How to do an environmental review, Monroe County Environmental Management Council, Rochester, New York.
- Lucchita, I. and **Young, R.A.**, 1986, Structure and geomorphic character of the **western Colorado Plateau** in the Grand Canyon-Lake Mead region Arizona: **GEOLOGY OF CENTRAL AND NORTHERN ARIZONA**, Field trip Guidebook, Geological Society of America, Rocky Mt. Section Meeting, Flagstaff, AZ, p. 159-176.
- Graf, W., Hereford, R., Laity, J.E., and **Young, R.A.**, 1987, **The Colorado Plateau**: In: **GEOMORPHIC SYSTEMS OF NORTH AMERICA**, W. Graf, ed., Geological Society of America Decade of North America Geology Special Volume 2, (Tertiary history by R.A. Young), p. 259-302.
- Muller, E.H., Cadwell, D.H., Connally, G.C., and **Young, R.A.**, **Surficial Geologic Map of New York**, Finger Lakes Sheet, N.Y. State Geological Survey, (map scale 1:250,000). (Field reviews)
- Young, R.A.**, Peirce, H.W., and Faulds, J., 1987, **Geomorphology and Structure of the Colorado Plateau/Basin and Range Transition Zone, Arizona**: In: **GEOLOGIC DIVERSITY OF ARIZONA AND ITS MARGINS: EXCURSIONS TO CHOICE AREAS**: Arizona Bureau of Geology and Mineral Technology Special Paper 5, p. 182-196 (also Fieldtrip Guidebook for 100th Annual Meeting, Geological Society of America, Phoenix).
- Muller, E., **Young, R.A.**, Braun, D., and Wilson, M., 1988, **Morphogenesis of the Genesee Valley**, (Pleistocene and recent history of the Genesee River Basin), Northeastern Geology, v. 10, no. 2, p. 112-133.
- Young, R.A.**, 1988, **Pleistocene Geology of Irondequoit Bay**: In: W.J. Brennan (Ed.) Late Wisconsinan Deglaciation of the Genesee Valley, Guidebook 51st Annual Meeting Friends of the Pleistocene, Genesee (SUNY), New York, p. 73-87.

- Young, R.A.**, 1989, **Paleogene-Neogene Deposits of Western Grand Canyon, Arizona**: In: Geology of Grand Canyon, Northern Arizona: Eds. D.P. Elston, G.H. Billingsley, and R.A. Young, 28th International Geological Congress, Guidebook T115/315, American Geophysical Union, Washington, DC, p. 166-173.
- Elston, D.P. and **Young, R.A.**, 1989, Development of **Cenozoic Landscape of central and Northern Arizona**; Cutting of Grand Canyon: In: Geology of Grand Canyon, Northern Arizona: Eds. D.P. Elston, G.H. Billingsley, and R.A. Young, 28th International Geological Congress, Guidebook T115/315, American Geophysical Union, Wash., D.C., p. 145-154.
- Elston, D.P., **Young, R.A.**, McKee, E.D., and Dennis, M.L., 1989, Paleontology, Clast Ages, and Paleomagnetism of Upper **Paleocene Gravel and Limestone Deposits**, Colorado Plateau and Transition Zone, Northern and Central Arizona: In: Geology of Grand Canyon, Northern Arizona: Eds. D.P. Elston, G.H. Billingsley, and R.A. Young, 28th International Geological Congress, Guidebook T115/315, American Geophysical Union, Wash., D.C., p. 154-165.
- Elston, D.P., Billingsley, G.H., and **Young, R.A.** (Eds.), 1989, **Geology of Grand Canyon, Northern Arizona**: Fieldtrip Guidebook T115/315, 28th International Geological Congress, American Geophysical Union, Washington, DC, 240 p.
- Surficial Geologic Map of New York**, Niagara Sheet (revision) 1988, field and map review by **R.A. Young** and others (published by New York Geological Survey, Map and Chart Series #40).
- Kappel, W.M. and **Young, R.A.**, 1989, **Glacial History and Geohydrology of the Irondequoit Creek Valley, Monroe Co., NY**. U.S. Geological Survey, Water Resources Investigations Report 88-4145, 34 pages, maps.
- Mansue, L.M., **Young, R.A.**, and Soren, J., 1991, **Hydrogeologic Influences on Sediment Transport Patterns** in the Genesee River Basin, New York: In: Genesee River Watershed Study, Vol. IV, Part II, U.S. Environmental Protection Agency Report #EPA-905/9-91-005D, 1 plate, 2 figs., 8 tables pp. II-1 to II-33.
- Mansue, L.M., **Young, R.A.**, and Miller, T.S, 1991, Sources of **movement and sediment in the Canaseraga Creek Basin**, Dansville, New York: In: U.S. Environmental Protection Agency Report #EPA-905/9-91-005D, pp. III-1 to III-48.
- Elston, D.P. and **Young, R.A.**, 1991, **Cretaceous-Eocene (Laramide) Landscape Development Oligocene-Pliocene Drainage Reorganization of Transition Zone and Colorado Plateau, Arizona**, Jour. Geophysical Research, V. 96, No. B7, pp. 12,389-12,406.
- Young, R.A.**, and Burton, R., 1993, **Bluff erosion along Irondequoit Creek in Linear Park**: Roch. Comm. for Scientific Info., Bull. 315, 6pp, Figs., Rochester, NY.
- Young, R.A.** and Sirkin, Les, 1994, **Subsurface Geology of the lower Genesee River Valley Region**: A progress report on the evidence for Middle Wisconsin sediments and implications for ice sheet erosion models: N Y State Geological Association Field Trip Guidebook, 66th Annual Meeting, University of Rochester, p. 89-126. (ongoing research)
- Lundgren, L. and **Young, R.A.**, 1995, Mine failure, subsidence, and environmental impacts, **Retsof Salt Mine**, Livingston County, NY, 1994: New York Earth Science and the Environment, v.1, no. 1, p. 5-17.
- Nieto, A. and **Young, R.A.**, 1998, **Retsof Salt Mine Collapse and Aquifer Dewatering, Genesee Valley, Livingston County, NY**: In: Poland Symposium Volume: Land Subsidence, (J. Borchers, Ed.), Spec. Pub. 8, Assoc. Engineering Geologists, Star Publishers, Belmont, CA., p. 309-325.
- Young, R.A.**, 1998, **The Postglacial Tilting of Lake Ontario**: Rochester Committee for Scientific Information Bull. 322, 7 pp., Figs., Rochester, NY. (Also reprinted in Rochester Engineer magazine)
- Billingsley, G.H., Wenrich, K.J., Huntoon, P.W., and **Young, R.A.**, 1999, **Breccia Pipe and Geologic Map of the SW part of Hualapai Indian Reservation and Vicinity, Arizona**: U.S. Geological Survey Misc. Investigations Series Map I-2554, 2 maps with pamphlet (Appendix: pages 21-50, **Nomenclature and Ages of Late Cretaceous(?) – Tertiary Strata in the Hualapai Plateau Region, NW Arizona** by **R.A. Young**).
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**Young, R.A.**, 2011 (online), Genesee Valley Glacial and Postglacial Geology from 50,000 Years Ago to the Present: A Selective Annotated Review: Bulletin of the Rochester Academy of Sciences, 24 pages with illustrations.

