



# Joseph Barabe

## BIOGRAPHY

Research microscopist specializing in the materials analysis of art, historical objects, and documents, both ancient and modern, scientific photographer specializing in invisible radiation imaging and photomacro- and -micrography, Hooke College faculty, pigment ID, print process ID, photomicrography. Best known projects: Ink analysis on the Gospel of Judas for National Geographic, the analysis of the Archaic Mark forgery for the University of Chicago, and the photomacrography of the Zapruder film of the assassination of President John F. Kennedy at the National Archives. Formerly at McCrone Associates, I consult at Barabe & Associates LLC.

## RESEARCH INTERESTS

Analysis of pigments on ancient artifacts, polarized light microscopy, scientific imaging, printing processes, materials analysis of art, documents and historical objects, Raman spectroscopy, scanning electron microscopy, infrared spectroscopy, near infrared imaging, ultraviolet fluorescence imaging.

## ***CURRICULUM VITAE***

### **JOSEPH G. BARABE**

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### **PROFESSIONAL EXPERIENCE**

Senior Research Microscopist and Principle, Barabe & Associates LLC, Oak Park, IL, August 2014 – present.

Art and historical objects and documents materials analysis for conservation and authentication studies.

Instructor, the Hooke College of Applied Sciences, of classes in art materials identification and characterization, use of the light microscope for forensic document examiners, printing process identification, and scientific imaging.

Conventional and scientific photography including photomicrography, photomacrography using visible light, ultraviolet and infrared radiation.

Senior Research Microscopist, Director of Scientific Imaging, McCrone Associates, Inc., Westmont, IL, 1989 – July 2014.

Microscopical and materials analysis of art materials, historical objects and historical documents using polarized light microscopy and scanning electron microscopy with energy dispersive X-ray spectroscopy; requested and integrated a wide range of related analytical modalities such as infrared and Raman spectroscopy, X-ray diffraction, carbon dating, dendrochronology, thermoluminescence, and more. Scientific photography, including visible light and infrared and ultraviolet radiation, photomacrography and photomicrography, forensic photographic documentation, and corporate photography including staff portraiture, public relations and event photography. Graphic arts.

Instructor, the Hooke College of Applied Sciences, of classes in art materials identification and characterization, use of the light microscope for forensic document examiners, printing process identification and photomicrography.

Scientific photography including photomicrography, photomacrography and scanning photomacrography using visible light, ultraviolet and infrared radiation. Forensic photography of evidence in studio and on location including hairs, bullets, document examination, art object examination, patent infringement, etc.

Senior Scientific Photographer, University of Chicago, Department of Audio-Visual Services, Chicago, Illinois, 1982-1989.

Medical photography including pre- and post-operative, clinical, surgical photography, photomicrography, photomacrography, scanning photomacrography, infrared and ultraviolet imaging. Photographic illustration for posters, brochures, various marketing publications and presentations. Executive and senior portraiture.

Scientific Photographer II, University of Illinois Medical Center, Department of Otolaryngology, Chicago, Illinois, 1980-1982.

Medical photography including clinical, surgical and photomacrography.

## **EDUCATION**

B. A., Michigan State University, East Lansing, Michigan, 1967.

Workshop in Care and Identification of Photographs, Gawain Weaver, instructor, The Newberry Library, Chicago, IL, May 12 – 15, 2014

Workshop in Spindle Stage Methods, July 2003, under Dr. F. Donald Bloss.

Workshop in Optical Crystallography (Mineral Identification), under Dan H. Kile, Hooke College of Applied Sciences, July 2014.

Triton College, independent study: An Introduction to Mineralogy, under Professor Bill Mikuska, Fall 2002.

Triton College, independent study: Analytical Approaches to the Identification of Organic Artists' Pigments, under Professor Bill Mikuska, Fall 2000.

Triton College, Analytical Chemistry, under Professor Bill Mikuska, Spring

2000. Workshop in Fusion Methods in Microscopy, July 2000, Dr. Walter C.

McCrone.

Apprenticeship in Art Authentication Analysis with Dr. Walter C. McCrone of the McCrone Research Institute, October 1998 to 2002. Areas of study included pigment, medium and support identification, materials and artifacts dating techniques.

Courses in Polarized Light Microscopy and Photomicrography, McCrone Research Institute, Chicago, Illinois, 1989.

Forensic Examination of Behavioral Artifacts: Handwriting Examination, with Dr. Brian Found, El Paso, Texas, September 1996.

