

Curriculum Vitae

of

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Educational History

- University of Illinois at Chicago, Bachelor of Science – Chemistry (ACS) with emphasis on analytical methods.
- McCrone Research Institute, Chicago. Courses in photomicrography, applied polarized light microscopy, identification of small particles, advanced crystallography and scanning electron microscopy.
- Courses in hair microscopy, species identification of paper fibers, paper fiber analysis, pollen identification, microscopy of soil minerals, cement microscopy, pharmacognosy, micro-techniques, wood identification, thin layer chromatography and vegetable fiber identification.

Employment

- Founder, President and Senior Research Microscopist, Microtrace (1992 – present)
- Senior Research Associate, McCrone Associates (1987 – 1992)
- Senior Research Microscopist, McCrone Associates (1979 – 1992)
 - Supervise light microscopy section. Application of polarized light microscopy and microchemical methods to the identification of single particles. Research in new methods to aid in the identification of microscopic particles of minerals, industrial dusts, combustion products, botanical fragments, hairs, fibers and crystals; application of these methods to forensic science, contamination control and airborne particulate studies. Court qualified expert (State, Federal and Foreign courts) in forensic microscopy and chemistry.
- Research Microscopist, McCrone Associates (1974 – 1979)
- Research Assistant, Department of Criminal Justice, University of Illinois at Chicago (1972 – 1974)
 - Analytical chemistry and microscopy applied to criminalistics.
- Research Assistant, Department of Chemistry, University of Illinois at Chicago (1970 – 1972)
 - Coordination compound chemistry and crystallography.
- Intelligence Analyst, United States Army Intelligence, Stuttgart, Federal Republic of Germany (1966 – 1969)

Professional Affiliations

- McCrone Research Institute, Chicago, Board of Directors
- American Chemical Society, Member
- American Academy of Forensic Sciences, Fellow
- American Society of Trace Evidence Examiners (ASTEE), Charter Member
- American Association of Textile Chemists and Colorists, Member
 - Appointed to the American Association of Textile Chemists and Colorists (AATCC) Research Committees on Fiber Analysis Methods and Spectroscopic Technologies (2014)

- California Association of Criminalistics, Member
- Canadian Society of Forensic Science, Member
- Chicago Society for Coatings Technology, Member
- International Association of Wood Anatomists, Member
- Midwestern Association of Forensic Scientists, Member
- State Microscopical Society of Illinois, Member, past President, past Curator
- Queckett Microscopical Club, United Kingdom, Member
- Royal Microscopical Society, United Kingdom, Fellow

Honors and Appointments

- Chemistry/Instrumental Analysis Scientific Area Committee's (SAC's) Materials (Trace) Subcommittee within the Organization of Scientific Area Committees (OSAC), appointed by Mark Stolorow of the National Institute of Standards (NIST) (2014-present)
- 2013 Recipient of the "Edmond Locard Award for Excellence in Trace Evidence" presented by the American Society of Trace Evidence Examiners
- 2012 Recipient of the "Ernst Abbe Memorial Award" presented by the New York Microscopical Society
- 2010 Recipient of the "Chamot" Award presented by the State Microscopical Society of Illinois
- 2009 Recipient of the "Paul L. Kirk" Award the highest honor bestowed by the Criminalistics Section of the American Academy of Forensic Sciences
- 2004 Distinguished Scientist Award, Midwestern Academy of Forensic Sciences
- Listed in American Men and Women in Science

Teaching Experience

- Instructor, McCrone Research Institute, Chicago (1975 – present). One to three week short courses in chemical microscopy, applied polarized light microscopy, microchemical analysis, crystallography, hairs, fibers, polymers, food contaminants, botanical fragments and pollens.
- Adjunct Lecturer, University of Illinois at Chicago, School of Pharmacy, Department of Pharmacokinetics (1989 – 1992)
- Adjunct Lecturer, University of Illinois at Chicago, Department of Criminal Justice (1986 – 1989). Quarter courses in Chemical Microscopy and Applied Analytical Chemistry.
- Instructor, Illinois Institute of Technology, Chicago (1975 – 1979). Semester courses in Chemical Microscopy.

