

# Patrick E. McGovern

Scientific Director, Biomolecular Archaeology Project  
for Cuisine, Fermented Beverages, and Health  
Adjunct Professor, Anthropology

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## OVERVIEW

- ▶ Academic and professional career has uniquely bridged the physical sciences, archaeology, and the humanities
- ▶ Pioneered rapidly developing, interdisciplinary field of biomolecular archaeology. This field is at the technological cutting-edge of modern archaeology--bridging the sciences and humanities--as best illustrated by ancient wine and food cultures
- ▶ Developed innovative academic program in the archaeological sciences
- ▶ Seminal studies on the earliest chemical evidence of grape wine (ca. 6000 B.C.), barley beer, and Royal Purple
- ▶ Re-creation of the "King Midas" funerary feast, the first time that a historic meal has been reconstructed from the chemical analysis of ancient organic residues
- ▶ On-going studies on grape and yeast DNA, prehistoric Chinese fermented beverages (rice, millet, honey, and fruit-based), ancient medicines and anti-cancer effects, New World chocolate, Old World almond, and early wine, ranging from Neolithic villages in the Taurus and Caucasus Mountains to Iron Age shipwrecks in the eastern Mediterranean Sea
- ▶ Directed major excavations in Jordan, and collaborated on projects throughout Europe, the Middle East, and Asia

## ACADEMIC BACKGROUND

- ▶ 1980, Ph.D. University of Pennsylvania, Asian and Middle Eastern Studies:  
▶ Near Eastern archaeology and languages
- ▶ 1977 Hebrew University, Jerusalem: archaeology
- ▶ 1967 University of Rochester: neurochemistry
- ▶ 1966, A.B. Cornell University: chemistry (major), English literature (minor)

## ACADEMIC POSITIONS

- ▶ 2013-present Scientific Director, Biomolecular Archaeology Project for Cuisine, Fermented Beverages, and Health
- ▶ 2011 Visiting Professor, Anthropology Dept., University of Victoria, British Columbia

- ▶ 2009-2013 Scientific Director, Biomolecular Archaeology Laboratory for Cuisine, Fermented Beverages, and Health
- ▶ 1997 Senior Research Scientist, MASCA, Univ. of Pennsylvania Museum, Head of Molecular Archaeology Laboratory
- ▶ 1997 Adjunct Associate Professor, Anthropology, Univ. of Pennsylvania
- ▶ 1995 Visiting Scholar, University of Copenhagen
- ▶ 1992 Lecturer, Rutgers University, Anthropology and History
- ▶ 1991 Visiting Scholar, University of Uppsala, Sweden
- ▶ 1982 Adjunct Assistant Professor, Dropsie University, Philadelphia
- ▶ 1981 Director, Baq`ah Valley (Jordan) Project: Research Associate, Near East
- ▶ 1979 Research Specialist, MASCA, Univ. of Pennsylvania Museum

### **SELECTED BOOKS AND ARTICLES**

(see <http://www.penn.museum/sites/biomoleculararchaeology/>  
(10 books and over 130 articles))

