

# Letha J. Sooter, Ph.D.

---

---

West Virginia University  
Room 213, Biomedical Research Facility  
PO Box 9530  
Morgantown, WV 26506

Phone: 304.293.9218  
Fax: 304.293.2576  
E-mail: lsooter@hsc.wvu.edu  
Website: www.sooterlab.org

---

---

## **Professional Experience**

- June 2010 – present      Tenure-track assistant professor at West Virginia University, Health Sciences Center, School of Pharmacy, Department of Basic Pharmaceutical Sciences. Research focus on *in vitro* selections and biomolecule interactions with materials.
- Spring 2008      Appointed as regular member of the graduate faculty for the Eberly College of Arts & Sciences.
- Fall 2008 - present      Adjunct Faculty status in the WVU Eberly College of Arts and Sciences, Department of Chemistry
- June 2008 – present      Member of WVNano Initiative
- June 2008 – May 2010      Tenure-track assistant professor at West Virginia University in the Department of Biology. Research focus on *in vitro* selections and biomolecule interactions with materials.
- September 2006 – May 2008      Postdoctoral fellow with Dr. Dimitra Stratis-Cullum at the US Army Research Laboratory, Optics Branch. Selection of nucleic acid and peptide binding species for detection of biological, chemical, and explosive warfare agents. Design and development of handheld assay system for detection of warfare agents.
- May 2007 – September 2007      Postdoctoral scholar with Dr. Jill Banfield at the University of California, Berkeley, in the Department of Earth and Planetary Sciences. Evolution of life for Mars.
- December 2004 – August 2006      Postdoctoral associate with Dr. K. Dane Wittrup, Department of Chemical Engineering, funded by Dr. Angela M. Belcher, Department of Materials Science and Engineering, at the Massachusetts Institute of Technology. Yeast cell surface display selections against surfaces and surface defects.
- 1999 – 2004      Graduate Research Assistant with Dr. Andrew D. Ellington, Department of Chemistry and Biochemistry at the University of Texas at Austin. Automated *in vitro* selections.
- Fall 2001      Teaching Assistant for Fundamentals of Biochemistry.
- Fall 1999, Spring 2000      Teaching Assistant for Introduction to Chemical Practices.
- June 1999 – August 1999      Research Technician with Dr. Dean R. Appling, Department of Chemistry and Biochemistry at the University of Texas at Austin. Folate metabolism in *S. cerevisiae*.
- May 1998 – May 1999      Undergraduate Research with Dr. Sherry J. Yennello, Department of Chemistry at Texas A&M University, The Cyclotron Institute. The effects of high energy particles on DNA *in vitro*.

- Fall 1996 – Spring 1998 Undergraduate Research with Dr. Donald W. Pettigrew, Department of Biochemistry and Biophysics at Texas A&M University. The mechanism of fructose-1,6-bisphosphate inhibition of *E. coli* glycerol kinase.
- May 1994 – August 1994 High School Summer Job: English as a second language teacher in Kuala Lumpur, Malaysia.
- May 1992 – August 1992 High School Summer Job: English as a second language teacher in Tokyo, Japan.

### **Education**

- 1999 – 2004 Ph.D. in biochemistry at the University of Texas at Austin in Austin, Texas. Graduate Advisor: Andrew D. Ellington. Dissertation: Automation of *in vitro* selections.
- 1995 – 1999 B.S. in biochemistry and genetics with a chemistry minor at Texas A&M University in College Station, Texas.

### **Publications and Patents**

Jourdan T. Aromin, Bridget D. Hines, **Letha J. Sooter**. Tuning Single-Walled Carbon Nanotube Fluorescence Emission via Associated DNA Sequence. *Mountaineer Undergraduate Research Review*, Volume 2, Spring 2010. Peer Reviewed.

**Sooter, L.J.**; Stratis-Cullum, D.N. Book Chapter. In *Nanoscience and Nanotechnology for Chemical and Biological Defense*; Ramanathan, N., Ed.; ACS Symposium Series: Oxford University Press: 2010.