Research Grants

Advanced research in Microspectrophotometry of Fibers: Analysis and Interpretation (National Institute of Justice, 2012-DN-BX-K040) – Role: Principal Investigator

Development of a Turnkey Analytical System for the Forensic Comparison and Identification of Fiber Dyes on Casework-sized Fibers (National Institute of Justice, 2012-DN-BX-K42) – Role: Co-Principal Investigator

Raman spectroscopy of automotive and architectural pigments: in situ identification and evidentiary Significance (National Institute of Justice, 2011-DN-BX-K557) – Role: Co-Principal Investigator

Fundamentals of Forensic Pigment Identification by Raman microspectroscopy: A practical identification guide and spectral library (National Institute of Justice, 2010-DN-BX-K236) – Role: Co-Principal Investigator

Publications and Teaching

Courses and Workshops Taught

- US Army Criminal Investigation Laboratory
 - Forensic Soil Examination
- Washington State Police
 - Advanced Topics in Trace Evidence Analysis (2 weeks)
- Royal Canadian Mounted Police (Canada)
 - Forensic Microscopy
- Pitcon Conference
 - Microscopy & Microanalysis
- Texas Department of Public Safety
 - Forensic Microscopy
 - Forensic Examination of Fibers
- State of North Carolina Crime Laboratory
 - Forensic Microscopy
- New York City Crime Laboratory
 - Special Techniques of Forensic Microscopy
- State of Louisiana Crime Laboratory
 - Forensic Fiber Microscopy
- State of Illinois Crime Laboratory
 - Vegetable Fibers
- California Criminalistics Institute
 - Identification of Animal Hair
 - Forensic Soil Microscopy
- Forensic Science Service (United Kingdom)

- Human Hair Comparison
- Linear Health Care
 - Introduction to Pharmacognosy
- State Microscopical Society of Illinois
 - General Microscopy, Forensic Paper Identification
- Forensic Science Foundation
 - Basic Forensic Microscopy
 - Forensic Microscopy of Soils
 - Forensic Microscopy of Botanical Materials
 - Forensic Analysis of Fibers
- United States Customs
 - Analytical Microscopy
 - Identification of Dog and Cat Hairs to Enforce New U.S. Regulations
- Royal Canadian Mounted Police
 - Forensic Fiber Microscopy
- Louisiana State Crime Laboratories
 - Forensic Hair Microscopy
- 3M Research Laboratories
 - Microchemical Analysis
- Campbell Center for Historic Conservation (Museum Conservators)
 - Identification of Plant Fibers of Ethno-botanical Interest
 - Microchemistry for Objects Conservators
- New York City Crime Laboratory
 - Forensic Paint Microscopy
- University of Milan - instructor
 - 1st International Heavy Mineral Analysis School
 - 2nd International Heavy Mineral Analysis School
- ENFSI (European Network of Forensic Science Institutes)
 - APST Forensic Soil and Dust Analysis Workshop

Publications (Select)

Ballou, S., Houck, M., Siegel, J.A., Crouse, C.A., Lentini, J.J., and Palenik, S. (2013) "Criminalistics: the bedrock of forensic science" in Forensic Science: Current Issues, Future Directions, Ubelaker, D.H. (ed.) Wiley-Blackwell.

Palenik, S.J. (2007) Heavy Minerals in Forensic Science, in Heavy Minerals in Use, ed. M. Mange: Elsevier.

Palenik, C.S. and Palenik, S.J. (2004) Forensic Science and Academic Science: Comment on Forensic Science: Oxymoron?. Science, 303, 1136.

