Janet F. Morrison, Ph.D.

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Education

Post-Doctoral ***National Research Council Postdoctoral Research Associate,*** National Institute of Standards and Technology, Division of Analytical Chemistry, Gaithersburg, MD, 10/92 – 9/94. Research in the application of supercritical fluid extraction technology for the isolation of drugs of abuse from hair.

Ph.D. ***Analytical Chemistry***, December 1992
The American University, Washington, D.C.
Dissertation: "Supercritical Fluid Extraction of Free Fatty Acids from Silicious Solids"
Research Advisor: Dr. James E. Girard
Awards: *U.S. Office of Education National Needs Fellowship (1/90-8/92); Fred H. Nothman Award for Outstanding Research; Leo Schubert Prize for Outstanding Teaching Assistant*

M.S. ***Forensic Chemistry***, June 1985
Northeastern University, Boston, MA
Thesis: "Latent Fingerprint Detection Methods: A Comprehensive Review"
Awards: *Recipient of full-time teaching fellowship (9/83-5/85)*

B.S. ***Chemistry***, May 1983
Hartwick College, Oneonta, NY
Awards: *summa cum laude; Departmental Honors in Chemistry; John Christopher Hartwick Faculty Scholar; Hartwick College Honor Society; American Institute of Chemists Student Awardee; 1983 ACS Division of Analytical Chemistry Student Awardee*

Professional Experience

Current

7/2013 – present, ***Principal Lecturer***, **Department of Chemistry, Trinity College, Hartford, CT**
7/2002 – 6/2013, ***Senior Lecturer***, **Department of Chemistry, Trinity College, Hartford, CT**

- Teach undergraduate courses in the following areas: Introductory Chemistry I and II (lecture), Analytical Chemistry (lecture and laboratory), Introduction to Forensic Chemistry (lecture with integrated laboratory), Instrumental Methods of Chemical Analysis (lecture and laboratory)
- Serve as academic advisor to undergraduate students
- Conduct research in the area of analytical method development for clinical, environmental, and/or forensic toxicological applications.
- Direct the research of undergraduate students as their faculty research advisor
- Write grants to secure funding for undergraduate research students and departmental instrumentation
- Serve as faculty advisor to the Trinity Chemical Society
- Serve on a variety of faculty committees, including Chair of Faculty Jury Pool, Member of IDP Council, and Member of Faculty Advisory Committee on Student Accessibility
- Serve as faculty advisor to the Trinity College Women's Golf Team
- Serve as faculty mentor to Chicago Posse Scholars (Class of 2018)
- Participate in a variety of outreach and professional development activities

Previous

7/97 – 6/2002**,** ***Visiting Assistant Professor*****, Department of Chemistry, Trinity College, Hartford, CT**. Taught core courses in the chemistry major including Instrumental Methods of Chemical Analysis (lecture and laboratory), Analytical Chemisty (lecture and laboratory), and Introductory Chemistry I and II (lecture). Developed and implemented a new lecture and integrated laboratory general education course, Introduction to Forensic Chemistry. Conducted research with undergraduate students involving the development of supercritical fluid extraction (SFE) technology as an efficient, cost-effective, and environmentally "friendly" alternative to traditional solvent-based sample preparation methods in clinical and/or forensic toxicological applications. Participated in a variety of outreach and professional development activities.

10/2002 – 5/2004, ***Senior Consulting Scientist***, **DrugRisk Solutions, Schuylerville, NY.**
Direct research and development for a small start-up company involved in the development of diagnostic hair drug testing technology. Experimental design; supervision of laboratory technicians; data analysis and review; prototype design and development; patent submission

1/2001 – 2002, ***Adjunct Faculty*****, Greater Hartford Academy of Math and Science, Hartford, CT**.
Curriculum development; design and implementation of outreach and professional development programs; oversaw purchase and installation of instrumentation (HPLC, GC, uv-vis) for analytical chemistry laboratory; faculty training on analytical instrumentation; lectured in advanced chemistry electives.

10/94 - 6/97, ***Research Chemist,*** **National Institute of Standards and Technology, Gaithersburg, MD**.
Research in the areas of supercritical fluid extraction (SFE) for forensic and clinical toxicology applications; fundamental investigations of analyte-fluid-matrix interactions; real-time monitoring of supercritical fluid processes.

10/92 - 9/94, ***National Research Council Postdoctoral Research Associate,*** **National Institute of Standards and Technology, Gaithersburg, MD.** Research in the application of SFE for the isolation of drugs of abuse from hair.

6/90 - 6/92, ***USGS Volunteer for Science Program***, **U.S. Geological Survey National Center, Reston, VA**. Research in the areas of SFE of fatty acids from clays; SFE of chlorinated pollutants from estuarine sediments.

8/88 - 12/88, ***Adjunct Lecturer***, **The American University, Washington, D.C.** Developed and taught "Toxicology: The Chemistry of Poisons," a one-semester undergraduate course designed for non-science majors.