**Sooter, L.J.** Purification of Carbon Nanotubes. United States Army Docket Number ARL 08-14. Patent application number US 20100105880 A1. 2010.

**Sooter, L.J.** Quantum Dot Biotags. United States Army Docket Number ARL 08-13. Patent application number US 20100105089 A1. 2010.

**Letha J. Sooter**, Dimitra N. Stratis-Cullum, Yanting Zhang, Patrick Daugherty, H. Tom Soh, Paul M. Pellegrino, Nancy Stagliano. Affinity reagent technology development and application to rapid immunochromatographic pathogen detection. *Proceedings of SPIE: Smart Biomedical and Physiological Sensor Technology V*. SPIE paper number 6759-10.

**Letha J. Sooter**, Sun McMasters, and Dimitra N. Stratis-Cullum. Application of capillary electrophoresis to the development and evaluation of aptamer affinity probes. *Proceedings of SPIE: Smart Biomedical and Physiological Sensor Technology V*. SPIE paper number 6759-31.

Stratis-Cullum, D.N.; McMasters, S.; **Sooter, L.J.**; Pellegrino, P.M. Investigation of Synthetic Molecular Recognition for Biosensing Applications. *Proceedings of SPIE: Chemical and Biological Sensing VIII*. 2007, v6554.

Belcher, A.M.; **Sooter, L.J.**; Wittrup, K.D. Detection of Cracks in Metal Alloys Using Fluorescent Peptides. 2006. Invention disclosure, M.I.T. Case No. 12312.

**Sooter, L.J.**; Gates-Shannon, P.; Ellington, A.D. Automated assessment the DNA-binding capacity of a proteome by *in vitro* selection. *Journal of the Association for Laboratory Automation*. 2007, 12(3), 135-142.

**Sooter, L.J.**; Ellington, A.D. Automated Selection of Transcription Factor Binding Sites. *Journal of the Association for Laboratory Automation*. 2004, 9(5), 277-284.

**Sooter, L.J.**; Ellington, A.D. Reflections on a Novel Therapeutic Candidate. *Chemistry & Biology*. 2002, 9(8), 857-858.

Cox, J.C.; Rajendran, M.; Riedel, T.; Davidson, E.A.; **Sooter, L.J.**; Bayer, T.S.; Schmitz-Brown, M.; Ellington, A.D. Automated acquisition of aptamer sequences. *Combinatorial Chemistry and High Throughput Screening*. 2002, 5(4), 289-299.

**Sooter, L.J.**; Riedel, T.; Davidson, E.A.; Levy, M.; Cox, J.C.; Ellington, A.D. Toward automated nucleic acid enzyme selection. *Biological Chemistry*. 2001, 382(9), 1327-1334.

Ellington, A.D.; Hesselberth, J.; Marshall, K.; Robertson, M.; **Sooter, L.**; Davidson, E.; Cox, J.C.; Reidel, T.; Wilson, C.; Cload, S.T.; Keefe, A.D. Regulatable, catalytically active nucleic acids. United States Patent Application Number 20040126882. Royalty received.

Ellington, A.D.; Hesselberth, J.; Marshall, K.; Robertson, M.; **Sooter, L.**; Davidson, E.; Cox, J.C.; Reidel, T. Allosterically Regulated Ribozymes. Intellectual Property Publication Number: WO/2001/096541.

Ellington, Andrew D.; Hesselberth, Jay; Marshall, Kristin A.; Robertson, Michael P.; **Sooter, Letha**; Davidson, Eric; Cox, J. Colin; Reidel, Timothy. Regulatable, catalytically active nucleic acids. United States Patent Application Number US20030104520.

