

# CURRICULUM VITAE

**Joel Timothy Smith**  
**Professor of Chemistry**  
**Eagles Chair of Biomedical Sciences**  
**Southeastern Oklahoma State University**  
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## **EDUCATION**

1994	Ph.D. Analytical Chemistry	Oklahoma State University
1990	B.S. Chemistry	Southeastern Oklahoma State University

## **ACADEMIC AND RELATED NON-ACADEMIC EXPERIENCE**

2011-Present	Chair, Department of Chemistry, Computer and Physical Sciences
2006-Present	Professor of Chemistry, SEOSU
2002-Present	Engles Endowed Chair of Biomedicine, SEOSU
2001-2006	Associate Professor of Chemistry, SEOSU
1995-2001	Assistant Professor of Chemistry, SEOSU
1994-1995	Senior Research Chemist, Monsanto Corporate Research
1994-1991	Research Assistant, Oklahoma State University
1990-1991	Mass Spectrometry Service Technician, Oklahoma State University
1990	Teaching Assistant, Oklahoma State University

## **PROFESSIONAL INTERESTS**

Non-traditional teaching methodologies  
Inquiry-based laboratory experiences  
Bio-analytical separation techniques  
Hyphenated-analytical methodologies  
High-throughput screening techniques

## **SELECTED COMMITTEES AND SPECIAL ASSIGNMENTS**

### *University*

2016 to present	Higher Learning Commission, 2018 Assurance Report, Criterion 5 co-author
2015 to 2017	Presidential Budget Advisory Committee, Chair
2015-2016 present	Academic Vision Committee
2014	CIDT Director Search Committee

2011-2013	Harvard Professional Development
2009-2015	Faculty Appellate Committee
2001-2003	Grants Incentive Pay Committee, chair
2001-present	Numerous Faculty Tenure and Promotion Committees
1997 to present	Pre-professional Advisory Committee
1999-2001	Research and Assessment Committee
2003-2005	Search Committee for Director of Research and Sponsored Programs
1999-2001	Program Review Committee

***State***

1997-1999	American Chemical Society - Oklahoma Chapter chair-elect, chair, and past chair
2003-2008	American Chemical Society - Oklahoma Chapter section alternative councilor
2003-2009	Oklahoma NIH IDeA-INBRE Campus Coordinator

***Community***

1998 to 2011	Board of Directors for Wesley Center, vice-chair (07-11)
2002-2004	Board of Directors for SEOSU Alumni Association

**AWARDS AND HONORS**

2017	Faculty Senate Award for Teaching Excellence
2017	Faculty Senate Award for Meritous Service
1998, 2008	Faculty Senate Research Award
1994	Research Excellence Award, Honorable Mention, Oklahoma State
1991-1994	Water Resource President Fellowship, Oklahoma State University
1990	Centennial President Fellowship, Oklahoma State University
1990	Skinner Fellowship, Oklahoma State University
1990	Outstanding Senior Student Majoring in Chemistry, American Institute of Chemists Foundation

**PROFESSIONAL MEMBERSHIPS**

American Chemical Society  
 Blue Key Honor Society  
 Phi Lambda Upsilon, President of OSU chapter (1992-1993)  
 American Society for Mass Spectrometry

**COURSES TAUGHT**

PSCI 1114	General Physical Sciences
CHEM 1315	General Chemistry I
CHEM 1415	General Chemistry II
CHEM 2311	Chemical Literature
CHEM 3025	Introduction to Analytical Methods

CHEM 3425	Chemical Analysis
CHEM 3525	Instrumental Analysis
CHEM 4213	Advanced Analytical
CHEM 4562	Advanced Laboratory
CHEM 4951	Senior Seminar
CHEM 4990	Research
CHEM 5990	Graduate Research