1/87 - 12/89, ***Teaching and Research Assistant,*** **The American University, Washington, D.C.**
Instructed undergraduate laboratory sessions in general chemistry, instrumental analysis, and toxicology for non-science majors. Research in the areas of SFE of model humic acid compounds from clays; effects of mobile phase modifiers on packed column stationary phases in SFC; ion chromatography with post-column derivatization for the detection and quantitation of trace levels of lead, cadmium, and zinc in drinking water.

3/85 - 7/86, ***Analytical Chemist***, **New England Pathology Services, Inc., Woburn, MA**.
Performed routine and emergency toxicological analyses for the detection of drugs of abuse and therapeutic drugs in biological samples; responsible for all aspects of analysis, instrument troubleshooting, and reporting of results.

9/83 - 5/85, ***Teaching Assistant***, **Northeastern University, Departments of Criminal Justice and Forensic Chemistry, Boston, MA.** Instructed undergraduate laboratory session entitled "Introduction to Forensic Chemistry"; delivered lectures on scientific methods in "Introduction to Criminalistics."

6/84 - 9/84, ***Student Intern in Forensic Toxicology***, **Rhode Island Department of Health, Toxicology Division, Providence, RI.** Required summer internship as part of M.S. degree in Forensic Chemistry. Rotated through the Law Enforcement, Human Toxicology, and Racing Toxicology Laboratories.

Funded Research and Awards

Morrison, J.F. Recipient of the 2012 Supercritical Fluid Education Grant sponsored by Applied Separations, Inc. (Allentown, PA) and administered by the American Chemical Society Green Chemistry Institute. Award presented at the 16th Annual American Chemical Society Green Chemistry and

Engineering Conference in Washington DC. (June 18 – 20, 2012). Award consists of analytical instrumentation for supercritical fluid extraction plus supporting educational material ($40,000)

Morrison, J.F. (Principal Investigator); Adams, E. and Correll, D. (Undergraduate Research Assistants), "Development of an SPME/GC-MS Method for the Rapid Analysis of Recreational Drugs in Saliva", Trinity College Faculty Research Assistantship Grant, $7000 for two student assistants (Summer 2011)

Morrison, J.F. (Principal Investigator); Ashby, J. (Undergraduate Research Assistant), "Analytical Method Development for the Supercritical Fluid Extraction of Rotenone in Hair to Assess Occupational Exposure", Trinity College Faculty Research Assistantship Grant, $3500 (Academic year 2008-2009)

Morrison, J.F. (Principal Investigator); Lee, M.P. (Undergraduate Research Assistant), "Method Development for the Analysis of the Hallucinogenic Drugs Dimethyltryptamine and Harmine in Botanical Formulations", Trinity College Faculty Research Assistantship Grant, $3500 (Summer 2008)

Morrison, J.F. (Principal Investigator); Harte, K. (Undergraduate Research Assistant), "In Vitro degradation of Cocaine, Morphine, and Methamphetamine by Typical Putrefactive Bacteria", Howard Hughes Medical Institute Grant to Trinity College/Hughes Summer Scholars, $3900 (Summer 2006)

Morrison, J.F. (Principal Investigator) "In Vitro degradation of Cocaine, Morphine, and Methamphetamine by Typical Putrefactive Bacteria", Hughes Faculty Development Grant, Howard Hughes Medical Institute Grant to Trinity College, $850 (Summer 2006)

Morrison, J.F. (Principal Investigator); Cavar, J. (Undergraduate Research Assistant), "Development of Forensic Databases to Support Crime Scene Investigations with Portable, Non-destructive X-ray Fluorescence Technologies", Trinity College Faculty Research Assistantship Grant, $3500 (Summer 2005)

Morrison, J.F. (Principal Investigator); Yennie, C. (Undergraduate Research Assistant), "Testing for Multiple Drug Classes in Hair Using Supercritical Fluid Extraction and Gas Chromatography-Mass Spectrometry", Trinity College Faculty Research Assistantship Grant, $3500 (Summer 2003)

O'Connell, S.; **Morrison, J.F**.; Osborn, J. "Connecting with the River: Geoscience Research and Education for Hartford, CT", National Science Foundation Grant No. GEO-0119968, $333,173 (2002 – 2004)

Morrison, J.F. (Principal Investigator), Collaborative Evaluation Agreement between Trinity College and DrugRisk Solutions, Schuylerville, NY. Basic research in support of the development of diagnostic platforms for on-site hair drug testing. (Contract dated October 22, 2002; contract active 2003 – 2004).

Morrison, J.F. (Principal Investigator); Coppola, E. (Undergraduate Research Assistant), "Evaluation of Supercritical Fluid Extraction for the Isolation of Amphetamines from Human Hair", Trinity College Faculty Research Assistantship Grant, $3000 (Summer 2002)

Morrison, J. F. (Principal Investigator); Rada, A. (Undergraduate Research Assistant), "On-Line Derivatization/Supercritical Fluid Extraction of Amphetamines from Biological Samples", Trinity College Faculty Research Assistantship Grant, $3000 (Summer 2000)

Morrison, J.F. (Principal Investigator); Black, T. and King, P. (Undergraduate Research Assistants), "Hair Analysis for the Detection of Anabolic Steroid Abuse Using Supercritical Fluid Extraction and Liquid Chromatography-Mass Spectrometry", Trinity College Faculty Research Assistantship Grant, $4480 (Summer 1999)

Morrison, J.F. (Principal Investigator), "Evaluation of Analytical Methodologies for Non-Intrusive Drug Testing: Supercritical Fluid Extraction for the Rapid Screening of Drugs-of-Abuse in Hair", $100K funded by the National Institute of Justice, U.S. Department of Justice, through the NIST Office of Law Enforcement Standards (FY 96).