## **Teaching and Advising**

Fall 2008

- BIOL 386 – Summer Lea Kuhn
- Undergraduate Volunteer then Undergraduate Worker – Jeff Nichols-Haining
- Doctoral Student Co-Advisor to Heaven Oliver-Kozup through a WV EPSCoR STEM Cancer Nanotechnology Fellowship studying Streptococcal collagen-like protein 1 (Scl1)-mediated binding of plasma complement regulatory protein, Factor H.

Spring 2009

- Molecular Recognition Elements and Sensors, 3 credit hour lecture (BIOL 493M/593F)
- Introduction to Nanotechnology, Biology segment, one third of 3 credit hour lecture and lab (PHYS 293K/ENGR 493E)
- BIOL 386 – Summer Lea Kuhn, Sadar Musa Shah-Khan, Jourdan Tyler Aromin, Andrew Dolphus Myers
- BIOL 491– Briana Dawn Vecchio
- Undergraduate Worker – Jeff Nichols-Haining
- WV EPSCoR STEM Cancer Nanotechnology Fellowship Student Co-Advisor: Heaven Oliver-Kozup
- Workstudy: Allison K. Conte

Summer 2009

- WVNano Research Experience for Undergraduates (WVNano REU) – Amanda Wriston (WV Wesleyan) and Briana Wallace (Carnegie Mellon)
- WVNano Summer Undergraduate Research Experience (WVNano SURE) – Brandi Findley and Saba Ashfaq
- Doctoral Student Advisor: Anthony Stephen Giovengo
- WV EPSCoR STEM Cancer Nanotechnology Fellowship Student Co-Advisor: Heaven Oliver-Kozup

Fall 2009

- BIOL 386 –Andrew Dolphus Myers (Biology), Ian Douglas, Casey Nassif (Biology), Brandi Findley (Biology)
- BIOL 491– Briana Dawn Vecchio (Chemistry/Biochemistry)
- BIOL 486 - Sadar Musa Shah-Khan (Biology), Jourdan Tyler Aromin (Biology)
- Doctoral Student Advisor: Anthony Stephen Giovengo (Biology)
- Master Student Advisor: Smita Singh (Biology)
- Postdoctoral Associate Advisor: Bridget D. Hines
- Committee Member of: Anna Snyder (Biology, Ph.D.)
- WV EPSCoR STEM Cancer Nanotechnology Fellowship Student Co-Advisor: Heaven Oliver-Kozup
- Workstudy: Amanda Kulick

Spring 2010

- Molecular Recognition Elements and Sensors, 3 credit hour lecture (BIOL 493M/593F)
- Introduction to Nanotechnology, Biology segment, one third of 3 credit hour lecture and lab (PHYS 293K/ENGR 103)
- BIOL 386 – Andrew Dolphus Myers (Biology), Ian Douglas
- BIOL 486 - Casey Nassif (Biology), Sadar Musa Shah-Khan (Biology), Jourdan Tyler Aromin (Biology)

- BIOL 491– Briana Dawn Vecchio
- Doctoral Student Advisor: Anthony Stephen Giovengo (Biology), Ryan Martin Williams (Biology)
- Master Student Advisor: Smita Singh (Biology)
- Postdoctoral Associate Advisor: Bridget D. Hines
- Committee Member of: Anna Snyder (Biology, Ph.D.)
- Workstudy: Amanda Kulick

#### Summer 2010

- WVNano Summer Undergraduate Research Experience (WVNano SURE) – Brandi Findley
- Doctoral Student Advisor: Anthony Stephen Giovengo (Biology), Ryan Martin Williams (Biology)
- Master Student Advisor: Smita Singh (Biology)
- Postdoctoral Associate Advisor: Bridget D. Hines
- Undergraduate Volunteers: Jackson Thomas, Garret Rhodes
- Committee Member of: Anna Snyder (Biology, Ph.D.), Nissa Thomsen (PPS, M.D./Ph.D.), Katherine M. Hickey (PPS, Ph.D.)
- Workstudy: Amanda Kulick