Many other workshops and seminars in scientific, medical and general photography, microscopy and forensic document examination.

## **PROFESSIONAL ASSOCIATIONS**

American Institute for Conservation of Historical and Artistic Works  
Chicago Area Conservation Group  
State Microscopical Society of Illinois, President 1993-  
1994 Association of Forensic Document Examiners  
American Research Center in Egypt (Chicago Chapter Vice  
President) Illinois-Wisconsin Chapter of Biological Photographic  
Association, President  
1987-1988

## **Publications**

Kuniej-Berry, Cynthia, and Barabe, Joseph, "Matrat Boatyard, Moret-sur-Loing, Signed "Sisley": An Investigation in Materials, Style and Provenance", Poster for The Authentication in Art Congress in The Hague, Netherlands, June 2018. On line at <https://authenticationinart.org/pdf/posters/sisley-poster-pub.pdf>

Barabe, Joseph G., "Discriminating Palettes: The Painting Materials of Clementine Hunter and Her Imitator" Chapter in *Divine Disorder, Conserving the Chaos: Conference on the Conservation of Folk and Outsider Art* Post Print (in publication)

Barabe, Joseph G.; Quandt, Abigail; Mitchell, Margaret, "Analysis of the Archaic Mark Codex: A Collaborative Study in Authentication" in *Collaborative Endeavors in the Chemical Analysis of Art and Cultural Heritage Materials*, ACS Books, Editors Patricia L. Lang and Ruth Ann Armitage (2012)

Mitchell, Margaret M., Ph.D., Barabe, Joseph G., Quandt, Abigail B. "Chicago's "Archaic Mark" (ms2427) II: Microscopic, Chemical and Codicological Analyses Confirm Modern Production," *Novum Testamentum* 52 (2010) pp. 101-133

Barabe, Joseph G., "Printing Process Identification: A Microscopical Atlas," *Journal of Forensic Document Examination*, Vol. 20 (2010), pp. 5 – 38

Fisher, M. Patricia, Barabe, Joseph G., and Rantanen, Walter, "RARE 1972 Marilyn Monroe Oyama Photo Book," *Journal of Forensic Document Examination*, Vol. 18 (2007), pp. 41 – 62

"Analysis of Writing Materials in Middle Persian Documents," G. Azarpay, J.G. Barabe, K.A. Martin, and A.S. Teetsov, *Bulletin of the Asia Institute*, 16, p. 181 (2007).

"Examination of the Gospel of Judas Using an Integrated Approach to Ink Characterization," Joseph G. Barabe, Kathleen A. Martin, Elaine F. Schumacher, Joseph R. Swider, and Anna S. Teetsov, *Microscopy Today*, July 2006.

"Investigation of Interior Decoration on 1888 Railroad Coach," *Microscope*, Vol. 51:1, pp. 13-20(2003), with first author Glenn Guerra, Guerra Museum Service, Inc.

"Raman Spectroscopy of Watercolor Pigments," *Microscope*, Vol. 49:3, pp. 159-170, 2001, with first author Kenneth J. Smith, Ph.D., Senior Research Chemist at McCrone Associates, Inc.

"A Microscopical Approach to Ballpoint Pen/Pencil Writing Sequence Determination," *MicroNotes 2000*, Vol. II, No. 2, August 1998.

Barabe, J.G., Niemeyer, W.D., and Willard, V., "Light and Electron Microscopy Approaches to Sequence of Writing Problems," *The Journal of Forensic Document Examination*, Volume 9, Fall 1996.

"Using the Photomicrography Record Form," *MicroNotes 2000*, Vol. 1, No. 1, July 1996.

"Photographic Techniques for Document Examination," *The Journal of Forensic Document Examination*, Volume 7, December 1994.

## **Book Reviews**

Barabe, Joseph G., "A Review of *The Digital Print: Identification and Preservation* by Martin Jürgens, 2009, The Getty Conservation Institute, Los Angeles, CA and the *Contemporary Photography: Digital Prints Sample Set*", *Journal of Forensic Document Examination*, Vol. 23 (2013), pp. 63 – 71

Joseph G. Barabe, M. Patricia Fisher, John Gorajczyk, John Hsueh, Bonnie Schwid, Steven A. Slyter, Andrew Sulner, Lynne Variano, Emily J. Will, Vickie L. Willard, Robin Williams, "Revisited: *Scientific Examination of Questioned Documents, 2<sup>nd</sup> Edition*," by Kelly, J.S., Lindblom, B.S. (Editors), 2006, CRC Press, Boca Raton, FL, *Journal of Forensic Document Examination*, Vol. 21 (2011), pp. 61 – 81

## **Workshops Taught**

“Photomicrography”, a three-day workshop in photography through the microscope, photomacrography and scientific imaging, March 2019.