Morrison, J.F.; Choquette, S.J.; Christensen, R.J.; Chesler, S.N. (Co-investigators), "Real-Time Monitoring of Supercritical Fluid Processes", NIST Division Reserve Funding, $75K (FY 97).

Professional Affiliations

Member, American Chemical Society
Division of Analytical Chemistry
Subdivision on Chromatography and Separation Chemistry
Connecticut Valley Local Section

Patents

Morrison, J.F.; Morrison, P.A.; Selavka, C.M.; Eden, T.M.; Thuss, C.B.; Hopper, K.C.; and Sundsmo, J.S., "Hair Collection Device and Methods of Use Thereof", U.S. Patent No 6,478,750 B1 (November 12, 2002)

Stripling, Terri A.; Karker, Jeffrey A.; Hagerdon, Randy S.; **Morrison, Janet F**.; Lin, Jing; Eden, Thomas M.; and Selavka, Carl M., "System for comminuting, extracting and detecting analytes in solid biological samples", Patent No WO2005063962 A1 (July 14, 2005); Assignee: Drug Risk Solutions, Inc., USA

Stripling, Terri; Wright, Jeffrey; Karker, Jeffrey; and **Morrison, Janet F.**, "Transportable automated onsite extraction apparatus", Patent No WO2005054812 A2 (June 16, 2005); Assignee: Drug Risk Solutions, L.L.C., USA

Professional Presentations *(Undergraduate co-authors/presenters indicated by underscore)*

Marco, N., Lyskawa, K., and **Morrison, J.F**. "Method for Rapid Detection of Parkinson's Disease Biomarkers by Direct Analysis in Real Time-Time of Flight Mass Spectrometry (DART-TOFMS)," 2022 American Chemical Society Connecticut Valley Section Undergraduate Research Symposium, hosted virtually by UMASS Amherst, April 23, 2022.

Kromash, J.A. and **Morrison, J.F.** "Detection and Discrimination of Counterfeit Pharmaceuticals Using Direct Analysis in Real Time-Time of Flight Mass Spectrometry with Multivariate Statistical Analysis", 2019 American Chemical Society Connecticut Valley Section Undergraduate Research Symposium, Amherst College, Amherst, MA, April 27, 2019 (*Winner: Best Undergraduate Research Lecture Presentation*).

Romano-Pringle, K.A., Selavka, C.M., and **Morrison, J.F**. "Analysis of Ethyl Glucuronide in Oral Fluid Using LC-MS/MS and DART-TOFMS with SPME Pre-Concentration", 256th American Chemical Society National Meeting & Exposition, Boston, MA, August 19-23, 2018.

Romano-Pringle, K.A. and **Morrison, J.F**. "Analysis of Ethyl Glucuronide in Oral Fluid Using LC-MS/MS and SPME Pre-Concentration", 2018 American Chemical Society Connecticut Valley Section Undergraduate Research Symposium, Central Connecticut State University, New Britain, CT, April 21, 2018. (*Winner: Best Undergraduate Research Lecture Presentation*).

Romano-Pringle, K.A. and **Morrison, J.F.** "Development of a DART-TOFMS Method for the Detection of Ethyl Glucuronide in Oral Fluid", 2017 American Chemical Society Connecticut Valley Section Undergraduate Research Symposium, University of Connecticut, Storrs, CT, April 22, 2017.

Kromash, J.A., Naragon, T.H., Lucas, M.J., Wash, K.A., Cody, R.B., and **Morrison, J.F**. "Detection and Discrimination of Counterfeit Pharmaceuticals Using Direct Analysis in Real Time—Time of Flight Mass Spectrometry with Multivariate Statistical Analysis", Pittsburgh Conference on Analytical Chemistry and Applied Spectroscopy (PITTCON 2017), Chicago, IL, March 18, 2017.

Naragon, T.H., Kromash, J.A., Cody, R.B., and **Morrison, J.F**. "Comparison of Multivariate Statistical Analysis Approaches Applied to DART-TOFMS Data for the Characterization of Counterfeit Pharmaceuticals", Pittsburgh Conference on Analytical Chemistry and Applied Spectroscopy (PITTCON 2017), Chicago, IL, March 18, 2017.

Tully, K.M. and **Morrison, J.F**. "Quantitative Analysis of Synthetic Cathinones in Oral Fluid Using Solid Phase Microextraction Combined with Direct Analysis in Real Time – Time of Flight Mass Spectrometry (DART-TOFMS)", Mount Holyoke College, South Hadley, MA, April 23, 2016.