#### Fall 2010

- Doctoral Student Advisor: Anthony Stephen Giovengo (PPS), Ryan Martin Williams (PPS)
- Undergraduate Volunteers: Jackson Thomas, Garret Rhodes
- BIOL 486 - Casey Nassif (Biology), Sadar Musa Shah-Khan (Biology), Jourdan Tyler Aromin (Biology), Ian Douglas (Medical Laboratory Science)
- ChE 495 – Garret Rhodes (Chemical Engineering)
- ENGR 491 – Jackson Thomas (Freshman Engineering)
- Committee Member of: Anna Snyder (Biology, Ph.D.), Nissa Thomsen (PPS, M.D./Ph.D.), Katherine M. Hickey (PPS, Ph.D.)
- Workstudy: Amanda Kulick

### **Lectures and Seminars**

26 August 2008 – WVU - Guest Lecture for CHEM 516 entitled “Fluorescence and its applications in biochemistry”

16 September 2008 – WVU - Seminar in Nanoscience (Phys 691) entitled “Molecular Recognition Elements and Sensors”

24 September 2008 – WVU - Chemistry colloquia entitled “Molecular Recognition Elements and Sensors”

14 November 2008 - WVU - Junior Nanotechnology Seminar (ENGR 493J) entitled "Molecular Recognition Elements and Sensors"

02 February 2009 – WVU - Biology seminar entitled “Not-So-Natural Selection”

6 March 2009 - WVU - Guest lecture for Boyd Edward's Sophomore Nanotechnology course

15 April 2009 - Invited Talk, Charleston, WV - STaR symposium 2009 pannel member. Explosives expert for "Security & Intelligence" panel.

11 May 2009 - WVU - WVNano Initiative Research Symposium entitled "Sensing Applications for Molecular Recognition Elements.

Fall 2009 - WVU - Junior Nanotechnology Seminar (ENGR 493J)

Spring 2010 – WVU – School of Pharmacy Seminar

1 September 2010 – Lecture for Nanotechnology Seminar (PHAR 794J)

### **Service**

- Army Research Office; Reviewer
- PITTCON 2008 symposia organizers and chairs: Dimitra Stratis-Cullum and Letha J. Sooter. “Detection of Chemical and Biological Hazards in Food”.
- Fall 2008 – Summer 2009: WVU Biology Department Graduate Committee
- Fall 2008 – Summer 2009: WVNano Graduate Education Committee
- Spring 2009 – Attended National Conference for EPSCoR / IDeA States
- Spring 2009 – Spoke with United States Senate Commerce Committee senior staff regarding nanotechnology
- Summer 2009 – WVNano SURE – Brandi Findley and Saba Ashfaq
- Summer 2009 – WVNano REU – Briana Wallace and Amanda Wriston
- Fall 2009 – Summer 2010: WVU Biology Department Curriculum Committee
- Fall 2009 – Summer 2010: WVNano Graduate Education Committee
- Summer 2010 – Summer 2011: WVU Basic Pharmaceutical Sciences Faculty Evaluation Committee
- Spring 2010 – Judge for oral presentations at the meeting of the West Virginia Academy of Sciences.

