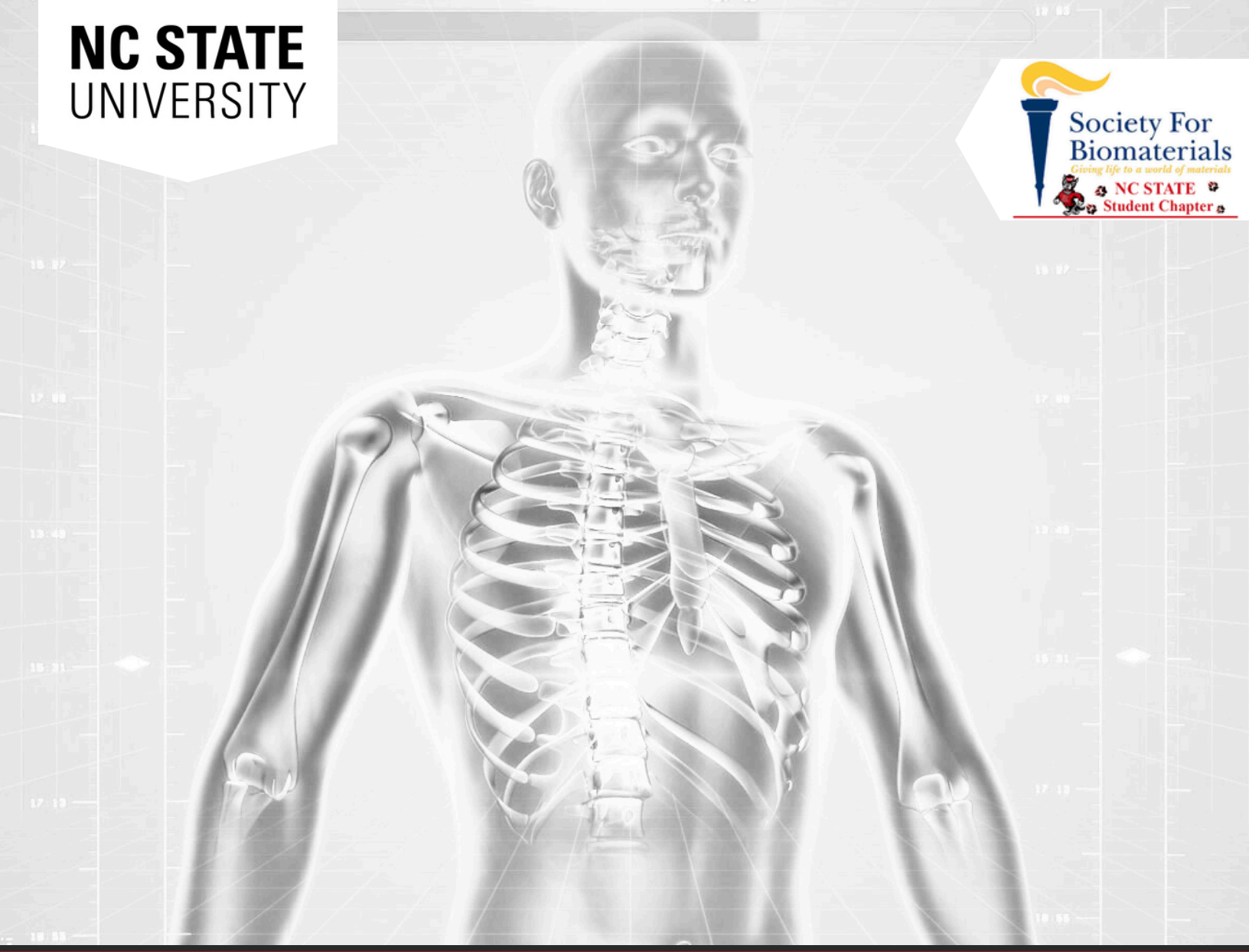
NC STATE UNIVERSITY

Society For Biomaterials
Giving life to a world of materials
NC STATE Student Chapter



Biomaterials Day 2025

April 4, 2025

Wilson College of Textiles
Raleigh, NC

THANK YOU TO OUR SPONSORS!