Morrison, J.F., Loring, H.S., Tully, K.M., and Musselman, B. "Evaluation of DART–TOFMS for the Analysis of Synthetic Cathinones in Oral Fluid", 250th American Chemical Society National Meeting and

Exposition, Boston, MA, August 16, 2015.

Loring, H.S., Musselman, B., and **Morrison, J.F.** "Optimization of Direct Analysis in Real Time–Time of Flight Mass Spectrometry (DART–TOFMS) for the Detection, Characterization, and Quantification of Synthetic Cathinones in Oral Fluid", 250th American Chemical Society National Meeting and Exposition, Boston, MA, August 16, 2015 (Poster ANYL 62).

Tully, K.M., Musselman, B., and **Morrison, J.F.** "Analysis of Synthetic Cathinones in Oral Fluid Using Stir Bar Sorptive Extraction (SBSE) Combined with Direct Analysis in Real Time–Time of Flight Mass Spectrometry (DART-TOFMS), 250th American Chemical Society National Meeting and Exposition, Boston, MA, August 16, 2015 (Poster ANYL 61).

Loring, H.S. and **Morrison, J.F.** "Direct Analysis in Real Time – Time of Flight Mass Spectrometry (DART-TOFMS) for the Detection, Characterization and Quantification of 'Bath Salts' in Oral Fluid," 2015 American Chemical Society Connecticut Valley Section Undergraduate Research Symposium, University of Saint Joseph, West Hartford, CT, April 18, 2015.

Tully, K.M. and **Morrison, J.F.** "Analysis of Synthetic Cathinones ('Bath Salts') Using Stir Bar Sorptive Extraction Combined with Direct Analysis in Real Time-Time of Flight Mass Spectrometry," 2015 American Chemical Society Connecticut Valley Section Undergraduate Research Symposium, University of Saint Joseph, West Hartford, CT, April 18, 2015.

Lucas, M.J. and **Morrison, J.F.** "Direct Analysis in Real Time – Time of Flight Mass Spectrometry for the Discrimination of Counterfeit from Authentic Sildenafil Citrate", 2015 American Chemical Society Connecticut Valley Section Undergraduate Research Symposium, University of Saint Joseph, West Hartford, CT, April 18, 2015.

Morrison, J.F. and Correll, D.M. "Analysis of Synthetic Cathinones in Oral Fluid Using SPME/GC-MS with Derivatization", 2013 Northeast Regional Meeting of the American Chemical Society, New Haven, CT, October 25, 2013. [***Session organizer and presider: "Forensic Analytical Chemistry"***]

Zhang, A., Loring, H. and **Morrison, J.F.** "Mass Spectrometric Characterization and SPME/GC-MS Detection of Synthetic Piperazines", 2013 Northeast Regional Meeting of the American Chemical Society, New Haven, CT, October 26, 2013.

Correll, D.M. and **Morrison, J.F.** "Determination of Synthetic Cathinones ("Bath Salts") in Oral Fluid by DI-SPME/GC-MS and In-Matrix Derivatization", American Chemical Society Connecticut Valley Section 2013 Undergraduate Research Symposium, Central Connecticut State University, New Britain, CT, April 27, 2013.

Zhang, A. and **Morrison, J.F.** "Mass Spectrometric Characterization and SPME/GC-MS Detection of Synthetic Piperazines", American Chemical Society Connecticut Valley Section 2013 Undergraduate Research Symposium, Central Connecticut State University, New Britain, CT, April 27, 2013.

Miceli, A., Correll, D.M., and **Morrison, J.F.** "Analysis of Amphetamine Analogs Using Headspace Solid-Phase Microextraction and In-Matrix Derivatization", American Chemical Society Connecticut Valley Section 2013 Undergraduate Research Symposium, Central Connecticut State University, New Britain, CT, April 27, 2013.

Correll, D.M. and **Morrison, J.F.** "Analysis of Synthetic Cathinones ("Bath Salts") in Oral Fluid Using HS-SPME/GC-MS and In-Matrix Derivatization", Pittsburgh Conference on Analytical Chemistry and Applied Spectroscopy (PITTCON 2013), Philadelphia, PA, March 18, 2013.

Correll, D.M., McLendon, C.A., and **Morrison, J.F.** "Optimization and Validation of a HS-SPME/GC-MS Method for the Analysis of MDMA ("Ecstasy") in Oral Fluid", Pittsburgh Conference on Analytical Chemistry and Applied Spectroscopy (PITTCON 2012), Orlando, FL, March 12, 2012 and March 15, 2012.

Correll, D.M. and **Morrison, J.F.** "Method Development for the Detection and Quantification of MDMA ("Ecstasy") in Oral Fluid and Possible Applications for the Detection of Emerging 'Legal Highs'", American Chemical Society Connecticut Valley Section 2012 Undergraduate Research Symposium,

Springfield College, Springfield, MA, April 30, 2012.