“Microscopical Approaches to Pigment Identification,” a one-week workshop at the Heritage Conservation Centre, Singapore, for Hooke College of Applied Sciences, Westmont, Illinois, November 2018. This workshop was first taught in 2005, and has continued to be taught on a regular basis since then.

Barabe, Joseph G., Instructor, with Holcomb, Allison, Assistant Instructor, “Printing Process Identification for Forensic Document Examiners,” for Hooke College of Applied Sciences, Westmont, IL. One day workshop in traditional and digital printing processes. October 2013.

“Fundamentals of Microscopy for Forensic Document Examiners,” a one-day workshop at The College of Microscopy, Westmont, Illinois, August 2005.

“Pigment Identification Techniques for the Art & Architectural Conservator,” a one-week workshop at the Campbell Center for Historic Preservation Studies, Mt. Carroll, Illinois, September 2003.

“Photomicrography for BioCommunication Professionals,” Workshop for Annual Meeting of Biological Communications Association, Reno, Nevada, July 1997.

“Scanning Photomacrography,” workshop conducted at BioCommunications Chicago Forum, Chicago, Illinois, October 1990.

## **Presentations**

Barabe, Joseph G., “Assessing the Gospel Truth: New Tools for Ancient Artifact Analysis,” for the American Research Center in Egypt (ARCE) Chicago Chapter, March 2019.

Barabe, Joseph G., “Artists’ Materials Reference Collections: How to Create & Use Them; Why They’re Essential for Analysis,” for the Book and Paper Panel Discussion at the American Institute for Conservation Annual Conference, Uncasville CT, May 2019

Barabe, Joseph G., “Possible Roles of the Forensic Document Examiner in Art Authentication Studies,” AFDE Annual Symposium, Savannah GA, October 2018

Barabe, Joseph G., “Mastering Printing Process Identification: A Practical Approach,” AFDE Annual Symposium, October 2017 (in absentia).

Barabe, Joseph G., and Borroughs, David, “Case Study: Analysis of a Forged Provenance Document for a Collectable Car”, at InterMicro 2015, Chicago, July 2015, and at the AFDE Annual Symposium, San Antonio, TX, October 2015.

Barabe, Joseph G.; Martin, Kathleen A.; Schumacher, Elaine F.; Swider, Joseph R.; and Teetsov, AnnaS.; "Examination of the Ink on the Gospel of Judas Using an Integrated Approach to Ink Characterization," the American Research Center in Egypt (ARCE) Chicago Chapter, May 2013

Barabe, Joseph G.; Martin, Kathleen A.; Schumacher, Elaine F.; Swider, Joseph R.; and Teetsov, AnnaS.; "Examination of the Ink on the Gospel of Judas Using an Integrated Approach to Ink Characterization," the American Chemical Society, 12<sup>th</sup> Archaeological Chemistry Symposium, New Orleans, LA, April 2013.

Barabe, Joseph G.; Martin, Kathleen A.; Schumacher, Elaine F.; Swider, Joseph R.; and Teetsov, AnnaS.; "Examination of the Ink on the Gospel of Judas Using an Integrated Approach to Ink Characterization," the American Chemical Society, 12<sup>th</sup> Archaeological Chemistry Symposium, New Orleans, LA, April 2013

Barabe, Joseph G., "Discriminating Palettes: The Painting Materials of Clementine \_\_\_\_\_ Hunter and Her Imitator" American Institute for Conservation of Historic and Artistic Works Annual Meeting, Albuquerque, NM May 2012

Zyats, Paula; Hodgins, Gregory W. L.; Barabe, Joseph G.; "The Mysterious 'Voynich Manuscript': Collaboration Yields New Insights, American Institute for Conservation of Historic and Artistic Works Annual Meeting, Albuquerque, NM May 2012

Barabe, Joseph G., "Discriminating Palettes: The Painting Materials of Clementine \_\_\_\_\_ Hunter and Her Imitator" *Divine Disorder, Conserving the Chaos: Conference on the Conservation of Folk and Outsider Art*, February 15 – 16, 2012