NC STATE Wilson College of Textiles

BD

Society For Biomaterials

Invited Speakers

DR. KRISTY AINSLIE

Fred Eshelman Distinguished Professor,
UNC Chapel Hill

Department of Pharmacoengineering & Molecular Pharmaeutics

ainsliek@email.unc.edu

DR. SARAH SHELTON

Assistant Professor,
NC State & UNC Chapel Hill

Lampe Joint Department of Biomedical Engineering

seshelto@ncsu.edu

Agenda

8:00–8:30AM REGISTRATION, COFFEE, POSTER SET-UP

8:30–8:45AM WELCOME ADDRESS – DR. MARTIN KING

SESSION 1

8:45–9:30AM INVITED SPEAKER – DR. KRISTY AINSLIE

METALS AND PEPTIDES AND POLYMERS, OH MY! FOLLOWING THE YELLOW BRICK ROAD TOWARDS A UNIVERSAL INFLUENZA VACCINE

9:30–9:45AM GRADUATE STUDENT SPEAKER – KAYLA MUAE

FIBER-REINFORCED POROUS EXTRACELLULAR MATRIX MIMICKING SCAFFOLFS FOR TISSUE ENGINEERING AND REGENERATIVE MEDICINE

9:45–10:00AM GRADUATE STUDENT SPEAKER – DR. MENGNAN DENNIS

INJECTABLE THERMORESPONSIVE HYDROGEL SCAFFOLD FOR DELIVERY OF NEURAL STEM CELLS IN THE POST-SURGICAL TREATMENT OF GLIOBLASTOMA MULTIFORME

