

# Curriculum Vita

## Kimberley F. Schrum

### Personal Information

Address: Department of Chemistry  
Whittier College  
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### Education

BA: Lawrence University, Appleton, WI 1991  
Ph.D. Purdue University, W. Lafayette, IN 1996  
Advisor: Dr. Dor Ben-Amotz

### Teaching Experience

Assistant Professor, Whittier College 1999-present  
Assistant Professor, Maryville College 1996-1999

### Grants

NSF Research at Undergraduate Institutions Pending  
Research Corporation Cottrell College Science Pending  
DoD Infrastructor Support Grant for High Field NMR \$180,000  
Merck/AAAS Grant for Collaborative Research \$60,000  
DoD Infrastructure Support Grant for GC-Mass Spec \$90,437  
NSF RSEC Fellow \$1,000  
Pittsburgh Conference National College Grants Program \$9,000  
NSF Marco-ROA Fellow \$8,800  
Appalachian College Association Student/Faculty Grant Recipient \$15,000

### Committee Assignments/ College Responsibilities

Science Grants Facilitator 2002-present  
Dean Search Committee 2002-present  
Faculty Executive Council 2001-present  
Environmental Science Steering Committee 1999-present  
Chem Club Co-Advisor 1999-present  
Educational Policies Committee 2001-2002  
Assessment Committee 1999-2001

### Conference Sessions Organized

Program Chair, Education Section, Federation of Analytical Chemistry and Spectroscopy Societies, Providence RI October 2002  
Program Co-Chair, Education Section, American Chemical Society National meeting, Anaheim, CA April 2004

### **Service in Professional Organizations**

ACS Education Division Program Committee	2002-present
ACS Experiential Programs in Chemistry (EpiC) Program Expert	2002-present
Project Kaleidoscope Faculty for the 21 <sup>st</sup> Century Member	2001-present
Council on Undergraduate Research Institutional Liason	2000-present
Service Learning Blueprint Task Force, American Chemical Society	2000-2001
Iota Sigma Pi National Honor Society, MAL Chapter, Treasurer	1996-1999

### **Membership in Professional Organizations**

Council on Undergraduate Research  
American Chemical Society  
Project Kaleidoscope-F21 Network  
Society of Applied Spectroscopy  
Iota Sigma Pi  
Phi Lambda Upsilon

### **Workshop Participation**

1. CUR "Proposal Writing Institute" Summer 2002
2. NSF/DUE Workshop "Diversity in Your Classroom: How to Bring Indigenous/Cross-cultural Chemistry to Your Classroom", Mt. San Antonio College, Walnut, CA Summer 2000
3. Association of College and University Offices "Proposal Development Fall 1998 Workshop of NSF's Course Curriculum and Laboratory Improvement Program", Washington, DC
4. Appalachian College Association First Annual Technology Summit Fall 1998
5. NSF/DUE Workshop "Quantitative Laboratory - A New Approach" Summer 1998  
University of Central Arkansas, Conway, AK
6. Council of Independent Colleges "Using the World Wide Web to Enhance Student Learning", Newberry, SC Summer 1998
7. NSF/DUE Workshop "Applications of Lasers to Chemistry" Summer 1997  
James Madison University, Harrisonburg, VA

### **Publications**

1. J.L. Pittman, K.F. Schrum and S.D. Gilman, "On-line Monitoring of Electroosmotic Flow for Capillary Electrophoretic Separations", *Analyst* 126, 1240-47 (2001).
2. **S.A. Karnya** and K.F. Schrum, "Introducing Spectroscopic Background Subtraction Through the Quantitation of Ethanol in Commercial Alcoholic Beverages", under review by the *Journal of Chemical Education*
3. J.L. Pittman, H.J. Gessner, K.F. Schrum, E.M. Raby, **J.B. Batts** and S.D. Gilman, "Experimental Studies of Electroosmotic Flow Dynamics During Sample Stacking for Capillary Electrophoresis", under review by *Analytical Chemistry*.