- Summer 2010– WVNano SURE – Brandi Findley

### **Abstracts and Symposia**

- 2008 Chemical and Biological Defense, Physical Science and Technology Conference oral presentation. “Molecular Recognition Element Development with Applications to Pathogen Detection via Hand Held Assays” authored by **Letha J. Sooter**, Dimitra N. Stratis-Cullum, Jeffrey Rice, John Ballew, Yanting Zhang, Patrick Daugherty, Tom Soh, Paul M. Pellegrino, and Nancy Stagliano. November, 2008. Submitted.
- 234<sup>th</sup> ACS National Meeting oral presentation. “Rapid Immunochromatographic Biowarfare Detection Using Affinity Reagents from Microfluidic *in vitro* Selections” authored by **Letha J. Sooter**, Dimitra N. Stratis-Cullum, Yanting Zhang, Patrick Daugherty, Tom Soh, Paul M. Pellegrino, and Nancy Stagliano.
- SPIE Optics East 2007 oral presentation. “Affinity Reagent Technology Development and Application to Rapid Immunochromatographic Pathogen Detection” authored by **Letha J. Sooter**, Dimitra N. Stratis-Cullum, Yanting Zhang, Patrick Daugherty, Tom Soh, Paul M. Pellegrino, and Nancy Stagliano.
- SPIE Optics East 2007 poster presentation. “Application of capillary electrophoresis to the development and evaluation of aptamer affinity probes” authored by **Letha J. Sooter**, Sun McMasters and Dimitra N. Stratis-Cullum.
- Institute for Collaborative Biotechnologies 2006 poster presentation. “Detection of airplane cracks using a fluorescent peptide” authored by **Letha J. Sooter**, Angela M. Belcher, and K. Dane Wittrup
- Institute for Collaborative Biotechnologies 2005 poster presentation. “Yeast display selections against surfaces” authored by **Letha J. Sooter**, Angela M. Belcher, and K. Dane Wittrup.
- LabAutomation 2004 poster presentation. “Automated selection of transcription factor binding sites” authored by **Letha J. Sooter** and Andrew D. Ellington.
- LabAutomation 2002 poster presentation. “Toward Automated Nucleic Acid Enzyme Selection” authored by **Letha J. Sooter**, Timothy Riedel, Eric A. Davidson, Matthew Levy, J. Colin Cox and Andrew D. Ellington.
- LabAutomation 2001 poster presentation “Automated Nucleic Acid Selection” authored by J. Colin Cox, Travis S. Bayer, Timothy Riedel, **Letha J. Sooter**, Eric A. Davidson, Gwendolyn Motz, Carlos A. Garcia and Andrew D. Ellington.
- Texas A&M University Undergraduate Research Oral Presentation “The mechanism of fructose-1,6-bisphosphate inhibition of *E. coli* glycerol kinase” authored by **Letha J. Sooter** and Donald Pettigrew.

### **2009 Student Presentations and Publications**

- 2009 West Virginia Science Technology and Research (STaR) Symposium poster presentation. In-Vitro Selection of TNT Explosive via Single-Stranded DNA Molecular Recognition Elements for Use in Biosensor Devices. Briana D. Vecchio and **Letha J. Sooter**. First place undergraduate poster competition with \$1200 award.
- 2009, April 15, West Virginia Science Technology and Research (STaR) Symposium poster presentation. In-Vitro Selection Against Melamine Using Molecular Recognition Elements. Sardar Musa Shah-Khan, Jourdan T. Aromin, Briana D. Vecchio, and **Letha J. Sooter**. One of 16 undergraduates chosen from the state of WV.
- 2009, April 18, WVU American Chemical Society Research Poster Competition. In-Vitro Selection Against Melamine Using Molecular Recognition Elements. Sardar Musa Shah-Khan, Jourdan T. Aromin, Briana D. Vecchio, and **Letha J. Sooter**.
- 2009, April 18, WVU American Chemical Society Research Poster Competition. Generation of Molecular Recognition Elements Through In Vitro Selection for Atrazine Detection. Jourdan T. Aromin, Sardar Musa Shah-Khan, Briana D. Vecchio, and **Letha J. Sooter**.
- 2009 WVU American Chemical Society Research Poster Competition. In Vitro Selection Against a CdSe/ZnS Quantum Dot Using Yeast Cell Surface Peptide Display. Andrew Myers and **Letha J. Sooter**.
- 2009 WVNano Symposium poster presentation. In-Vitro Selection of TNT Explosive via Single-Stranded DNA Molecular Recognition Elements for Use in Biosensor Devices. Briana D. Vecchio and **Letha J. Sooter**. Third place undergraduate poster competition.
- 2009 WVNano Symposium poster presentation. Yeast Peptide Display Selections Against Explosives for Sensor Use. Jeffrey T. Nichols-Haining and **Letha J. Sooter**.
- 2009, April 29, WVNano Brown Bag Lunch Series oral presentation. Isolating Molecular Recognition Elements Through In Vitro Selections. Jourdan T. Aromin, Sardar Musa Shah-Khan, Briana D. Vecchio, and **Letha J. Sooter**.
- 2009 WVNano Brown Bag Lunch Series oral presentation. In Vitro Selection Against a CdSe/ZnS Quantum Dot Using Yeast Cell Surface Peptide Display. Andrew Myers and **Letha J. Sooter**.
- 2009, July 29, Summer Undergraduate Research Symposium poster presentation. *In Vitro* Selections for Molecular Recognition Elements for Melamine and Quantum Dots. Amanda S. Wriston and **Letha J. Sooter**.