Barabe, Joseph G., "Authentication Studies of Art and Historical Objects: The McCrone Approach",  
Lecture for the Art Crimes Team of the FBI, Westmont, IL (November 2011)

Barabe, Joseph G., "Clementine Hunter: A Study in Authenticity", Annual Symposium of the Association of Forensic Document Examiners, Louisville, KY (October 2011)

Barabe, Joseph G., "Oath of a Freedman: First American Printing or Modern Fake?", Annual Symposium of the Association of Forensic Document Examiners, Louisville, KY (October 2011)

Barabe, Joseph G., Quandt, Abigail B., Mitchell, Margaret M., Ph.D., "The Archaic Mark Codex: A Collaborative Study in Authentication", American Chemical Society, Indianapolis, IN (June 2011)

Barabe, Joseph G., Quandt, Abigail B., Mitchell, Margaret M. Ph.D., "A Microscopical, Chemical, Codicological and Textual Analysis of the Archaic Mark: 14<sup>th</sup> Century Manuscript of Modern Forgery?", Annual Symposium of the Association of Forensic Document Examiners, Phoenix, AZ (October 2010)

Barabe, Joseph G., "Some Resources for Print Process Identification", Annual Symposium of the Association of Forensic Document Examiners, Milwaukee, WI (November 2009)

Barabe, Joseph G., "Page Sequence Determination in an Altered Will", Annual Symposium of the Association of Forensic Document Examiners, Milwaukee, WI (November 2009)

Barabe, Joseph G., Martin, Kathleen, Ph.D., Swider, Joseph R. Ph.D., "The Graphite Pencil: Historical Perspective and Analytical Approaches," Annual Symposium of the Association of Forensic Document Examiners, Albuquerque, NM (October 2008)

"Clues in the Cracks: Examination of an 18<sup>th</sup> Century South American St. Michael," with Carol A. Injerd, presented at the American Institute for Conservation Annual Conference, Denver, Colorado, April 2008.

"Authentication Studies of Art Objects, Documents and Archaeological Artifacts," Associated Colleges of Chicago, lecture for *ACCA/McCrone Chemical and Biological Microscopy Seminar*, April 2008.

"Photomicrography and Digital Imaging: An Introduction to Scientific Imaging for Biologists and Chemists," lecture for *ACCA/McCrone Chemical and Biological Microscopy Seminar*, February 2008.

"A Brief History of Ink," presented at the Association of Forensic Document Examiners Annual Symposium, Tucson, Arizona, September 2007.

"An Introduction to Print Process Identification for Forensic Document Examiners," presented at the National Association of Forensic Document Examiners (NADE) Annual Conference, Tucson, Arizona, May 2007.

"Examination of the Gospel of Judas Using an Integrated Approach to Ink Characterization," Joseph G. Barabe, Kathleen A. Martin, Elaine F. Schumacher, Joseph R. Swider, and Anna S. Teetsov, presented at the American Institute for Conservation Annual Conference, Richmond, Virginia, April 2007.

"Analysis of Writing Materials in Middle Persian Documents," J.G. Barabe, G. Azarpay, K.A. Martin, and A.S. Teetsov, Poster Presentation, Microscopy and Microanalysis Conference, Chicago, Illinois, July 2006.

"An Introduction to Photomicrography and Photomacrography for Forensic Photographers," Evidence Photographers' International Council, Atlanta, Georgia, November 2005.

"In the Footsteps of Nisaba: Investigations in Old and Ancient Documents," presented at the



Association of Forensic Document Examiners Annual Symposium, San Antonio, Texas, October 2005.

“Authentication of Paintings and Other Artistic and Historical Objects: The McCrone Approach,” lecture presented as part of the 2004 ACCA CHEMISTRY SEMINAR SERIES. “Selected Topics and Careers in Chemistry,” Benedictine University, Lisle, Illinois, November 2004.

“An Introduction to the Analysis of Gel Pen Inks,” with Heidi Harralson, Forensic Document Examiner, and Darlene Florence, Research Microscopist, presented at the Association of Forensic Document Examiners Annual Symposium, Rochester, New York, November 2004.

“An Introduction to Ink Analysis,” with Kenneth J. Smith, Ph.D., Senior Research Chemist, and Darlene Florence, Research Microscopist, presented at the Association of Forensic Document Examiners Annual Symposium, Scottsdale, Arizona, November 2003.

“The Characterization and Identification of Manganese Blue,” presented at Inter/Micro 2003, Chicago, Illinois.

