

CURRICULUM VITAE

**JUSTIN M. SIRRINE**

*Macromolecules Innovation Institute  
The Virginia Polytechnic and State University (Virginia Tech)  
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(860) 251-9730*

**EDUCATION**

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**VIRGINIA POLYTECHNIC AND STATE UNIVERSITY** **Blacksburg, VA**  
*Ph.D., Macromolecular Science and Engineering, 3.80/4.00* *Expected May 2018*

**LEHIGH UNIVERSITY** **Blacksburg, VA**  
*B.S., Materials Science and Engineering, 3.48/4.00* *May 2011*  
*B.S., Integrated Business and Engineering, 3.48/4.00* *May 2010*

**PROFESSIONAL EXPERIENCE**

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**Graduate Research Assistant** **August 2013 – Present**

- Virginia Polytechnic and State University, *Department of Chemistry*
- Advisor: Dr. Timothy E. Long

**Associate Investigator – Engineer** **June 2011 – August 2013**

- DuPont, *Central Research & Development*
- Supervisors: Dr. Benjamin W. Messmore, Dr. Andrew J. Duncan
- Manager: Dr. Carlonda L. Reilly

**Undergraduate Researcher** **May 2010 – August 2010**

- University of Memphis, *Department of Chemistry*
- NSF-REU in Nanomaterials and Biomaterials
- Advisor: Dr. Erno Lindner

**Intern – Failure Analysis** **May 2008 – August 2008**

- Hamilton Sundstrand (UTC), *Materials Science & Engineering*

**Intern – Energy Engineering** **May 2007 – August 2007**

- Trane, Inc. (*American Standard/Ingersoll-Rand*)

## CURRICULUM VITAE

### CORE SKILLS

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Polymer chemistry • step growth polycondensation • polyurethane synthesis • nuclear magnetic resonance spectroscopy • Fourier-transform infrared spectroscopy • Raman spectrometry • size exclusion chromatography • dynamic light scattering • thermogravimetric analysis • differential scanning calorimetry • photocalorimetry • dynamic mechanical analysis • rheology • photorheology • scanning electron microscopy • transmission electron microscopy • atomic force microscopy • cell culture

### TEACHING EXPERIENCE

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#### Graduate Student Teaching Assistant

*Macromolecular Sci & Eng I (MACR 5015)*

**August – December 2015**

- Designed and led weekly laboratory sessions to reinforce class concepts regarding polymer synthesis and characterization
- Graded exams and aided nine students on an as-needed basis

#### Graduate Student Teaching Assistant

*Organic Chemistry I (Chem 2535)*

**August – December 2014**

- Managed all course logistics and grading for 190 students
- Led weekly review sessions concerning general and organic chemistry concepts
- Lectured in Prof. Timothy E. Long's absence
- Aided in the design of weekly quizzes, midterms, and final examination
- Graded exams, weekly homework assignments, and quizzes

### SERVICE AND LEADERSHIP

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Member – ACS Graduate Student Symposium Planning Committee	2016-present
Treasurer – Virginia Tech ACS POLY/PMSE Student Chapter	2016-present
Lab Instructor – ACS Polymer Chemistry Short Course	2013-present
Founder – Associate Investigator Seminar Series (DuPont)	2012-2013
Head Gryphon (Resident Assistant)	2010-2011
Treasurer – Lehigh University Philharmonic	2009-2011
Volunteer – ShareCare (visit shut-ins)	2009-2011
Engineering Mentor – Rossin Junior Fellow	2008-2010
Gryphon (Resident Assistant)	2007-2010
Section Leader – Lehigh University Philharmonic	2006-2011
Tutor – America Reads/Counts	2006-2007

## CURRICULUM VITAE

### AWARDS AND HONORS

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Adhesion Society (ASC) 2016 Meeting – Best Poster Award (Runner-up)	2016
Macromolecules and Interfaces Institute Travel Award	2015
University of Memphis REU – Best-in-class award	2010
Zinc Institute Scholarship	2007-2009
Eagle Scout	2006

### AFFILIATIONS

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- American Chemical Society (2015-present)
- Adhesion Society (2015-present)
- Alpha Sigma Mu (2009-present)

### PROFESSIONAL SERVICE

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**Peer Review:** *Macromolecules, Biomacromolecules, ACS Macro Letters, Polymer Chemistry, Journal of Materials Science, Advances in Polymer Technology, Progress in Organic Coatings*

### PUBLICATIONS

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3. **Sirrinc, J. M.**; Ashraf-Khorassani, M.; Moon, N. G.; Mondschein, R. J.; Long, T. E. “Supercritical Fluid Chromatography with Evaporative Light Scattering Detection (SFC-ELSD) for Determination of Oligomer Molecular Weight Distributions.” *Chromatographia* **2016**, ASAP.
2. **Sirrinc, J. M.**; Pekkanen, A. M.; Nelson, A. M.; Chartrain, N. A.; Williams, C. B.; Long, T. E. “3D-Printable Biodegradable Polyester Tissue Scaffolds for Cell Adhesion.” *Aust. J. Chem.* **2015**, *68*, 1409-1414.
1. Pekkanen, A. M.; DeWitt, M. R.; **Sirrinc, J. M.**; Geohegan, D. B.; Long, T. E.; Rylander, M. N. “Functionalization of Single Walled Carbon Nanohorns for Simultaneous Fluorescence Imaging and Cisplatin Delivery.” *Submitted for Publication*.