Adams, E.J. and **Morrison, J.F.** "Method Development and Quantitative Analysis of Dimethyltryptamine (DMT) in Oral Fluid by HS-SPME/GC-MS", American Chemical Society Connecticut Valley Section 2012 Undergraduate Research Symposium, Springfield College, Springfield, MA, April 30, 2012 [Poster P10].

Correll, D.M. and **Morrison, J.F.** "Development of a Rapid HS-SPME/GC-MS Method for the Detection of MDMA ("Ecstasy") in Saliva", American Chemical Society Connecticut Valley Section 2011 Undergraduate Research Symposium, Trinity College, Hartford, CT, April 30, 2011.

Morrison, J.F. "Introduction to Forensic Chemistry at Trinity College: The Value of the Integrated Laboratory Experience in a Non-Majors Course", 36th Northeastern Regional Meeting of the American Chemical Society, Hartford, CT, October 10, 2009. [***Session organizer and presider***]

Ashby, J.T.; Cavar, J.R.; **Morrison, J.F**. "Analysis of Rotenone in Hair Using Supercritical Fluid Extraction and Liquid Chromatography-Mass Spectrometry: Method Optimization Experiments", 238th American Chemical Society National Meeting and Exposition, Washington, D.C. August 16, 2009.

Ashby, J.T. and **Morrison, J.F.** "Method Optimization for the Supercritical Fluid Extraction and Liquid Chromatography-Mass Spectrometry Analysis of Rotenone in Human Hair", American Chemical Society Connecticut Valley Section 2009 Undergraduate Research Symposium, Connecticut College, New London, CT, April 25, 2009.

McColl, K. C. and **Morrison, J.F. "**Investigation of the *In Vitro* degradation of Cocaine, Morphine, Phencyclidine, and Methamphetamine by Typical Putrefactive Bacteria: Optimization of Extraction Methods", 2007 Connecticut Valley Section of the American Chemical Society Undergraduate Research Symposium, Simon's Rock College of Bard, April 28, 2007.

Morrison, J.F. "Testing for Drugs-of-Abuse in Human Hair and Other "Unusual" Biological Samples: Emerging Technologies, Controversies, and Applications of SFE Technology", Northeastern University Department of Chemistry, June 19, 2006 (INVITED LECTURE)

Cavar, J. R. and **Morrison, J.F.** "Analytical Method Development for the Supercritical Fluid Extraction and Quantification of Rotenone in Hair to Assess Occupational Exposure", 33rd Northeast Regional Meeting of the American Chemical Society, Fairfield, CT, July 15, 2005.

Morrison, J.F. "Use of a Blackboard Textbook Course Cartridge as a Teaching Tool", First Annual Spring Institute on Teaching with Technology, Trinity College, Hartford, CT, May 19, 2005.

Henderson, D.E. and **Morrison, J.F.** "Service Learning In Analytical Chemistry—The Neighborhood As A Laboratory", Federation of Analytical Chemistry and Spectroscopy (FACCS) Meeting, Providence, RI, October 14, 2002.

Rada, A.L. and **Morrison, J.F**. "In Situ Derivatization/SFE of Amphetamine, Methamphetamine, and Ecstasy from Human Hair", 10th International Symposium on Supercritical Fluid Chromatography, Extraction, and Processing, Myrtle Beach, SC, August 19-22, 2001.

Rada, A.L. and **Morrison, J.F**. "Detection of Ecstasy, Amphetamine, and Methamphetamine in Hair Using On Line Derivatization/Supercritical Fluid Extraction and GC-MS", 2001 Connecticut Valley Section of the American Chemical Society Undergraduate Research Symposium, Hartford, CT, April 21, 2001.

Morrison, J.F. "Forensic Applications of Chromatography", Tutorial College at Trinity College, Hartford, CT, March 12, 2001 (invited lecture and laboratory module).

Morrison, J.F. and Rada, A.L. "Isolation of Amphetamines from Human Hair Using On-Line Derivatization/Supercritical Fluid Extraction", 220th National Meeting of the American Chemical Society, Washington, D.C., August 20, 2000.

Rada, A.L. and **Morrison, J.F.** "On-line Derivatization/Supercritical Fluid Extraction of Amphetamines from Human Hair", Northeast Regional Meeting of the American Chemical Society, Storrs, CT, June 19, 2000.

Morrison, J.F. "Testing for Drugs-of-Abuse in Human Hair and Other "Unusual" Biological Samples:

Emerging Technologies, Controversies, and Applications", Greater Hartford High School Colloquium Series at Trinity College, Hartford, CT, March 21, 2000.

Morrison, J.F.; Sniegoski, L.T.; Selavka, C.M. "Forensic Drug Testing in Human Hair Using Supercritical Fluid Extraction: How, Why, and Who Cares?", The International Society for Optical Engineering (SPIE) International Symposium of Enabling Technologies for Law Enforcement and Security, Boston, MA, November 4, 1998 (INVITED)**.**

Morrison, J.F. "Testing Human Hair for Drugs-of-Abuse: Emerging Technologies, Controversies, and Applications", *Quinnipiac College Interdisciplinary Research Seminar Series*, Quinnipiac College, November 19, 1997 (INVITED).