- ▶ 2013 The Beginning of Viniculture in France. *The Proceedings of the National Academy of Sciences USA* 110:25: 10147–10152.
- ▶ 2010 Anticancer activity of botanical compounds in ancient fermented beverages (Review). *International Journal of Oncology* 37: 5-14
- ▶ 2009 *Uncorking the Past: The Human Quest for Alcoholic Beverages*. Berkeley: University of California.
- ▶ 2009 Ancient Egyptian Herbal Wines. *The Proceedings of the National Academy of Sciences* 106:18:7361-7366.
- ▶ 2007 Chemical and Archaeological Evidence for the Earliest Cacao Beverages. Cover article of *The Proceedings of the National Academy of Sciences USA* 104.48: 18937-40.
- ▶ 2006 *Ancient Wine: The Scientific Search for the Origins of Viniculture*. Princeton University: see <http://pup.princeton.edu/titles/7591.html/>
- ▶ 2003 Evidence for *S. cerevisiae* Fermentation in Ancient Wine. *Journal of Molecular Evolution* 57: S226-232.
- ▶ 2000 *The Foreign Relations of the "Hyksos."* Oxford: Archaeopress.
- ▶ 1999 A Funerary Feast Fit for King Midas. *Nature* 402 (Dec. 23): 863-64
- ▶ 1997 The Beginnings of Winemaking and Viniculture in the Ancient Near East and Egypt. *Expedition* 39/1: 3-21
- ▶ 1996 Neolithic Resinated Wine. *Nature* 381 (June 6): 480-81.
- ▶ 1995 *The Origins and Ancient History of Wine* (first editor). Gordon and Breach
- ▶ 1995 Science in Archaeology. *American Journal of Archaeology* 99: 79-142
- ▶ 1992 Chemical Evidence for Ancient Beer. *Nature* 360: 24
- ▶ 1990 Royal Purple Dye. *Accounts of Chemical Research* 23: 152-58

### **SELECTED HONORS AND GRANTS**

- ▶ 2011 Felicia A. Holton Book Award, *Uncorking the Past*, Archaeological

- ▶ Institute of America
- ▶ 2007 Abramson Cancer Center, University of Pennsylvania, “Digging for Drug Discovery
- ▶ 2004 Grand-Prix in Histoire, Littérature et Beaux-arts, Organisation Internationale de la Vigne et du Vin
- ▶ 1998 Kaplan Fund “New Technologies” grant for “King Midas funerary feast”
- ▶ 1997 European Union grant: Ancient Greek food and beverage research
- ▶ 1993 Fulbright Fellowship, archaeological chemistry, University of Stockholm
- ▶ 1989 American Philosophical Society grant for Purple study in France
- ▶ 1982 National Endowment for the Humanities, Beth Shan (Israel) project
- ▶ 1978 Multi-year National Geographic Society grants for excavations in Jordan

### **SELECTED KEYNOTE ADDRESSES**

Numerous keynote addresses around the world between 2004 and the present (see full C.V.).

- ▶ 2003 “Food as Power” symposium, COPIA, Napa, CA
- ▶ 2002 6<sup>th</sup> Ancient DNA and Biomolecule conference, Tel-Aviv, Israel
- ▶ 2002 “Bacchus to the Future” symposium, Cool Climate Oenology/Viticulture Institute, Niagara
- ▶ 2002 American Chemical Society annual meeting, Orlando, FL
- ▶ 2001 Monell Chemical Senses Center, Philadelphia, PA
- ▶ 2001 M. J. Murdock Charitable Trust, Gonzaga University, Spokane, WA
- ▶ 2000-3 Re-creations of “King Midas” feast: Univ. of Pennsylvania, Monell Chemical Senses Center, COPIA, American Philosophical Center, Ritz-Carlton Hotel (Washington D.C.), and at the tomb in Gordion (Turkey)
- ▶ 1998 “Technological Innovation and Artistic Achievement,” 7<sup>th</sup> International Congress on the History and Archaeology of Jordan, Copenhagen
- ▶ 1997 “Wine: Ancient and Modern,” University of Pennsylvania Alumni Association and Robert Mondavi Winery, 7 venues on West Coast

### **CONFERENCES ORGANIZED**

- ▶ 1991 “Origins and Ancient History of Wine,” Robert Mondavi Winery, Napa Valley, CA
- ▶ 1987 “Cross-Craft and Cross-Cultural Interactions in Ceramics,” American Ceramic Society, Cincinnati, OH
- ▶ 1982 “Archaeology of Jordan,” University of Pennsylvania Museum