Bartick, E.G. and Palenik, S.J. (2004) Forensic Analysis, in Encyclopedia of Polymer Science and Technology, John Wiley and Sons, DOI: 10.1002/0471440264.pst140

Palenik, C.S. and Palenik, S.J. (2004) Forensic Microscopy, in Encyclopedia of Analytical Sciences, 2nd Ed., eds. Worsfold, P., Townshend, A and Poole, C. Elsevier, NY.

Palenik, SJ, Dust. Encyclopedia of Forensic Science, Academic Press (2000).

Palenik, SJ, Microchemistry. Encyclopedia of Forensic Science, Academic Press (In Press).

Palenik, SJ, Microscopy. Encyclopedia of Forensic Science, Academic Press (2000).

Palenik, SJ, Wood Identification. Encyclopedia of Forensic Science, Academic Press (2000).

Palenik, SJ, Fiber Microscopy. In: Forensic Examination of Fibers, 2nd Ed., Grieve, M, Ed. John Wiley & Sons, 1999.

Palenik, SJ, Isolation and Identification of Paint Pigments by Sublimation. *Crime Laboratory Digest*, Vol. 23, 1, 1996.

Palenik, SJ and Fitzsimons, CA, Fiber Cross-Sections, Part I. *The Microscope*, Vol. 38, 187-195, 1990.

Palenik, SJ and Fitzsimons, CA, Fiber Cross-Sections, A New Method for Preparing Sections, Part II. *The Microscope*, Vol. 38, 313-320, 1990.

Palenik, SJ, Microscopy and Microchemistry of Physical Evidence. In: Forensic Science Handbook, Vol. 2, Richard Saferstein, Ed., Prentice Hall, 1988.

Palenik, SJ, Forensic Aspects of Polymer Analysis. Encyclopedia of Polymer Science and Engineering, 2nd ed., Vol. 7, John Wiley & Sons, 279-289, 1987.

Palenik, SJ, Light Microscopy of Medullary Micro-structures in Hair Identification, *The Microscope*, Vol. 30, 129-138, 1982.

Palenik, SJ, Microscopic Trace Evidence – The Overlooked Clue, Part I, Albert Schneider Looks at Some String. *The Microscope*, Vol. 30, 93-100 1982.

Palenik, SJ, Microscopic Trace Evidence – The Overlooked Clue, Part II, Max Frei – Sherlock Holmes with a Microscope. *The Microscope*, Vol. 30, 163-170, 1982.

Palenik, SJ, Microscopic Trace Evidence – The Overlooked Clue, Part III, E.O. Heinrich – “The Wizard of Berkeley”. Traps a Left-Handed Lumberjack. *The Microscope*, Vol. 30, 281-290, 1982.

Palenik, SJ, Microscopic Trace Evidence – The Overlooked Clue, Part IV, Arthur Koehler – Wood Detective. *The Microscope*, Vol. 31, 1-14, 1983.

Palenik, SJ and McCrone WC, The Solids We Breathe. *Industrial Research*, April 1977.

Palenik, SJ, Microscopy and the Law. *Industrial Research and Development*, March 1979.

Palenik, SJ, Microchemical Tests in Particle Identification. The Particle Atlas, Vol. 5, Ann Arbor Publishers, 1979.

Palenik, SJ, Microscopical Examination of Air Pollutants. The Particle Atlas, Vol. 5, Ann Arbor Publishers, 1979.

Palenik, SJ, The determination of Geographical Origin of Dust Samples. The Particle Atlas, Vol. 5, Ann Arbor Publishers, 1979.

Palenik, SJ and Delly, JG, Is it Jade? The Microscope in Art and Archaeology. *Industrial Research*, May 1976.

Abstracts and Talks (Selected)

Over 200 papers presented at professional meetings and seminars.

Palenik, C.S. and Palenik, S.J. (2015) Microtrace to Nanotrace: Extracting information at increasingly smaller length scales. American Academy of Forensic Sciences Annual Meeting, Orlando, FL.

Applications of Forensic Microanalytical Methods to the Identification and Sourcing of Particulate Matter in Pharmaceutical Products. Invited presentation at Microscopy & Microanalysis 2013 sponsored by the Microscopy Society of America, Indianapolis, IN.