Morrison, J.F.; Chelser, S.N.; Yoo, W.J. "Forensic Applications of SFE: Analysis of Hair for Drugs of Abuse", *35th Annual Eastern Analytical Symposium and Exposition*, Somerset, NJ, November 18, 1996 (INVITED)**.**

Morrison, J.F.; Yoo, W.J.; Chesler, S.N. "SFE in Forensic Toxicology: Analysis of Hair for Drugs of Abuse", *Highlands in Chemistry Seminar Series*, Department of Chemistry, Virginia Polytechnic Institute and State University, September 13, 1996 (INVITED).

Morrison, J.F.; Chesler, S.N.; Reins, J.L. "SFE and SFE-Immunoassay of Drugs-of-Abuse in Hair: Matrix and Modifier Effects", *7th International Symposium on Supercritical Fluid Chromatography and Extraction*, Indianapolis, IN, March 31-April 4, 1996 (INVITED).

Morrison, J.F.; Chesler, S.N.; Reins, J.L. "Supercritical Fluid Extraction-Immunoassay for the Rapid Screening of Drugs-of-Abuse in Hair", *17th International Symposium on Capillary Chromatography and Electrophoresis*, Wintergreen, VA, May 7 - 11, 1995.

Morrison, J.F.; MacCrehan, W.A.; Selavka, C.S. "Evaluation of Supercritical Fluid Extraction for the Selective Recovery of Drugs-of-Abuse from Hair", *2nd International Meeting on Clinical and Forensic Aspects of Hair Analysis,* Genova, Italy, June 6 - 8, 1994 (INVITED).

Morrison, J.F. "Supercritical Fluid Extraction of Drugs-of-Abuse from Hair", Bureau of Alcohol, Tobacco, and Firearms National Laboratory Center, Rockville, MD, June 29, 1994 (INVITED).

Morrison, J.F. and MacCrehan, W.A. "Supercritical Fluid Extraction of Cocaine from Human Hair Using CO_2 Modified with Water and Triethylamine", *5th International Symposium on Supercritical Fluid Chromatography and Extraction,* Baltimore, MD, January 11 - 14, 1994.

Page, S.H. and **Morrison, J.F.** "Measurement and Influence of Phase Behavior on Supercritical Fluid Chromatography and Extraction", *5th International Symposium on Supercritical Fluid Chromatography and Extraction,* Baltimore, MD, January 11 - 14, 1994.

Morrison, J.F. "The Use of CO_2-Modified Fluids for the Selective Recovery of Polar Drugs-of-Abuse from Hair", *NIST Workshop on Supercritical Fluid Extraction: Technology of the Future,* Boulder, CO, November 30, 1993.

Morrison, J.F. "Extraction of Drugs-of-Abuse from Human Hair Using Supercritical Fluids", *First Annual Sigma Xi Post-Doctoral Poster Presentation,* NIST, Gaithersburg, MD, February 24, 1994.

Morrison, J.F.; Simon, N.S.; Girard, J.E. "Application of Supercritical Fluid Extraction to Bed Sediments from the Calcasieu River Estuary, Louisiana", *1991 International Symposium on Supercritical Fluid Chromatography and Extraction,* Park City, Utah, January 10 - 14, 1991.

Morrison, J.F.; Simon, N.S.; Girard, J.E. "Isolation of Natural and Anthropogenic Organic Compounds from Estuarine Bed Sediments Using Supercritical Fluid Extraction", *201st American Chemical Society National Meeting,* Atlanta, GA, April 1991.

Simon, N.S. and **Morrison, J.F.** "Metallo-Organic Compounds Extracted from Estuarine Suspended Organic Material and Bed Sediments", presented by N.S. Simon at the *201st American Chemical Society National Meeting,* Atlanta, GA, April 1991.

Publications

Bazilio, A.A.; Kovarik, M.L.; and **Morrison, J.F.** "New Software Application and Case Study That Simplify Teaching Complex Chemical Solubility and Equilibria", *J. Chem. Educ.* 99 (2), 526–530 (2022).

O'Connell, S.; Ortiz, J.; and **Morrison, J.F.** "Connecting Urban Students with their Rivers Generates Interest and Skills in the Geosciences", *Journal of Geoscience Education* 52 (5), 462-471 (2004).

O'Connell, S.; Ortiz, J.; and **Morrison, J.F.** "Connecting with the River", *Geotimes* 48 (9), 14-17 (2003).

Morrison, J.F.; Sniegoski, L.T.; and Yoo, W.J. "Evaluation of Analytical Methodologies for Non-Intrusive Drug Testing--Supercritical Fluid Extraction of Cocaine from Hair", *National Institute of Justice Technical Report 601-98*, National Institute of Justice, Washington, D.C., March 1999.

Morrison, J.F.; Chesler, S.N.; Yoo, W.J.; and Selavka, C.M. "Matrix and Modifier Effects in the Supercritical Fluid Extraction of Cocaine and Benzoylecgonine from Human Hair", *Anal. Chem*. 70 (1), 163-172 (1998).