- 2009, July 29, Summer Undergraduate Research Symposium poster presentation. *In Vitro* Selection of Molecular Recognition Elements for 2,4-D Acid and Quantum Dots to Use in Biosensors. Briana Wallace and **Letha J. Sooter**.
- 2009, July 29, Summer Undergraduate Research Symposium poster presentation. *In Vitro* Selection of Atrazine and Quantum Dots via Molecular Recognition Elements. Brandi N. Findley and **Letha J. Sooter**.
- 2009, July 29, Summer Undergraduate Research Symposium poster presentation. Saving the Environment Two Steps at a Time: MRE for DEET and Biodiesel Analysis . Saba Ashfaq and **Letha J. Sooter**.

### **2010 Student Presentations and Publications**

- 2010, January 28, Undergraduate Research Day at the Capitol poster presentation. Generation of Molecular Recognition Elements Through *In Vitro* Selection for Single-Walled Carbon Nanotubes. Jourdan T. Aromin, Bridget D. Dolash, and **Letha J. Sooter**.
- 2010, January 28, Undergraduate Research Day at the Capitol poster presentation. *In Vitro* Selection Against Melamine Using Molecular Recognition Elements. Sardar Musa Shah-Khan, Jourdan T. Aromin, Briana D. Vecchio, and **Letha J Sooter**.
- 2010, January 28, Undergraduate Research Day at the Capitol poster presentation. *In Vitro* Selection of Molecular Recognition Elements against Superparamagnetic Iron Oxide Nanoparticles. Casey Nassif and **Letha J. Sooter**.
- 2010, January 28, Undergraduate Research Day at the Capitol poster presentation. The *in vitro* World of Functional Molecules. Ian P. Douglas and **Letha J. Sooter**.
- 2010, January 28, Undergraduate Research Day at the Capitol poster presentation. Andrew D. Myers and **Letha J. Sooter**.
- 2010, American Chemical Society Spring National Meeting poster presentation. Briana D. Vecchio and Letha J. Sooter.
- 2010, American Chemical Society Spring National Meeting poster presentation. Bridget D. Hines and Letha J. Sooter.
- 2010, March 20, WVU American Chemical Society Research Poster Competition. *In vitro* Selection of SPIONs. Ian P. Douglas and **Letha J. Sooter**.
- 2010, March 20, WVU American Chemical Society Research Poster Competition. *In Vitro* Selection Against a CdSe/ZnS Quantum Dot Using Yeast Cell Surface Peptide Display. Andrew Myers and **Letha J. Sooter**. Awarded 2<sup>nd</sup> Prize for undergraduate posters with \$50 cash award.
- 2010, March 20, WVU American Chemical Society Research Poster Competition. Detection of molecular recognition elements using yeast library of surface displayed peptides. Casey Nassif and **Letha J. Sooter**.
- 2010, March 20, WVU American Chemical Society Research Poster Competition. Single-Walled Carbon Nanotube Fluorescence as a Method of Molecular Detection. Jourdan T. Aromin, Bridget D. Dolash, and Letha **J. Sooter**. Awarded 1<sup>st</sup> Prize for undergraduate posters with \$100 cash award.
- 2010, March 20, WVU American Chemical Society Research Poster Competition. *In Vitro* Selection Against Melamine Using Molecular Recognition Elements. Sardar Musa Shah-Khan, Jourdan T. Aromin, Briana D. Vecchio, and **Letha J Sooter**.
- 2010, March 27, The College of William and Mary 9<sup>th</sup> Annual Graduate Research Symposium oral presentation. Anthony S. Giovengo and **Letha J. Sooter**.
- 2010, April 9, WVNano Brown Bag Lunch Series oral presentation. *In Vitro* Selection Against Melamine. Sardar Musa Shah-Khan and **Letha J. Sooter**.
- 2010, April 9, WVNano Brown Bag Lunch Series oral presentation. *In Vitro* Selection Against a CdSe/ZnS Quantum Dot Using a Yeast Surface Display Library. Andrew Myers and **Letha J. Sooter**.
- 2010, April 10, 85<sup>th</sup> Annual Meeting of the West Virginia Academy of Science poster presentation. *In vitro* Selection of Superparamagnetic Iron Oxide Particles. Ian P. Douglas, Bridget D. Hines, and **Letha J. Sooter**.
- 2010, April 10, 85<sup>th</sup> Annual Meeting of the West Virginia Academy of Science poster presentation. Superparamagnetic Iron Oxide Nanoparticle Detection Using Yeast Library of Surface Displayed Peptides. Casey Nassif and **Letha J. Sooter**.
- 2010, April 10, 85<sup>th</sup> Annual Meeting of the West Virginia Academy of Science poster presentation. Use of optical properties to probe the interaction of molecular recognition elements with single-walled carbon nanotubes. Bridget D. Hines, Jourdan T. Aromin and **Letha J. Sooter**.
- 2010, April 20, WVNano Research Symposium poster presentation. *In Vitro* Selection Against Single-Walled Carbon Nanotube Chiralities. Jourdan T. Aromin, Bridget D. Dolash, and **Letha J. Sooter**.
- 2010, April 20, WVNano Research Symposium poster presentation. Detection of molecular recognition elements using yeast library of surface displayed peptides. Casey Nassif and **Letha J. Sooter**. Awarded second place among all graduate and undergraduate posters.