Forensic Microscopy. Invited presentation at Cambridge University, England, June 2008.

Trace Evidence and the Law. Presentation during "Short Course for Prosecutors and Defense Attorneys" at Northwestern University, August, 2005.

Forensic Microscopy. Lawrence Livermore National Laboratory, April 14, 2004.

Microscopic Trace Evidence: The Overlooked Clue, Wesleyan University, Middleton, CT, February 25, 2004

Practical aspects of electron microscopy in the trace evidence laboratory, Forensic Microscopy- Spreading best practice, Royal Microscopical Society, Oxfordshire, England. June 20, 2003

Casework examples illustrating the integration of polarized light microscopy and scanning electron microscopy in the study of microscopic trace evidence, Scanning 2003, May 3, 2003

Forensic Soil Examination, Forensic Geoscience: Principles, Techniques and Applications, The Geological Society, Burlington House, London. March 3-4, 2003

Just say it ain't so, Joe: Analysis of Joe DiMaggio signed jerseys, Inter/Micro-02, Chicago, IL. June 24-29, 2002

Microscopy in the Pharmaceutical Industry, The Procter and Gamble Co., September, 2002.

Microscopy and Terrorism, State Microscopical Society of Illinois, May 11, 2002

Light and electron microscopy in soil investigation, Inter/Micro-01, Chicago, IL. June 25-28, 2001

Accessories and components for the microscopist, Inter/Micro-00, Chicago, IL. June 26-29, 2000

Contribution of chemical microscopy to trace evidence analysis, 219th Annual American Chemical Society Meeting - Division of Analytical Chemistry. March 26-30, 2000

Fundamental of forensic microscopy, Federation of Analytical Chemistry and Spectroscopy Societies, 2000

Splitting hairs: for fun and (intellectual) profit, Inter/Micro-99, Chicago, IL. June 28-July 1, 1999

Putting chemistry back into chemical microscopy, Inter/Micro-98, Chicago, IL. August 10-12, 1998

Let's take a dip - Lecture/demonstration on immersion microscopy, Inter/Micro-97, Chicago, IL. July 21-23, 1997

Compensators for all seasons - Lecture/demonstration on compensators, Inter/Micro-95, Chicago, IL. July 11-13, 1995

The forensic examination of particles recovered from surfaces, Microbeam Analysis Society, June 1-4, 1993

Methods for the Identification of Vegetable Fibers, Forensic Microscopy Session: Skip Palenik, Chairman. Inter/Micro-93, Chicago, IL, 1993.

Micro-FTIR Spectroscopy of Acrylic Fibers, American Academy of Forensic Sciences, 42nd Annual meeting, Cincinnati, OH, 1990.

Forensic Microscopy as an Investigative Tool, Crime Scene Investigation Seminar, California Association of Criminalists, Santa Ana, CA, 1988.

The Microscope – The Most Versatile Diagnostic and Analytical Tool in the Materials Sciences. Carl Zeiss Annual Dealer Symposium, Phoenix, AZ, 1988.

Evidential Value of Cotton Fibers. Trace Evidence Analysis: Skip Palenik, Chairman. Eastern Analytical Symposium, Silver Jubilee, New York City, NY, 1986.

Light Microscopy: Chemistry at the Picogram Level. Pharmaceutical Applications of Microscopy, American Pharmaceutical Association Meeting, Minneapolis, MN, 1985.

FTIR Spectroscopy Coupled with Microscopy – A New Tool for the Forensic Scientist. American Chemical Society Meeting, Miami, FL, 1985.

Advances in Solution of Crimes. Press Conference, American Chemical Society Meeting, Miami, FL, 1985.

Microscopical Techniques for the Examination of Soil in Criminal Cases. International Association of Forensic Sciences, Oxford, 1984.

Parmacognosy as a Tool for the Analytical Microscopist. Inter/Micro-84, Chicago, IL 1984.