### **MISCELLANEA**

- ▶ Served on editorial, advisory, and award committees for the American Schools of Oriental Research, COPIA, and Archaeological Institute of America (Pomerance Science Medal)
- ▶ Trustee of the American Center for Oriental Research, Jordan, 1991-1997
- ▶ Industry connections, including the Du Pont Co., Rohm and Haas, Dupont-Merck Pharmaceutical Co., Nicolet Co., and Hewlett-Packard, which equipped and upgraded Molecular Archaeology Laboratory

- ▶ Reviews grant proposals for NEH, NSF, American Philosophical Society, and other funding agencies here and abroad
- ▶ Carried out projects and collaborates with scholars in more than 30 countries
- ▶ Received numerous international grants and support from U.S. funding agencies, private foundations (e.g., Wine Institute), wineries, and individuals
- ▶ 15 international stories on ancient food, wine, dye and archaeological discoveries, which received world-wide media coverage
- ▶ Mounted exhibit on “King Midas” funerary feast, 2000
- ▶ 8 feature films on ancient wine, beer, “King Midas” funerary feast, etc. 2001-present

Integration of biomolecular archaeology and ancient cuisine, culture, and technology is exemplified by the award-winning wine site:

<http://www.penn.museum/sites/wine/wineintro.html>

### RESEARCH PROFILES

- 2010: *The Pennsylvania Gazette*, cover story, Jan./Feb. 34-41, "Man, The Drinker," by Trey Popp, <http://online.qmags.com/PG0110/Default.aspx#pg37>
- Dec. 24, 2009, *Der Spiegel*, “Alcohol's Neolithic Origins: Brewing Up a Civilization,” <http://www.spiegel.de/international/zeitgeist/0,1518,668642,00.html>
- 2007: Before Dionysus [memorable wine], *The World of Fine Wine*, issue 18: 74-77, by Blake Edgar.
- Feb. 9, 2006, pp. 9-11: *Daily Pennsylvanian*, “Brewing the Past,” 34<sup>th</sup> St. feature, by S. Morse
- Nov. 2005, vol. 26 (11): 54-59: *Discover*, “Stone Age Beer,” by Larry Gallagher
- Feb. 2005: *TIME Express Monthly* (Taiwan), “Ch. Jiahu, with Hawthorn Accents”
- Feb. 2004: *TIME Asia*, “The First Vintage”
- 2005: *Populär Historia* (Sweden)
- 2004: *National Geographic News* on-line, “First Wine?: Archaeologist Traces Drink to Stone Age,” by William Cocke
- Aug. 15, 2003: *Chronicles of Higher Education* 49:49: A16-A17, "Château Néolithique: Whence Wine?," by Richard Monastersky
- Sept. 6, 2003: *New Scientist* 179.2411: 49, "The Word: Chinese Retsina"
- Nov. 2003: Penn in Practice: ancient wine research highlighted on Univ. of Pennsylvania main webpage
- Nov. 7, 2003: *Times Higher Education Supplement*, no. 1614: 18-19: "Vintage Brews Get the Midas Touch," as part of molecular science article.
- Nov. 24, 2003: *Time* 162.21: 60-61, "The First Vintage," by Madeleine Nash
- April 30, 2002, vol. 27(1): 133-35: *Wine Spectator*, “Modern Science, Ancient Wines,” by Lynn Alley

Born 12/9/44

Home at 209 Dogwood Rd., Media, PA 19063

Married

### **Other Archaeological and Scientific Fieldwork**

- Pottery and stratigraphic consultant, Scandinavian Expedition to Jordan/Tell el-Fukhar, Universities of Uppsala and Copenhagen, 1990-93
- Purple molluscan extract collection, Banyuls-sur-Mer marine laboratory (France), 1989
- Pottery consultant, Austrian Archaeological Institute excavations at Tell el-Dab`a/Avaris (Egypt), 1988, 1990
- Pottery consultant, Missione Archeologica Italiana a Ebla/Tell Mardikh (Syria), 1992-93
- Pottery supervisor, University of Pennsylvania Museum to Sarepta (Lebanon), 1974
- Field supervisor, Southern Wall excavations, Jerusalem, 1972