- 2010, April 20, WVNano Research Symposium poster presentation. Molecular Recognition Element Selection of SPIONs. Ian P. Douglas, Bridget D. Hines and **Letha J. Sooter**.
- 2010, April 20, WVNano Research Symposium poster presentation. In Vitro Selection Against a CdSe/ZnS Quantum Dot Using Yeast Cell Surface Peptide Display. Andrew Myers and **Letha J. Sooter**.
- 2010, April 20, WVNano Research Symposium poster presentation. In-Vitro Selection Against Melamine Using Molecular Recognition Elements. Sardar Musa Shah-Khan, Jourdan T. Aromin, Briana D. Vecchio, and **Letha J. Sooter**.
- 2010, April 20, WVNano Research Symposium poster presentation. Evolution of Single-Stranded DNA Molecular Recognition Elements via CE-SELEX: Detection of TNT and Biosensor Applications. Briana D. Vecchio and **Letha J. Sooter**.
- 2010, April 20, WVNano Research Symposium poster presentation. Prostate Cancer Detection by Molecular Recognition Elements and Environmental Toxicity of Single-Walled Carbon Nanotubes. Ryan M. Williams and **Letha J. Sooter**.
- 2010, April 20, WVNano Research Symposium poster presentation. Applications of CE-SELEX: Isolation of Molecular Binding Elements Against Nitroamine Explosives. Anthony S. Giovengo and **Letha J. Sooter**.
- 2010, April 20, WVNano Research Symposium poster presentation. Artificial selection of *Escherichia coli*, *Deinococcus radiodurans* and *Methanobacterium formicicum* for its potential uses on Mars. Smita Singh and **Letha J. Sooter**.
- 2010, April 23, WVNano Brown Bag Lunch Series oral presentation. In Vitro Selection of Molecular Recognition Elements via Yeast Library. Casey Nassif and **Letha J. Sooter**.
- 2010, April 23, WVNano Brown Bag Lunch Series oral presentation. Use of *in vitro* Selection for SPIONs. Ian P. Douglas, Bridget D. Hines and **Letha J. Sooter**.
- 2010, July 29, Summer Undergraduate Research Symposium poster presentation. Classification of epidermal bacteria via 16S rRNA clonal analysis for forensic human identification. Brandi N. Findley and **Letha J. Sooter**.
- Briana D. Vecchio. Capillary Electrophoresis: A Method for Evolution and Analysis of Molecular Recognition Elements. *Mountaineer Undergraduate Research Review*, Volume 2, Spring 2010. Peer Reviewed.
- 2010, November 12, WVNano Brown Bag Lunch Series oral presentation. Molecular Recognition Elements for Prostate Cancer Cells and Atrazine. Ryan Williams and **Letha J. Sooter**.
- 2010, October 1, School of Pharmacy Research Day poster presentation. Single-Walled Carbon Nanotubes as Sensors. Garret Rhodes, Ryan Williams, Bridget Hines, and **Letha J. Sooter**.
- 2010, October 1, School of Pharmacy Research Day poster presentation. *In Vitro* Selection Against Nitroamine Explosives Through Capillary Electrophoresis. Anthony Giovengo and **Letha J. Sooter**.
- 2010, October 1, School of Pharmacy Research Day poster presentation. Isolation of Antibody scFv Specific to PIN Cells. Ian Douglas, Ryan Williams, and **Letha J. Sooter**.
- 2010, October 1, School of Pharmacy Research Day poster presentation. Toxicity of Single-Walled Carbon Nanotubes to Algae. Jackson Thomas, Ryan Williams, and **Letha J. Sooter**.
- 2010, October 1, School of Pharmacy Research Day poster presentation. DNA Aptamers Against Single-Walled Carbon Nanotubes. Jourdan Aromin, Ryan Williams, and **Letha J. Sooter**.
- 2010, October 1, School of Pharmacy Research Day poster presentation. *In Vitro* Selection of Prostate Cancer-Specific and Pesticide Binding Elements. Ryan Williams and **Letha J. Sooter**.
- 2010, October 1, School of Pharmacy Research Day poster presentation. Melamine Molecular Recognition Elements. Sardar Musa Shah-Khan and **Letha J. Sooter**.
- 2010, October 1, School of Pharmacy Research Day poster presentation. Yeast Display Selection Against SPIONs. Casey Nassif and **Letha J. Sooter**.