#### K.F. Schrum/ Publications Continued

4. **N. Wong Shi Kam** and K.F. Schrum, "Analysis of Drug Samples Using Raman Microspectroscopy" *Journal of Young Investigators*, 5 (2001).
5. K.F. Schrum, **J. Lancaster**, **S. Johnston**, and S.D. Gilman, "Monitoring Electroosmotic Flow by Periodic Photobleaching of a Dilute, Neutral Fluorophore" *Anal. Chem.* 72, 4317-21 (2000).
6. **R. Pertaub**, **N. Wong Shi Kam**, **K.A. McDonald**, **J. Darnell** and K.F. Schrum, "Raman Microspectroscopic Analysis of Drugs on Paper Currency" to be submitted to *Applied Spectroscopy*.
7. K.F. Schrum, "Chasing Criminals and Solving Crimes: A Course for Non-science Majors" to be submitted to the *Journal of College Science Teaching*.
8. Y. Melendez, K.F. Schrum and D. Ben-Amotz, "Quantitation of Poly(ethylene glycol) Concentration Using Raman Spectroscopy" *Appl. Spec.* 51, 1176-78 (1997).
9. K.F. Schrum, S.H. Ko and D. Ben-Amotz, "Description and Theory of a Fiber-Optic Super-focal and Confocal Raman Microspectrometer", *Appl. Spec.* 50, 1150-55 (1996).
10. K.F. Schrum, A. Williams, **S. Haerther** and D. Ben-Amotz, "Molecular Fluorescence Thermometry", *Anal. Chem.*, 66, 2788-90 (1994).

#### Presentations

1. **H. Thorpe** and K.F. Schrum, "Bioaccumulation of Heavy Metals by Plants in the San Gabriel River", American Chemical Society Meeting, New Orleans, LA, March 2003.
2. J. Narum, L. Lewis, K.F. Schrum and M. Puglia, "Is our vision of excellence in education keeping pace with our changing world?", Invited Panel, American Association of Colleges and University Annual Meeting, Seattle, WA, January 2003.
3. **H. Thorpe**, K.F. Schrum, J. Warrick and C. Swift, "Bioaccumulation of Heavy Metals by Plants in the San Gabriel River", Southern California Conference on Undergraduate Research, Pasadena, CA, November 2002
4. **D. Dionne**, **S. Siedschlag**, K.F. Schrum, J. Warrick and C. Swift, "Effects of Man-made Pools on Nutrient Concentrations in the San Gabriel River", Southern California Conference on Undergraduate Research, Pasadena, CA, November 2002.

K.F. Schrum/ Presentations Continued

5. **B. Stimmler**, C. Swift, K.F. Schrum and J. Warrick, "The Effect of Disturbance on Alder Communities, Southern California Conference on Undergraduate Research, Pasadena, CA, November 2002.
6. **S. Siedschlag**, K.F. Schrum, C. Swift and J. Warrick, "Effect of Small Scale Damming on Stream Channels, Southern California Conference on Undergraduate Research, Pasadena, CA, November 2002.
7. **K.A. McDonald** and K.F. Schrum, "Reduction of Fluorescence Interference in the Raman Microspectroscopic Determination of Drugs on Paper Currency", Federation of Analytical Chemistry and Spectroscopy Societies, Providence, RI, October 2002.
8. K.F. Schrum, "Instrumentation and Undergraduates: Getting the Most Bang for Your Buck", Invited Talk, Industrial Associates Meeting Honoring Harry Pardue, Purdue University, W. Lafayette, IN, September 2002.
9. **R. Pertaub** and K.F. Schrum, "Detection and Quantitation of Illicit Drugs and Paper Currency, Southern California Undergraduate Research Conference in Chemistry and Biochemistry, Northridge, CA, May 2002.
10. K.F. Schrum, "Starting and Sustaining Undergraduate Research: A View from the Trenches" Invited Talk, American Chemical Society Meeting, Orlando, FL, April 2002.
11. **R. Pertaub, J. Hood** and K.F. Schrum, "Detection and Quantitation of Illicit Drugs on Paper Currency", The Pittsburgh Conference, New Orleans, LA, March 2002.
12. K.F. Schrum, "Teacher Training through Hands-on Activities Conducted in Local Schools: A Service Learning Activity for Future Teachers", American Chemical Meeting, San Diego, CA, March 30, 2001.
13. **S.A. Karnya** and K.F. Schrum, "The Use of Raman Spectroscopy for the Identification of Plastics", American Chemical Society Meeting, San Diego, CA, April 1, 2001.
14. **N. Wong Shi Kam** and K.F. Schrum "Non-invasive Drug Detection on Paper Currency Using Raman Spectroscopy", American Chemical Meeting, San Diego, CA, April 1, 2001.
15. **S.A. Karnya** and K.F. Schrum, "Quantitation of Ethanol in Commercial Beverages Using Raman Spectroscopy", The Pittsburgh Conference, New Orleans, LA, March 7, 2001.