### **Other Honors and Grants**

- Ancient chocolate study, Tabasco (Mexico), NEH grant, 2012
- Donation of infrared spectrometer by the Hershey Co., 2011
- NSF dissertation improvement fellowship, 2009
- Harvard University, Ashkelon Project, 2008
- Tax and Trade Commission laboratory, Beltsville, MD: collaboration on ancient Egyptian beverage analysis using LC-MS-MS, 2006 -present
- Winterthur Museum, conservation: collaboration on GC-MS analyses, 2005-present
- Education Award, American-Turkish Council, 2003
- Donation of infrared spectrometer, Dupont Co., 2003
- Co-investigator on NSF grant for ancient Chinese fermented beverage project, 2000-2002
- Henry Luce Foundation, ancient Chinese fermented beverage project, 1999
- Liquid Chromatograph grant, Rohm and Haas Corp.
- Private donations for DNA/Ancient Wine project, 1998-present
- Harvard University grants for Ashkelon (Israel) neutron activation analysis (NAA) and organic studies, 1997-98, 2000-2002
- German Archaeological Institute (Berlin), 1996-98
- Swedish Archaeological Authority, 1996
- Pennsylvania Historical Commission, State Museum of Pennsylvania, 1996
- Computer upgrade, Nicolet Instrument Corp., 1995
- Donation of liquid chromatograph, Dupont-Merck Pharmaceutical Co., 1994
- Italian Research Council and Ebla expedition, 1994-97
- Matson Fund: "Science in Archaeology," *American Journal of Archaeology*, 1993-94
- Cobb Archaeological Institute grants for Lahav (Israel) organic study, 1993-97
- German Archaeological Institute in Cairo grants for Abydos (Egypt) NAA and organic studies, 1993-97
- Donation of infrared spectrometer, Dupont Co., 1993
- Metropolitan Museum of Art research grants, 1992-96
- Danish Palestine Exploration Fund research grants, 1992-96
- Scandinavian Foundation research grants, 1990-92

- NSF support grants for (NAA), 1991-present
- Robert Mondavi Winery research grant, 1990
- Austrian Archaeological Institute research grants, 1988-97
- University of Mississippi publication grant for Beth Shan, 1988
- Co-investigator on National Endowment for the Humanities grants, 1985-97
- University of Pennsylvania Museum grants and four University Research Foundation awards, 1980-present
- Annenberg Foundation grant, 1982
- Human skeletal bone shipment, Smithsonian Institution
- Jerome Levy Fund grant, 1981
- Jordan Department of Antiquities and Tourism grants, 1977-81, 1987
- William Penn Foundation fellowship, 1978-79
- Kyle-Kelso Foundation grant, 1977-78
- W. F. Albright traveling fellowship, American Schools of Oriental Research, 1976-1977
- University of Pennsylvania-Hebrew University exchange fellowship, 1976-77
- Ford Foundation grant, 1974

### Other Lectures and Presentations

- Austria:** University of Vienna
- China:** University of Science and Technology in China (Hefei, Anhui), International Alcoholic Beverage Culture and Technology Symposium (Xian), University of Shandong, and International Symposium on Ancient Ceramics (Shanghai).
- Denmark:** Copenhagen
- England:** British Museum, Institute of Archaeology (London), Palestine Exploration Fund (London), and University of Bradford.
- France:** Lyon
- Germany:** Archaeological Institute (Berlin) and Tübingen.
- Greece:** University of Crete and Museum of Herakleion.
- Israel:** Ben-Gurion University of the Negev, Haifa University, and Hebrew University.
- Jordan:** Amman and University of Yarmou (Irbid).
- Norway:** University of Oslo
- Spain:** Autonomous University of Madrid
- Sweden:** Chalmers Technical University (Gothenburg), Mediterranean Museum (Stockholm), University of Lund, and University of Uppsala.
- Switzerland:** Higher Specialized College of Western Switzerland (Centre horticole de Lullier, Geneva)
- United States:** Annual meetings of American Ceramic Society, American Ceramic Society, American Chemical Society, American Schools of Oriental Research, and Archaeological Institute of America; American Research Institute in Turkey; NEH Summer Institute; Archaeological Congress; Book and the Cook (Philadelphia), including Wines, Waters, and Beers of the World, and Historically Drinking: Beers Past and Present; Delaware County Institute of Science; Hartwick College; Johns

