

## Jason D. Brewer

Federal Bureau of Investigation  
Chemistry Unit, Room 4220  
2501 Investigation Parkway  
Quantico, VA 22135  
(703) 632-7827

### PROFESSIONAL EXPERIENCE

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Sep 2006 - present      **Forensic Chemist Examiner**  
FBI Laboratory  
Federal Bureau of Investigation  
Quantico, VA

Perform forensic examinations on evidence submitted to the Chemistry Unit in criminal investigations in the areas of controlled substances, bank security devices, pepper sprays, inks, lubricants, secret writing and general unknowns. Interpret data, prepare written reports and provide expert witness testimony regarding results of chemical analyses.

Nov 2004 - Sep 2006      **Chemist**  
FBI Laboratory  
Federal Bureau of Investigation  
Quantico, VA

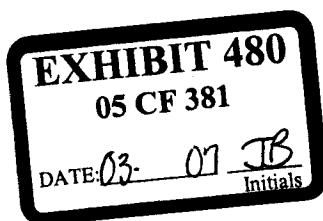
Performed forensic examinations on evidence submitted to the Chemistry Unit in criminal investigations in the areas of controlled substances, bank security devices, pepper sprays, inks and general unknowns.

Jan 2004 - Nov 2004      **Postdoctoral Fellow (Visiting Scientist)**  
Oak Ridge Institute for Science and Education (ORISE)  
FBI Laboratory  
Federal Bureau of Investigation  
Quantico, VA

Developed new methods for the identification of organic dyes in ink at the FBI Laboratory, Counterterrorism and Forensic Science Research Unit (CTFSRU). Presented work at scientific meetings and published results in peer reviewed journals. Assisted in preparation of quarterly reports and presented results to the FBI Laboratory, Chemistry Unit.

Aug 1998 - Aug 2003      **Research Assistant**  
Department of Chemistry  
The University of North Carolina at Chapel Hill  
Chapel Hill, NC

Designed and performed high vacuum, thin-film deposition experiments; collected and interpreted spectroscopic ellipsometry, atomic force microscopy, capacitance-voltage and other applicable data; periodically reported significant results. Researched scientific literature and presented relevant articles to research group. Generated an original research dissertation concerning plasma nitridation of silicon dioxide films for semiconductor applications.



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- Aug 1998 - May 2000 **Teaching Assistant**  
Department of Chemistry  
The University of North Carolina at Chapel Hill  
Chapel Hill, NC
- Instructed and evaluated students in Physical Chemistry Lab (Scanning Tunneling Microscopy) and General Chemistry Lab I and II.
- May 1998 - Aug 1998 **Intern**  
Virginia Semiconductor, Inc.  
Fredericksburg, VA
- Assisted in the manufacturing and testing of single-crystal silicon wafers. Initiated and maintained a wastewater neutralization system.
- May 1996 - May 1998 **Research Assistant**  
Department of Chemistry  
James Madison University  
Harrisonburg, VA
- Investigated and synthesized several (tricarbonyl) (4-L-pyridine) (5-L'-1,10-phenanthroline) rhenium (I) perchlorates for applications as molecular reporters. Presented results at scientific meetings.
- May 1997 - Aug 1997 **Intern**  
National Science Foundation (NSF) / San Jose State University (SJSU) / IBM  
IBM Almaden Research Center (IBM-ARC)  
Almaden, CA
- Studied the chemical modification of fused-silica capillaries as part of a joint NSF/SJSU/IBM-ARC summer research program. Presented results at a research symposium at IBM-ARC.
- May 1995 - Aug 1995 **Intern**  
FBI Training Division  
Federal Bureau of Investigation  
Quantico, VA
- Catalogued and distributed ammunition; organized and maintained target scenarios at the Firearms Training Unit (FTU) range.

## EDUCATION

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- 1998 - 2003 **The University of North Carolina at Chapel Hill**  
Chapel Hill, NC  
Doctor of Philosophy Degree  
Major: Chemistry
- 1994 - 1998 **James Madison University**  
Harrisonburg, VA  
Bachelor of Science Degree  
Major: Chemistry

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#### AWARDS AND HONORS

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2006	FBI Award (casework recognition)
2001 - 2002	UNC at Chapel Hill Francis P. Venable Fellowship
2001	AVS Plasma Science and Technology Division, Coburn and Winters Award Finalist
2001	AVS Dorothy M. and Earl S. Hoffman Travel Scholarship
1998 - 1999	UNC at Chapel Hill Francis P. Venable Fellowship
1998	The Degesch America, Inc. Award Recipient

