

Lea C Paslay III

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Profile

Ph.D., Polymer Science and Engineering (August 2012). Expertise in synthesis and analysis of bio-inspired polymers and protein isolation and characterization. Involved with multiple research projects and collaborations. Motivated researcher with the ability to effectively communicate technical information to a non-scientific audience.

Education

THE UNIVERSITY OF SOUTHERN MISSISSIPPI– Hattiesburg, MS

- ♦ Ph.D, Polymer Science and Engineering, Aug. 2012
- ♦ Five-year advanced degree with a focus on surface modification and mimicking biological systems synthetically
- ♦ Advisor: Sarah E. Morgan
- ♦ Thesis: “Nanoscale Film Formation and Characterization of Self-Assembling Hydrophobin Proteins Isolated from Edible Mushrooms”

US DEPARTMENT OF EDUCATION GAANN FELLOWSHIP

- ♦ Training to educate a non-scientific audience about research
- ♦ Communication and presentation workshops
- ♦ Polymer science demonstrations and outreach activities for local schools

WILLIAM CAREY UNIVERSITY– Hattiesburg, MS

- ♦ B.S. Biological Sciences with a minor in Chemistry, 2007; Magna Cum Laude; Senior Biology Award; 2007 Daltronics-NAIA Men’s Golf Scholar-Athlete

MISSISSIPPI GULF COAST COMMUNITY COLLEGE– Perkinston, MS

- ♦ Associates of Arts, 2005; Academic All-American for the Varsity Sport of Golf; Anatomy and Physiology Award; Phi Theta Kappa

Research Experience

MORGAN RESEARCH GROUP / UNIVERSITY OF SOUTHERN MISSISSIPPI (MAY 2008- AUGUST 2012)

- ♦ Isolation and characterization of hydrophobin proteins for their use as biological coating to improve wettability, adhesion, friction and antifouling behaviors of surfaces.
- ♦ In-situ and surface-immobilized protein characterization via mass spectrometry, gel electrophoresis, circular dichroism, light scattering, atomic force microscopy, contact angle goniometry, ellipsometry and quartz crystal microbalance.
- ♦ Characterization of the folding pathways of A β -42, a peptide responsible for the progression of Alzheimer’s disease, via atomic force microscopy.
- ♦ Synthesis and characterization of antimicrobial peptide-mimicking polymers prepared by aqueous RAFT polymerization.
- ♦ Lab safety representative.

NSF IRES COLLABORATION / INDIAN INSTITUTE OF TECHNOLOGY, NEW DELHI, INDIA (NOVEMBER 2011- FEBURARY 2012)

- ♦ Study of antimicrobial mechanisms of biocidal polymers.
- ♦ Observation of polymer-cell interactions via confocal microscopy.
- ♦ In-vitro biocompatibility testing for biomimetic antimicrobial polymers.

INDUSTRIAL COLLABORATION BETWEEN ESSILOR USA AND THE MORGAN RESEARCH GROUP (USM POLYMER SCIENCE) (2010-2011)

- ◆ Investigated proprietary technologies for Essilor Lenses.
- ◆ Participated in periodic teleconferences, project reports and presentations to Essilor partners.

Professional Affiliations

- ◆ American Chemical Society, Polymer Division

Publications

- ◆ Kumar, A., Bullard, R.L., Patel, P., Paslay, L.C., Singh, D., Bienkiewicz, E.A., Morgan, S.E. and Rangachari, V. Non-Esterified Fatty Acids Generate Distinct Low-Molecular Weight Amyloid- β (A β 42) Oligomers Along Pathway Different from Fibril Formation. *PLoS One*. **6**(4):p. e18759.
- ◆ Jones, P.J, Paslay, L.C. and Morgan, S.E. Effects of Chin Conformation on Miscibility, Morphology, and Mechanical Properties of Solution Blended Substituted Polyphenylene and Polyphenylsulfone. *Polymer*. **51**(3): p. 738-747.
- ◆ Paslay, L.C., Falgout, L., Heinhorst, S., Cannon, G. and Morgan, S.E. Insight into the Mechanism and Kinetics of the Self-Assembly of the Hydrophobin Protein ABH1. (Manuscript in preparation)

Technical Presentations

- ◆ ACS 239th National Meeting & Exposition (Anaheim, CA). The Amphipathic Hydrophobin Protein, ABH1: Kinetics of Self-Assembly. **L.C. Paslay**, C. Wahl, S. Heinhorst, G. Cannon & S.E. Morgan.
- ◆ ACS 239th National Meeting & Exposition (Anaheim, CA). Exploring the Solution Behavior of a Self-Assembling Hydrophobin Protein, ABH1, via Static Light Scattering. **C. Keyes**, L.C. Paslay, C. Wahl, D. Savin, S. Heinhorst, G. Cannon & S.E. Morgan.
- ◆ ACS 62nd Southeastern Regional Meeting (New Orleans, LA). Surface Modification with *Agaricus bisporus* Hydrophobin Proteins. **L.C. Paslay**, S. Heinhorst, G. Cannon & S.E. Morgan.
- ◆ ACS 238th National Meeting & Exposition (San Francisco, CA). Investigation of Solution Stability and Self-Assembly of a Hydrophobin Protein, ABH1, from the Edible Mushroom *Agaricus bisporus*. **L.C. Paslay**, S. Kanas, G. Cannon, S. Heinhorst, & S.E. Morgan.
- ◆ 36th Annual Waterborne Symposium (New Orleans, LA). Development of Molecular Composites Containing Substituted Polyphenylenes and Polyphenylsulfones by Alterations of Copolymer Composition the Edible Mushroom. P. Jones, **L.C. Paslay** & S.E. Morgan.
- ◆ Gordon Conference: Science of Adhesion (New London, NH). Investigation of Solution Stability and Self-Assembly of a Hydrophobin Protein, ABH1, from the Edible Mushroom *Agaricus bisporus*. **L.C. Paslay**, S. Kanas, G. Cannon, S. Heinhorst, & S.E. Morgan.
- ◆ MRSEC (USM) Discussion (Hattiesburg, MS). Self-Assembly of Amphipathic Hydrophobins in Solution and on Surfaces. **L.C. Paslay**, C. Harris, G. Cannon, S. Heinhorst & S.E. Morgan.
- ◆ MRSEC International Symposium on Stimuli-Responsive Material (Hattiesburg, MS). Self-Assembling Hydrophobin Proteins (hypA and hypB) from *Agaricus bisporus*, Optimization of Isolation Procedures. **L.C. Paslay**, L. Harris, R. Misra, G. Cannon, S. Heinhorst, S.E. Morgan.
- ◆ ACS 237th National Meeting & Exposition (Salt Lake City, UT). Self-Assembling Protein (ABH1 Hydrophobin) from *Agaricus bisporus*, Optimization of Isolation and Characterization. **L.C. Paslay**, L. Harris, C. Harris, G. Cannon, S. Heinhorst & S.E. Morgan.

Research Advisor Contact

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