### Hosted Seminars

- WVNano Colloquium: Dr. Brad Hall. The University of Texas at Austin. Integrating Undergraduate Education and Research Projects to Develop Aptamer Based Nucleic Acid Tools. March 15, 2010.
- WVNano Colloquium: Dr. Doran Smith. US Army Research Laboratory. Magnetic Resonance Force Microscopy, a Force Detected Magnetic Resonance MRI Technique. April 26, 2010.
- WVNano Colloquium: Dr. Paul Pellegrino. US Army Research Laboratory. Hazardous Material Detection at the Army Research Laboratory (ARL). November 11, 2010.

### Workshops and Training

- “Visual Basic for the Laboratory, Intermediate” Lab Automation 2002 conference. January 26-30, 2002. Palm Springs, CA.
- “Visual Basic for the Laboratory, Beginner” Lab Automation 2001 conference. Palm Springs, CA.

### **Awards and Honors**

- Featured as the first person to be on the cover of the Neuron, a publication of the West Virginia Higher Education Commission
- Academic Grant for LabAutomation 2002
- LabAutomation 2002, 2nd place poster presentation of “Toward Automated Nucleic Acid Enzyme Selection” authored by **Letha J. Sooter**, Timothy Riedel, Eric A. Davidson, Matthew Levy, J. Colin Cox and Andrew D. Ellington.