#### PROFESSIONAL AFFILIATIONS

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Mar 2006 - Present	Scientific Working Group on the Forensic Analysis of Chemical Terrorism (SWGFACT)
2001 - 2002	American Vacuum Society (AVS)
2000 - 2001	Materials Research Society (MRS)
1996 - 2000	American Chemical Society (ACS)

#### PROFESSIONAL TRAINING RECEIVED

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Aug 2006	Raman Microscopy, McCrone Research Institute, Chicago, IL
Jun 2006	Microsoft Office 2000: Intermediate Access, FBI Virtual Academy, Quantico, VA
Apr 2006	Microsoft Office 2000: Beginning Access, FBI Virtual Academy, Quantico, VA
Mar 2005	IR Spectrometry for Trace Analysis, FBI Academy, Quantico, VA
Feb 2005	Modern Practice of GC/MS, Shimadzu, Columbia, MD
Feb 2005	Forensic Chemist Seminar, DEA, Sterling, VA
Feb 2005	HPLC Operation and Troubleshooting, Waters, FBI Laboratory, Quantico, VA
Jan 2005	CE of Ballpoint Ink, FBI Laboratory, Quantico, VA
Jan 2005	GC-TOF MS Operation, Waters, FBI Laboratory, Quantico, VA
Dec 2004	On-line Extraction for Automating Sample Preparation, FBI Laboratory, Quantico, VA
Dec 2004	Basic Q-TOF Theory and Operation, Waters, FBI Laboratory, Quantico, VA
Mar 2004	Practical Capillary Electrophoresis, ACS, Anaheim, CA

#### PRESENTATIONS

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Oct 2004	The 15 <sup>th</sup> Annual Frederick Conference on CE/Proteomics, Frederick, MD. "Forensic Analysis of Ballpoint Pen Inks Using Capillary Electrophoresis."
May 2004	FBI Laboratory, Quantico, VA. "Ink Analysis by Capillary Electrophoresis."
Aug 2003	Original Doctoral Dissertation, The University of North Carolina at Chapel Hill, Chapel Hill, NC. "Plasma Nitridation of Silicon Dioxide Studies."
Oct 2001	AVS 48 <sup>th</sup> International Symposium, San Francisco, CA. "Study of SiO <sub>x</sub> N <sub>y</sub> Films Deposited by Radio-Frequency Plasma Assisted Electron Cyclotron Resonance."
Mar 2001	The University of North Carolina at Chapel Hill, Chapel Hill, NC. "Next Generation Gate Dielectrics for Metal-Oxide-Semiconductor Microelectronic Devices."
Nov 2000	MRS Fall Meeting, Boston, MA. "Kinetics of Nitrogen Incorporation in Thermal Silicon Dioxide by Radio-Frequency Plasma Assisted Electron Cyclotron Resonance."

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- Nov 2000 MRS Fall Meeting, Boston, MA. "Study of Silicon Oxynitride Films Produced by Radio-Frequency Plasma Assisted Electron Cyclotron Resonance."
- Aug 1997 NSF/SJSU/IBM-ARC Research Symposium, Almaden, CA. "The Etching and Chemical Modification of Fused-Silica Capillaries."
- Nov 1996 Southeast Regional Meeting of the American Chemical Society, Greenville, SC. "Applications of Rhenium (I) Micelle Complexes as Molecular Reporters."

#### PUBLICATIONS

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J.M. Egan, J.D. Brewer, K.A. Hagan and C.L. Strelko, "Capillary Electrophoresis of Ballpoint Pen Inks," *Journal of the American Society of Questioned Document Examiners* 9(1), 37 (2006).

J.D. Brewer, J.M. Egan and K. Hagan, "Forensic Analysis of Blue Ballpoint Pen Inks Using Capillary Electrophoresis," *Forensic Science Communications* 7(3), July 2005.

J.M. Egan, J.D. Brewer and K. Hagan, "Forensic Analysis of Black Ballpoint Pen Inks Using Capillary Electrophoresis," *Forensic Science Communications* 7(3), July 2005.

A. Raveh, J.D. Brewer and E.A. Irene, "Nitridation of thermal SiO<sub>2</sub> films by radio-frequency plasma assisted electron cyclotron resonance: Effect of plasma modes and process parameters," *Journal of Vacuum Science and Technology A* 19(1), 9 (2001).

A. Raveh, J.D. Brewer and E.A. Irene, "Nitridation of thermal SiO<sub>2</sub> films by radio-frequency plasma assisted electron cyclotron resonance: Layer structure and composition," *Journal of Vacuum Science and Technology A* 19(1), 17 (2001).