## **PUBLICATIONS**

### ***Peer-reviewed Publications (in chronological order)***

- J. Cai, J. T. Smith, and Z. El Rassi, "Determination of the Ionization Constants of Weak Electrolytes by Capillary Zone Electrophoresis," *J. High Resol. Chromatogr.*, 15 (1992) 30-33.
- E. Levy, F. J. Gough, K. D. Berlin, P. W. Geno, and J. T. Smith, "Inhibition of *Septoria tritici* and other phytopathogenic fungi and bacteria by *Pseudomonas fluorescens* and its antibiotics," *Plant Pathology*, 41 (1992) 335-341.
- J. T. Smith and Z. El Rassi, "Capillary Zone Electrophoresis of Biological Substances with Surface-Modified Fused Silica Capillaries with Switchable Electroosmotic Flow," *J. High Resol. Chromatogr.*, 15 (1992) 573-578.
- J. T. Smith and Z. El Rassi, "Capillary zone electrophoresis of biological substances with fused-silica capillaries having zero or constant electroosmotic flow," *Electrophoresis*, 14 (1993) 396-406.
- W. Nashabeh, J. T. Smith, and Z. El Rassi, "Studies in Capillary Zone Electrophoresis with a Post-Column Multiple Capillary Device for Fraction Collection and Stepwise Increase in the Electroosmotic Flow during Analysis," *Electrophoresis*, 14 (1993) 407-416.
- J. T. Smith, A. Mackie, S. Van Waggoner, G. Gandy, M. Washburn, R. Self, A. Horn, J. L. Kiel, and J. R. Wright, "Chemiluminescent Dosimetry of Microwave Heating and Acoustic Irradiations Based on Luminol and Metal Oxide Catalyst," *Microchemical J.*, 47 (1993) 197-205.
- J. T. Smith, W. Nashabeh, and Z. El Rassi, "Micellar Electrokinetic Capillary Chromatography *In Situ* Charged Micelles. 1. Evaluation of *N*-D-gluco-*N*-methylalkanamide Surfactants as Anionic Borate Complexes," *Analytical Chemistry*, 66 (1994) 1119-1133.
- J. T. Smith and Z. El Rassi, "Micellar Electrokinetic Capillary Chromatography *In Situ* Charged Micelles. 2. Evaluation and Comparison of Octylmaltoside and Octanoylsucrose Surfactants as Anionic Borate Complexes in the Separation of Herbicides," *J. Microcol. Sep.*, 6 (1994) 127-138.
- J. T. Smith and Z. El Rassi, "Micellar Electrokinetic Capillary Chromatography *In Situ* Charged Micelles. 3. Evaluation of Alkylglucoside Surfactants as Anionic Butylboronate Complexes," *Electrophoresis*, 15 (1994) 1248-1259.
- J. T. Smith and Z. El Rassi, "Micellar Electrokinetic Capillary Chromatography *In Situ* Charged Micelles. 4. Influence of the Nature of the Alkylglycoside Surfactant," *J. Chromatogr.*, 685 (1994) 131-143.

- J. T. Smith and Z. El Rassi, "Micellar Electrokinetic Capillary Chromatography *In Situ* Charged Micelles. 5. Evaluation of Background Fluorophores for Indirect Fluorescence Detection," *J. Cap. Elec.*, 2 (1994) 136-143.
- J. T. Smith and D. V. Vinjamoori, "Rapid Determination of Logarithmic Partition Coefficients Between Octanol and Water Using Micellar Electrokinetic Capillary Chromatography," *J. Chromatogr. B*, 669 (1995) 59-66.
- Y. Merchref, J. T. Smith and Z. El Rassi, "Micellar Electrokinetic Capillary Chromatography with *In Situ* Charged Micelles. VII Expanding the Utility of Alkylglycoside-borate Micelles to Acidic and Neutral pH," *J. Liq. Chromatogr.*, 18 (1995) 3769-3786 .
- J. T. Smith, "Developments in Amino Acids Analysis using Capillary Electrophoresis," *Electrophoresis*, 17 (1997) 2377-2392.
- L. Maddox, M. Reeves, K. Wood, K. Roberts, J. Studer, J. Wetzel, J. T. Smith, K. Whittington, J. L. Alls, J. E. Parker, E. Holwitt, J. Kiel, and J. R. Wright, "Acoustic Wave Dosimetry Based on Diazotized Luminol Solutions," *Microchemical J.*, 58 (1998) 209-217.
- J. R. Wright, J. Kiel, E. Holwitt, J. T. Smith, K. Roberts, J. Studer, C. Mclemore, K. Campbell, B. Russo, K. Wood, "Preliminary characterization of a polymer prepared by diazotization of 3-amino-L-tyrosine," *Polymer Preprints*, 39 (1998) 365-366.
- D. J. Allen, W. E. Wall, K. D. Denson, and J. T. Smith, "Adjusting Selectivity in Micellar Electrokinetic Capillary Chromatography with 1,2-Hexanediol," *Electrophoresis*, 20 (1999) 100-110.
- W. E. Wall, K. D. Denson, D. J. Allen, G. I. Love, and J. T. Smith, "Explorations of Alkyl Polyols as Class I Organic Modifiers to Adjust Selectivity in Micellar Electrokinetic Capillary Chromatography," *Electrophoresis*, 20 (1999) 2390-2399.
- J. T. Smith, "Recent Advancements in Amino Acid Analysis using Capillary Electrophoresis," *Electrophoresis*, 20 (1999) 3078-3083.
- D. J. Allen, J. C. Gary, N. L. Paiva, and J. T. Smith, "An Enantiomer Assay for Flavonoids Medicarpin and Vestitone using Capillary Electrophoresis," *Electrophoresis*, 21 (2000) 2051-2057.
- B. R. Baggett, J. D. Cooper, E. T. Hogan, J. Carper, N. L. Paiva, and J. T. Smith, "Profiling Isoflavonoids Found in Legume Root Extracts using Capillary Electrophoresis," *Electrophoresis*, 23 (2002) 1642-1651.
- V. M. Russo, J. K. Collins, P. Perkins-Veazie, and J. T. Smith, "Carbohydrate Distribution in Stalks and Ears of Sweet Mazie with Different Endosperm Genotypes," *Cereal Research Communications*, 32 (2004) 91-98.
- C. D. Broeckling, D. V. Huhman, M. Farag, J. T. Smith, G. D. May, P. Mendes, R. A. Dixon, and L. W. Sumner, "Metabolic profiling of *Medicago truncatula* cell cultures reveals effects of biotic and abiotic elicitors on metabolism," *J. Experimental Botany*, 56 (2005) 323-336.
- B. J. Williams, C. J. Cameron, R. Workman, C. D. Broeckling, L. W. Sumner, and J. T. Smith, "Amino acid profiling in plant cell cultures: An inter-laboratory comparison of CE-MS and GC-MS," *Electrophoresis*, 28 (2007) 1371-1379.
- A. J. Fabich, S. A. Jones, F. Z. Chowdhury, A. Cernosek, A. Anderson, D. Smalley, J. W. McHargue, G. A. Hightower, J. T. Smith, S. M. Autieri, M. P. Latham, J. J. Lins, R. L. Allen, D. C. Laux, P. S. Cohen, and T. Conway, "Comparison of Carbon Nutrition for Pathogenic and Commensal *Escherichia coli* Strains in the Mouse Intestine," *Infection and Immunity*, 76 (2008) 1143-1152.