K.F. Schrum/ Presentations Continued

16. S.D. Gilman, J.L. Pittman, K.F. Schrum, D.P. Schrum, **J.Batts**, "Studies of Electroosmotic Flow Dynamics", The Pittsburgh Conference, New Orleans, LA, March 7, 2001.
17. K.F. Schrum and **S.A. Karnya**, "Raman in the Undergraduate Lab: It is Possible!", American Chemical Society Meeting, Washington, D.C. August 21, 2000.
18. K.F. Schrum and **S.A. Karnya**, "Raman Instruments and Experiments Designed for the Undergraduate Lab", American Chemical Society Meeting, Washington, D.C. August 20, 2000
19. K.F. Schrum "Research Sites for Educators: A National Science Foundation Panel" American Chemical Society Meeting, San Francisco, CA March 2000
20. S.D. Gilman, K.F. Schrum, **J. Lancaster**, **S. Johnston** and A.R. Whisnant, "Improvements in Post-Column Reagent Addition for Capillary Electrophoretic Separations" The Pittsburgh Conference, New Orleans, LA, March 2000
21. S.D. Gilman, **J. Lancaster**, J.L. Pittman, K.F. Schrum and A.R. Whisnant, "Post-Column Reagent Addition for Capillary Electrophoresis" American Chemical Society, Southeast Regional Meeting, Knoxville, TN October 1999
22. S.D. Gilman, K.F. Schrum, **J. Lancaster** and **S. Johnston** "Real-time Monitoring of Electroosmotic Flow for Capillary Electrophoretic Separations", Southeastern Association of Analytical Chemists, Mt. Pleasant, SC, Sept. 25, 1999
23. **J.L. Cotton** and K.F. Schrum, "Evaluation and Isolation of Herbal Antacids" American Chemical Society Meeting, Anaheim, CA. March 1999
24. **J.R. Stewart**, **A. Suri** and K F. Schrum, "Comparison of Synchronous Fluorescence and Raman Spectroscopy to Study Petroleum Contamination of Environmental Matrices", The Pittsburgh Conference, Orlando, FL, March 1999
25. **J.L. Dunnam**, T. Bunde and K.F. Schrum, "Bioremediation of Chlorophenol Contaminated Soil with Horseradish", American Chemical Society Meeting, Dallas, TX, March 1998.
26. **C.A. Wight**, T. Bunde and K.F. Schrum, "Protein Denaturation Studies Using Synchronous Fluorescence Spectroscopy", The Pittsburgh Conference, Atlanta, Georgia, March 1997.

K.F. Schrum/ Presentations Continued

27. K.F. Schrum and Dor Ben-Amotz, "Depth Resolved Studies of the Raman Spectra of Diamond as a Pressure Calibrant in Diamond Anvil Cell", The Pittsburgh Conference, Atlanta Georgia, March 1997.
28. K.F. Schrum, S.H. Ko, and D. Ben-Amotz, "Simultaneous Confocal and Super-focal Fiber-Optic Fluorescence and Raman Microscopy", Conference of the Federation of Analytical Chemistry and Spectroscopy Societies, Cincinnati, OH October, 1995.
29. K.F. Schrum, F. LaPlant. S.H. Ko, and D. Ben-Amotz, "Simultaneous Confocal and Super-focal Fiber-Optic Micro-Raman Imaging", The Pittsburgh Conference, New Orleans, LA, March 1995.
30. K.F. Schrum and D. Ben-Amotz, "Molecular Optical Spies", Invited Talk, Lawrence University, November 1994.
31. K.F. Schrum, A. Williams and D. Ben-Amotz, "Molecular Optical Thermometry" American Chemical Society Meeting, San Diego , CA, March 1994.

**\*Bold faced type denotes undergraduate research students**