Maxwell, R.J. and **Morrison, J.F.** "Supercritical Fluid Extraction as a Sample Preparation Tool in Analytical Toxicology", in *Handbook of Analytical Therapeutic Drug Monitoring and Toxicology*, Wong, S.H.Y. and Sunshine, I., Eds., CRC Press: Boca Raton, FL, Chapter 5, 1997 (INVITED BOOK CHAPTER).

Morrison, J.F.; Chesler, S.N.; and Reins, J.L. "Supercritical Fluid Extraction-Immunoassay for the Rapid Screening of Cocaine in Hair", *J. Microcolumn Separations*, 8 (1), 37-45 (1996).

Morrison, J.F.; Chesler, S.N.; and Reins, J.L. "SFE and SFE-Immunoassay of Drugs-of- Abuse in Hair: Matrix and Modifier Effects", *Proceedings of the 7th International Symposium on Supercritical Fluid Chromatography and Extraction, Indianapolis, IN, March 31-April 4, 1996*, Supercritical Conferences: Cincinnati, OH, p. L-11 (1996).

Morrison, J.F.; Chesler, S.N.; and Reins, J.L. "Supercritical Fluid Extraction-Immunoassay for the Rapid Screening of Drugs-of-Abuse in Hair", *Proceedings of the Seventeenth International Symposium on Capillary Chromatography and Electrophoresis*, p. 666 (1995).

Morrison, J.F.; MacCrehan, W.A.; and Selavka, C.S. "Evaluation of Supercritical Fluid Extraction for the Selective Recovery of Drugs-of-Abuse from Hair", *Second International Meeting on Clinical and Forensic Aspects of Hair Analysis, Genova, Italy, June 1994*, National Institute on Drug Abuse, U.S. Department of Health and Human Services Special Publication (1996).

Page, S.H.; **Morrison, J.F.**; and Lee, M.L. "Effect of Phase Behavior on Supercritical Fluid Chromatographic and Extraction Performance", in Kiran, E. and Levelt Sengers, J.M.H., eds. *Supercritical Fluids: Fundamentals for Application*, Klewer Academic Publishers: Dordrecht, The Netherlands, pp. 641-652. (1994) (BOOK CHAPTER).

Page, S.H.; **Morrison, J.F.**; Christensen, R.G.; and Choquette, S.J. "Instrument for Evaluating Phase Behavior of Mixtures for Supercritical Fluid Experiments", *Anal. Chem.*, 66, 3553-3557 (1994).

Morrison, J.F. and MacCrehan, W.A. "Supercritical Fluid Extraction of Cocaine from Human Hair Using CO_2 Modified with Water and Triethylamine", *Proceedings of the 5th International Symposium on Supercritical Fluid Chromatography and Extraction, Baltimore, MD, January 11- 14, 1994,* Supercritical Conferences: Cincinnati, OH, p. F-16 (1994).

Morrison, J.F.; Simon, N.S.; Girard, J.E. "Isolation of Natural and Anthropogenic Organic Compounds from Estuarine Bed Sediments Using Supercritical Fluid Extraction", *Proceedings of the 201st ACS National Meeting,Atlanta, GA, April 1991 (American Chemical Society Division of Environmental Chemistry),* 31(1), 71 (1991).

Simon, N.S. and **Morrison, J.F.** "The Role of Bed Sediments and Drift in the Transport and Fate of Metallo-Organic Compounds in the Calcasieu Estuary, Louisiana", in Mallard, G.E. and Aronson, D.A. *U.S. Geological Survey Toxic Substances Hydrology Program--Proceedings of the Technical Meeting, Monterey, CA, March 11-15, 1991,* Water Resources Investigation Report No. 91-4034 (1991).

Morrison, J.F. "Supercritical Fluid Extraction of Free Fatty Acids from Siliceous Solids", Ph.D. Dissertation, The American University (1992).

College Service (current or recent past)

Jury Panel (Chair, '20 – present; Vice Chair, '19-'20; Member, Fall 2016 – present)

IDP Council (September 2017 – September 2021)

Faculty Liaison, Trinity Women's Golf Team, 2020 - present

Faculty Advisory Group on Student Accessibility Services (September 2017 – present)

Faculty Mentor, Chicago Posse Scholars, Class of 2018 (Summer 2014 – May 2018)

Venture Leadership Program, Faculty Discussion Panelist and Roundtable Discussion Facilitator, "Establishing Your Voice in the Classroom" (August 26, 2016)

Instructional Technology in Education Committee (ITEC)
Chair (Fall 2011-Spring 2012; Fall 2013 – Spring 2016)
Member, 2009-2012; 2013- 2016)

Trinity edX Faculty Committee
Member, Spring – Summer 2015

Learning Spaces Committee
Member, 2011-2012; 2013-2015

ITS Summer Institute on Teaching with Technology (SIIT)
Panelist and presenter, Clickers in the Classroom (May 2015)

Faculty Liaison, Trinity College Men's and Women's Swimming and Diving
2007 – 2016

Search Committee for new Instructional Technologist positions (ITS)
Spring 2014; resulted in the hire of Cheryl Cape
Fall 2011; resulted in the hire of Sue Denning