M. F. Traxler, S. M. Summers, H.-T. Nguyen, V. M. Zacharia, G. A. Hightower, J. T. Smith, and T. Conway, "The global, ppGpp-mediated stringent response to amino acid starvation in *Escherichia coli*", *Molecular Microbiology*, 68 (2008) 1128-48.

### **Books**

Z. El Rassi and J. T. Smith, "Other Direct and Indirect Detection Methods of Carbohydrates in HPLC and HPCE," *Carbohydrate Analysis: High Performance Liquid Chromatography and Capillary Electrophoresis*, Z. El Rassi (Editor), Journal of Chromatography Library-volume 58, Elsevier, Amsterdam, copyright 1995.

L. W. Sumner, A. L. Duran, D. H. Huhman, and J. T. Smith, "Metabolomics: A Developing and Integral Component on Functional Genomic Studies of *Medicago truncatula*", in *Recent Advances in Phytochemistry - Phytochemistry in the Genomics and Post-genomics Era*, Vol 36, John T. Romeo (Editor), 2002, Elsevier.

### **Published Abstracts and Other Publications of Non-Refereed Journal Articles**

Dr. Smith has presented research at over 50 conferences at the state, national, and international level. Undergraduate students in the Smith Research Lab have presented more than 200 posters and oral presentations at state, national, and international conferences.

### **RECENT FUNDING**

#### **Ongoing Research Support**

None.

#### **Ongoing Support**

None.

#### **Completed Research Support**

Organized Research – Profession Development, Turning Technologies User Meeting  
March 30 – April 1, 2014, Las Vegas, NV.

1126719, Sumner, Lloyd (PI)

09/01/11 – 08/31/14

NSF/DBI

MRI: Acquisition of a 600 MHz NMR

Role: co-PI

The goal of this project was to acquire a high-field NMR to be integrated with UPLC-MS-SPE technology to enable high throughput chemical annotation in plant metabolomics.

2 P20 RR016478-09 Waxman, Frank (PI)

sub-project dates 5/1/09-4/30/10

NIH/EPSCoR/INBRE

Capillary electrophoresis of glycans

Role: P.I. – mini-grant research program

The overall goal of this project was to explore the application of capillary electrophoresis in the analysis of model glycans.

2 P20 RR016478-08 Waxman, Frank (PI)

sub-project dates 5/1/08-4/30/09

NIH/EPSCoR/INBRE

Metabolism of *E. coli*

Role: P.I. - Collaborative research program

The overall goal of this project is to determine the carbohydrate nutritional preference of various strains of *E. coli* using in vitro and in vivo models. The role of JTS on this collaborative project is to develop the required bio-analytical assays.

### **RECENT PRESENTATIONS**

- Joel T. Smith, “Piloting a Flipped Format Upper Level Chemistry Course”, oral presentation at the Oklahoma Pentasectional ACS meeting at Cameron University on March 24th, 2017.
- Joel T. Smith, “Piloting a Flipped Format Upper Level Chemistry Course”, oral presentation at at Northwestern Oklahoma State University on March 3rd, 2017.
- Joel T. Smith and Karl Frinkle, “Student Engagement: Interactive Learning with Audience”; Faculty Symposium-SE, August 12, 2014.
- Joel T. Smith, “Using Lecture Videos in Hybrid Format classes”; Faculty Symposium-SE, August 13, 2013.
- Joel T. Smith. “ Clickers – Using the Turning Hardware”, SOLD-SE, January 8, 2014.
- Joel T. Smith, “Student Response Devices to Promote Student Learning”; Faculty Symposium-SE, August 12, 2014.
- Joel T. Smith, Ying Lin, and Robert Howard. “Faculty Workshop - Clickers”, CIDT-SE, September 18, 2014.