### CONFERENCE PRESENTATIONS

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11. **Sirrinc, J. M.**; Moon, N. G.; Williams, C. B.; Long, T. E. “Functional Siloxanes for Mask-Projection Microstereolithography (MP $\mu$ SL): Photo-Activated Chain Extension and Crosslinking.” **The 12<sup>th</sup> National Graduate Research Polymer Conference**, Akron, OH, June 19-22, 2016; Oral Presentation.

## CURRICULUM VITAE

10. **Sirrine, J. M.;** Moon, N. G.; Chatham, C.; Williams, C. B.; Long, T. E. “Functional Siloxanes for Mask-Projection Microstereolithography (MP $\mu$ SL): Photo-Activated Chain Extension and Crosslinking.” **The 43rd Polymeric Materials, Adhesives, and Composites (polyMAC) Conference**, National Security Campus (NSC), Kansas City, MO, June 15<sup>th</sup>, 2016; Oral Presentation.
9. **Sirrine, J. M.;** Pekkanen, A. M.; Nelson, A. M.; Chartrain, N. A.; Williams, C. B.; Long, T. E. “3D-Printed Biodegradable Polyester Tissue Scaffolds for Cell Adhesion.” **The Adhesion Society, 39<sup>th</sup> Annual Meeting**, San Antonio, TX, February 20-24, 2016; Poster Presentation. **\*\*Honored with Best Poster (Runner-up) Award.**
8. **Sirrine, J. M.;** Pekkanen, A. M.; Nelson, A. M.; Chartrain, N. A.; Williams, C. B.; Long, T. E. “3D-printing polymeric scaffolds for cellular attachment and tissue growth.” **The Virginia Tech Center for Drug Discovery, 2015 Student Poster Session**, Blacksburg, VA, November 6<sup>th</sup>, 2015; Poster Presentation.
7. **Sirrine, J. M.;** Long, T. E. Controlling polyelectrolyte complex morphology: Applications in drug delivery and adhesives.” **The 250<sup>th</sup> ACS National Meeting**, Boston, MA, August 16-20, 2015; Oral Presentation; PMSE 141.
6. **Sirrine, J. M.;** Nelson, A. M.; Pekkanen, A. M.; Schultz, A. R.; Chartrain, N. A.; Lambert, P. M.; Williams, C. B.; Long, T. E. “3D-printed biodegradable polyester tissue scaffolds for cell adhesion.” **The 250<sup>th</sup> ACS National Meeting**, Boston, MA, August 16-20, 2015; Oral Presentation; PMSE 17.
5. **Sirrine, J. M.;** Nelson, A. M.; Pekkanen, A. M.; Schultz, A. R.; Chartrain, N. A.; Lambert, P. M.; Williams, C. B.; Long, T. E. “3D-Printed Biodegradable Polyester Tissue Scaffolds for Cell Adhesion.” **The 2015 Macromolecules and Interfaces Institute Technical Conference and Review**, Virginia Tech, Blacksburg, VA, April 20-22, 2015; Poster Presentation.
4. **Sirrine, J. M.;** Schultz, A. R.; Nelson, A. M.; Chartrain, N. A.; Lambert, P. M.; Ruohoniemi, D. M.; Pekkanen, A. M.; Zhang, M.; Williams, C. B.; Long, T. E. “3D-Printed Biodegradable Polyester Tissue Scaffolds for Cell Adhesion.” **The Adhesion Society, 38<sup>th</sup> Annual Meeting**, Savannah, GA, February 20-25, 2015; Poster Presentation.
3. **Sirrine, J. M.;** Abdulahad, A. I.; Jangu, C.; Long, T. E. “Controlling Polyelectrolyte Complex Formation for Adhesive and Drug Delivery Applications.” **The 11<sup>th</sup> National Graduate Research Polymer Conference**, Baton Rouge, LA, June 1-4, 2014; Poster Presentation.

## CURRICULUM VITAE

2. **Sirrine, J. M.**; Chartrain, N. A.; Schultz, A. R.; Williams, C. B.; Long, T. E. 3D printing tailored interfaces with mask projection microstereolithography.” **The 250<sup>th</sup> ACS National Meeting**, Boston, MA, August 16-20, 2015; Oral Presentation; PMSE 14.
1. Pekkanen, A. M.; DeWitt, M. R.; **Sirrine, J. M.**; Long, T. E.; Rylander, M. N. “Functionalization of single walled carbon nanohorns for simultaneous fluorescence imaging and cisplatin delivery.” **The 250<sup>th</sup> ACS National Meeting**, Boston, MA, August 16-20, 2015; Oral Presentation; COLL 405.