“Focusing on White Pigments: Their Characterization and Identification,” with Carol A. Injerd, presented at Inter/Micro 2003, Chicago, Illinois.

“Artists’ Signatures on Works of Art: General Principles for Their Analysis, with Selected Case Studies,” with Nancy H. Cole, Forensic Document Examiner, presented at the Association of Forensic Document Examiners Annual Symposium, Las Vegas, Nevada, November 2002.

“Raman Spectroscopy in Art Authentication Studies,” presented at the American Institute for Conservation of Historical Artistic Works, June 2001, with second author Kenneth J. Smith, Ph.D., Senior Research Chemist at McCrone Associates, Inc., Postprint published in 2002

“Imaging Zapruder: Film Conservation Issues in a Digital Age,” Chicago Area Conservation Group, Chicago, Illinois, January 2001.

“Protocols for the Authentication of Paintings, presented at the State Microscopical Society of Illinois, Chicago, Illinois, December 2000.

“Alteration When It Alteration Finds: Microscopical Approaches to Altered Document Analysis with Case Studies,” presented at the Association of Forensic Document Examiners Annual Symposium, Milwaukee, Wisconsin, November 2000.

“Art Forgery Detection and Forensic Document Examination,” lectures for ACCA Forensic Chemistry Course, Morton Arboretum, Lisle, Illinois, September 2000.

“Imaging Zapruder’s JFK Assassination Film: A Hybrid Approach to Preservation and

Presentation,” presented at the American Institute for Conservation of Historical and Artistic Works, Dallas, Texas, June 2000, with Alan F. Lewis, Audiovisual Preservation Expert, National Archives and Records Administration, Motion Picture, Sound and Video Recordings Branch.

“Photomacrography of the Zapruder Film,” presented at Inter/Micro 2000, Chicago, Illinois.

“Revelations of Artful Deceit,” lectures on art forgery, given at the Illinois State Police Academy in Chicago, Illinois, on 16 February 2000 with Ms. Margo McFarland, Conservator, Works on Paper, the Art Institute of Chicago.

“Microscopical Identification of Manganese Blue,” presented at the State Microscopical Society of Illinois, Chicago, Illinois, December 1999.

“Authentication of Paintings and Other Works of Art: The McCrone Approach,” lecture given to the New York Regional Association for Conservation at the Institute of Fine Arts, NYC, September 1999.

“The Cobalt Blues, Greens and Violets: A Key to Their Identification,” presented at Inter/Micro 1999, Chicago, Illinois.

“Microscopic Characteristics of Ballpoint Pen/Pen and Pencil Sequences,” presented at Inter/Micro 1998, Chicago, Illinois.

“Practical Approaches to Photomicrography for Document Examiners,” presented at the Annual Symposium of the Association of Forensic Document Examiners, Milwaukee, Wisconsin, June 1998.

“Special Problems in Scientific Imaging,” presented at the monthly meeting of the Chicago SPIE/OSC Optical Group, Park Ridge, Illinois, May 1998.

“Special Problems in Writing Sequence Determination,” presented at the Annual Symposium of the Association of Forensic Document Examiners, El Paso, Texas, September 1996.

“Light and Electron Microscopy Approaches to Sequence of Writing Problems,” presented at the Annual Symposium of the Association of Forensic Document Examiners, London, Ontario, August 1995.

“Light and Electron Microscopy Approaches to Sequence of Writing Problems,” presented at Inter/Micro 1995, Chicago, Illinois.

“Photographic Techniques for Document Examination,” presented at the World Congress of BioCommunications, Orlando, Florida, August 1994.

“Photographic Techniques for Document Examination,” presented at Inter/Micro 1994, Chicago, Illinois.

“Photographic Techniques for Document Examination,” presented at the Symposium of Forensic Document Examiners, Las Vegas, Nevada, June 1994.

“Classical and Stereo Photomacrography,” presented at Inter/Micro 1992, Chicago, Illinois.

“Scientific Photography in an Analytical Setting,” presented at the national meeting of Biological Photographic Association, Tampa Bay, Florida, August 1990.

“Scientific Photography in an Analytical Setting,” presented at Inter/Micro 1990, Chicago, Illinois.

“Fluorescence Microscopy,” presented at the monthly meeting of the State Microscopical Society of Illinois, March 1988.

“An Introduction to Photomacrography,” presented at the regional meeting of the Biological Photographic Association, September 1987.