**Young, R.A.**, 2011, Geologic map, cross section and illustrated Tertiary geologic history of the Peach Springs Arizona Quadrangle, Mohave County, Arizona, Scale 1:24,000, Available online as Report CR-11-O at Arizona Geological Survey website. Tucson, AZ.

**Young, R.A** and Crow, R., 2014, Paleogene Grand Canyon incompatible with Tertiary paleogeography and stratigraphy: Geological Society of America, Geosphere, v. 10, #4, p. 664-679.

**Young, R.A.**, 2014, Paleogene rim gravel of Arizona: Age and significance of the Music Mountain Formation: Geological Society of America, Geosphere, v. 10, #5, p. 870-891.

### **Research Papers in Preparation:**

Geology and geologic maps of the Milkweed Canyon-Hindu Canyon quadrangles, western Grand Canyon, Hualapai Indian Reservation, Mohave Co. Arizona (study of pre-Grand Canyon drainage system).

### **Research and Projects in Progress (2011-2013):**

Geologic history and chronology of late Cretaceous-Tertiary sedimentary rocks in northern Arizona using volcanic ash dates, U-Th/He thermochronometry, zircon dating, terrestrial fossils, and mammal teeth (jointly with various colleagues).

Radiocarbon chronology of unique Middle Wisconsin glacial advances in the Genesee Valley circa 35,000 years BP and correlation with marine Heinrich events in the North Atlantic region.

Development of highly sinuous channel forms without superposition in massive carbonates in the Grand Canyon region.

Erosion studies of small drainage basins as a function of age (12,000 to 16,000 years) in western NY. Outgrowth of erosion rate studies for western NY nuclear waste storage site at West Valley.

Conversion of Arizona field mapping research (1962-present) to ArcView products for archival preservation and distribution to Arizona State Geological Survey and interested colleagues (Sabbatical 2007).

Hualapai Indian Reservation: Location of water well for pipeline to Grand Canyon West (2009-2010).

Hualapai Indian Reservation: Dating of volcanic ash bed in Tertiary section, and zircon provenance analyses with W. R. Dickinson, and G.E. Gehrels, and R. Crow (field work, June, 2009-2010)

Workshop co-organizer (June 2010), <https://sites.google.com/site/crevolution2/home>, Colorado River evolution, US Geological Survey, Flagstaff , AZ (open-file and GSA publications in preparation).

Co-organizer, Geological Society of America Annual Meeting, Denver: Topical Session on: Cenozoic Landscape Evolution of the Rocky Mountain–Colorado Plateau Region: The Colorado River System from the Rockies through Grand Canyon to the Gulf of California, *GSA Quaternary Geology and Geomorphology Division*, Karl Karlstrom, Andres Aslan, Kyle House, **R.A. Young**, November, 2010.

Co-editor, Geological Society of America, Geosphere (e-journal) special issue on Colorado River Workshop, CREvolution 2, (June 2010), See above references (Deadline December 2011).

Geological Society of America Annual Meeting Special Session: CREvolution 2: Cenozoic Landscape Evolution of the Colorado Plateau–Rocky Mountain Region and the Carving of Grand Canyon (Colorado River-Colorado Plateau Symposium); Co-organized, speaker, and co-chair. Denver Colorado, October 28-29, 2013.

## **Departmental Intersession Field Excursion Program for Geology Majors, SUNY Geneseo (organizer)**

Arizona: Spring 1991

Hawaii: 1995

California-Nevada: 1997

New Zealand: 2001

New Zealand: 2009

Death Valley and Adjacent areas, 2011

### **Miscellaneous Activities:**

Elected **Board of Directors, Rochester Committee for Scientific Information**, Spring 1990-present

Elected **Vice President for Science**, Rochester Committee for Scientific Information, 1991-present

Voluntary (pro bono) consultant: Geologic issues for governmental, local community and citizen groups and individuals.