10:00–10:15AM GRADUATE STUDENT SPEAKER – ANASTASIA SHERIDAN

SIALIC ACID MODIFIED ADULT FIBRINOGEN TO PROMOTE NEONATAL-LIKE WOUND HEALING IN ADULTS

SESSION 2

10:30–11:15AM INVITED SPEAKER – DR. SARAH SHELTON

USING MICROPHYSIOLOGICAL SYSTEMS TO REVEAL HOW FIBROBLASTS SHAPE TISSUE MICROENVIORNMENTS

11:15–11:30AM GRADUATE STUDENT SPEAKER – KIN GOMEZ

ASSESSING PDMS BIOCOMPATIBILITY IN MICROFLUIDIC APPLICATIONS: TOXICITY AND SURVIVAL OUTCOMES IN C. ELEGANS

11:30–11:45AM POSTDOC SPEAKER – DR. LUKE TUCKER

PILOT PHARMACOKINETIC AND PHARMACODYNAMIC CHARACTERIZATION OF NANOSILVER LOADED PLATELET LIKE PARTICLES

11:45–12:00PM GRADUATE STUDENT SPEAKER – ROBERT SEEVERS

APPLICATION OF TEXTILE ACTUATORS IN A LIGHTWEIGHT KNEE BRACE FOR MOBILITY ASSISTANCE AND REHABILITATION

LUNCH 12:00–1:00PM

SESSION 3

1:00–2:00PM POSTER SESSION

2:00–2:10PM UNDERGRADUATE SPEAKER – ANNA CASTILLO

MESENCHYMAL STEM CELL LICENSING FOR IMPROVED TENDON HEALING

2:10–2:20PM UNDERGRADUATE STUDENT SPEAKER – SHANIA DANTES

NEUTROPHIL EXTRAVASATION AND MIGRATION IN 3D MICROVASCULAR NETWORKS

2:20–2:30PM UNDERGRADUATE STUDENT SPEAKER – LAUREN MABE

TBD

2:30–3:15PM 3-MINUTE RESEARCH PITCH COMPETITION

3:30–3:45PM AWARD CEREMONY

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Poster Presentations

1	Nafi	Ahmed	3D Biofabrication of Edible Collagen-Riboflavin Hydrogels for Cultivated Meat
2	Jared	Albert	Understanding the Impact of Platelet-Like-Particles on Media-Based Fibrin Gel Kinetic and Mechanical Properties
3	Kiran	Ali	Harnessing Decellularized ECM Proteins to Enhance iPSC Differentiation: A Breakthrough in Heart Therapy
4	David	Alvarado	Toward the Development of Photodynamically Enhanced Antimicrobial Materials for Hospital and Combat Wound Care Applications
5	Christina	Bayard	Design and Characterization of Nucleic Acids Biomolecular Condensates using Molecular Modeling and Machine Learning Approaches
6	Will	Blackledge	Modeling the tumor microenvironment in pancreatic cancer reveals opposing functions of cancer-associated fibroblast subtypes
7	Halle	Cantor	Optimization of loaded fibrin-specific nanogels for treating sepsis-induced disseminated intravascular coagulation
8	Sarah-Courtney	Cavatoni	Performing Sealant Testing of a Decellularized Microgel Uterine Scaffold for Wound Healing and Women's Health Applications
9	Audrey	Clark	Comparing Mechanical and Molecular Properties of a Bulk and Microgel-based Decellularized Uterine Scaffold
10	Halston	Deal	An simple, interfacial microfluidic device for characterization of fibrin permeability, lysis, and infiltration by fibroblasts
11	Merve	Fedai	Advanced Biomimetic Materials Models for Sustainable Applications
12	Sophie	Finkelstein	Regional Evaluation of the Meniscus Following an Anterior Cruciate Ligament Injury in the Growing Knee Joint
13	Grace	Hardy	Sialic-acid Modified Adult Fibrinogen to Promote Neonatal-like Wound Healing in Adults
14	Krista	Hilmas	Thrombin-sensitive platelet-like particle for combinatorial nanoparticle hemorrhage control

Poster Presentations

15	Sachin	Kadian	Machine learning-enabled colorimetric pH sensing patch for meat spoilage detection and wound health monitoring
16	Rajaram	Kaveri	Soft Bioelectronics for Wireless Sensing and Tissue Regeneration
17	Mahtab	Khodadadi	Bioengineered PCL/Gel Nanofiber-GelMa Hydrogel Composites for Cardiomyocyte Maturation in Cardiac Tissue Engineering
18	Alexa	Kuyvenhoven	Regenerative Properties Of Fibrin-Based Nanoparticles Incorporated with Bone Marrow-Derived Mesenchymal Stem Cells for Novel Equine Therapeutics
19	Connor	Moore	Highly Porous Fibrin-Based Nanoparticle Scaffolds for Diabetic Wound Healing
20	Meagan	Morgan	Impact of Solvent in PCL/PEO Hydroxyapatite Ink for Bone Tissue Engineering
21	Osarobo	Obasuyi	Potential of Platelet-Like Particles (PLPs) to Enhance Intra-Articular Healing via Exosome Release and Fibrin Stabilization
22	Melika	Osareh	Fibrin-based Stem Cell Delivery with Synthetic Platelets Enhances Therapy for Joint Injuries
23	Uditi	Patil	Hormone-dependent differences in clot dynamics in response to hemostatic microgels
24	Akanksha	Pragya	Resolving Soft-Hard Mismatch at the Limb-Prosthetic Interface through Stiffness Gradient Interface Materials
25	Ysabel	Rey	Patient Specific Fibrin-Based Nanoparticles for Treatment of Equine Lower Limb Wounds
26	Anthony	Tixe	In vitro characterization of antibacterial nanosilver-composite microgels
27	Parker	Underwood	Competitive Binding Between Silver Nanoparticles and Fibrin Antibody Fragment
28	Adrienne	Ward	Fibrin-Based Nanoparticles for Equine Distal Limb Wound Healing