Hopkins University Master Brewers Association of America; New York Aegean Bronze Age Colloquium; New York University (Institute of Fine Arts); Ohio Wesleyan University; Spectroscopy Forum of Delaware Valley; Synagogues of Delaware County; University of California at Berkeley (International Group for the Study of Egyptian Pottery); University of Delaware; University of Maryland-Baltimore; Vendemmia (Philadelphia); Wesleyan Seminary; and Yale University.

### Selected Media Coverage

(including feature stories, syndicated services, internet, radio, and TV)

- Austria:** Blue Danube Radio
- Canada:** “Chronicle” (PBS), *Discovery*, Discovery Channel Canada, and Toronto Star.
- England:** BBC Live 5, Daily Telegraph, *Focus*, The Guardian, The Independent, Channel 4 “King Midas’ Feast” program, Manchester Guardian, *New Scientist*, The Observer, Times of London, Three BM “Midas Revealed” (Discovery Network), and “Tomorrow’s World” (British Broadcasting Service).
- Denmark:** *Illustreret Videnskab*
- Europe:** *The European* and Features Photo Library.
- France:** French wire service, Info Science, Le Monde, and *Science et Vie*.
- Germany:** Axel-Springer Publishing, *Focus*, *GEO Explorer*, and *Der Stern*.
- Greece:** major Athens newspapers (including special Kathēmerinē Sunday insert), Cretan Television, and *Greece in Print*.
- Italy:** *Avvenire* and *Famiglia Cristiana*.
- Japan:** Asahi Shimbun and Kyodo News Service.
- Jordan:** Jordan Television and Jordan Times.
- South America:** Features Photo Library and *Terra Sancta* (Brazil).
- Spain:** El Mundo, El Nuevo día Interactivo, ESE News, La Vanguardia, and *Nature of Labor*.
- Sweden:** Elusterets Videnscab and Svenska Dagbladet.
- Turkey:** *Arkeoloji ve Senat* and Turkish Times.
- USA:** ABC.com, American Cable Network, *Archaeology*, *Biophotonics*, *Bon Appétit*, “Chef’s Table” (PBS), *Chemical and Engineering News*, *ChemMatters*, *Chronicle of Higher Education*, *Cuizine*, *Curiosities: Nontrivial Questions in Science*, *Discover*, Discovery.com, Environment Show (PBS), *Food Arts*, History Channel “A Brief History of Wine,” KYW Newsradio, LA Times, MSNBC.com, *National Geographic*, New York Times, New York Times-National Geographic Channel “King Midas Funerary Feast” program, “Morning Edition” (PBS), Newsday (Long Island), “Off the Cuff” (WSNJ), *Pennsylvania Gazette*, *People’s Magazine*, Philadelphia Inquirer and Daily News, *Reader’s Digest*, San Francisco Chronicle, “Science Editor” (CBS), *Science News*, Science Update (PBS), *The Sciences*, *Scientific American Discovering Archaeology*, Time, “Timeout for Fine Wines” (WFLN), “Today Show” (NBC), “Don Pollec’s World” (Philadelphia TV6), USA Today, US News and World Report, *Viva*, Washington Post, *What’s Happening in Chemistry*, *Wine*

*Spectator*, and Yahoo! News.

**World:**

Associated Press International, International Herald Tribune, BBC World Service ("BBC Science," "The World Today," and programs throughout Australia, the Middle East, Central Asia, etc.), CNN, CNN.com, Reuters, and Voice of America.