Search Committee for Head Coach, Trinity Men's & Women's Swimming & Diving
Spring 2014; resulted in the hire of Carlos Vega

Search Committee for new Director of Education Technology position (ITS)
Spring 2013; resulted in the hire of Jason Jones

ITEC Workshop Organizer and Presider
Innovation with ITEC: Exploring Tablet Technology in the Classroom and Beyond
Common Hour, Thursday, November 3, 2011
- This workshop represented the culmination of the ITEC/ITS pilot program which explored the use of iPad technology in the classroom

Outreach, Professional Development, and Community Service Programs

- Spring 2016 semester**: Community Learning Initiative (CLI)** – as course component of Chem 312, collaborative soil testing project with HMTCA sixth graders (initiated by Michelle Kovarik). Chem 312 students worked collaboratively with the sixth graders at HMTCA including:
  - Made two site visits to HMTCA to teach sixth graders about soil quality testing and perform basic quality testing experiments;
  - Collected soil samples from the sixth graders and brought those samples back to Trinity for more sophisticated testing in our laboratory;
  - Prepared a video and poster presentation for students at HMTCA summarizing the results of testing done at Trinity and explaining the science underlying the testing procedures performed in our laboratory.

- December 2, 2016: **Hartford Magnet Trinity College Academy (HMTCA)**: Participated as the keynote speaker in "Forensic Science Night" for parents and students; designed and oversaw various hands-on forensic "crime lab" activities focused on latent fingerprint detection.

- Summer 2013 and Summer 2012: Participate in summer laboratory tours for **Hartford Magnet Trinity College Academy (HMTCA)** students

- Spring 2012: **Greater Hartford Academy of Math & Sciences (GHAMAS) at the Learning Corridor**, Developing experiments and training science teachers at GHAMAS on the use of analytical instrumentation (high performance liquid chromatography and gas chromatography) for incorporation into their science curriculum

- May 20, 2011: **Workshop on Forensic Science** at Trinity College for **Granby Middle School** students

Past participation as teaching faculty and organizer of the following past programs at the ***Greater Hartford Academy of Math and Sciences (GHAMAS) at the Learning Corridor, Hartford, CT***:

- November 2, 2004: **Professional Development Conference for Middle and Secondary Math/Science Teachers**—Held a workshop entitled *Introduction to UV-Visible Spectroscopy* with Lisa Nestor (Trinity) and Melissa Conrad (GHAMAS) for area high school teachers (half day program at GHAMAS).

- November 5, 2002: **Professional Development Conference for Middle and Secondary Math/Science Teachers**—Held a workshop entitled *Introduction to UV-Visible Spectroscopy* with Lisa Nestor (Trinity) and Melissa Conrad (GHAMAS) for area high school teachers (full day program at GHAMAS).

- December 4, 2001: **PIMMS Chemistry Institute**—Held a workshop with GHAMAS faculty entitled *Tools for Chemical Analysis: Chromatography and Spectroscopy* for area teachers, grades 9-12 (full day program at GHAMAS).

- November 6, 2001: **Trinity College/GHAMAS Professional Development Conference**—Held two workshops with GHAMAS faculty entitled *A Primer on Chromatography-Applications in Forensic Science* and *A Primer on Ultraviolet-Visible Spectroscopy* for teachers, grades 7 – 12 (full day program at GHAMAS).

- July 24, 2001: **Scientist-in-residence at GHAMAS** with Lisa Nestor for a series of summer student programs. Workshops on the chemical development of latent fingerprints held for three student groups: CPEP (CT Pre-Engineering Program), YO (Youth Opportunities) Hartford students, and a group of entering 9th grade GHAMAS students (approximately 60 students total).

- March 24, 2001: **Student Outreach—Explorations in Forensic Science: Introduction to Spectroscopy**. Developed and taught, along with Lisa Nestor (Trinity), this last in a series of four day-long Saturday workshops for area high school and middle school students (full day program at GHAMAS).

- March 17, 2001: **Student Outreach—Explorations in Forensic Science: DNA Profiling in Forensic Science.** Developed and taught this third in a series of four day-long Saturday workshops for area high school and middle school students (full day program at GHAMAS).

- March 10, 2001: **Student Outreach—Explorations in Forensic Science: Forensic Applications of Chromatography.** Developed and taught this second in a series of four day-long Saturday workshops for area high school and middle school students (full day program at GHAMAS).

- March 3, 2001: **Student Outreach—Explorations in Forensic Science 2001: Fingerprint Detection Methods.** Developed and taught this first in a series of four day-long Saturday workshops for area high school and middle school students (full day program at GHAMAS).

- February 10, 2001: **Professional Development Workshop for High School Teachers—Teacher's Institute in Explorations in Forensic Science.** Held a day-long Saturday workshop with Lisa Nestor (Trinity) and Howard Thiery (GHAMAS) for area high school teachers. Instructed teachers on the forensic technologies of DNA profiling, chemical detection of latent fingerprints, and chromatographic analysis of inks (full day program at GHAMAS).