

# BME CAPSTONE PROJECTS

~2005-2006~

30 BME Capstone Teams; 50 students were enrolled in the course.



Topic	Project Title	Team Name	Capstone Student Team Members	Team Advisor(s)
<b>Tissue Engineering</b>	A Novel Approach to Bone Scaffolds using Stack Lamination	BONES	GABE ORSINGER	Ed Botchwey, Ph.D. (UVA BME) Mike Appleby, Ph.D. (MikroSystems, Inc.)
	Nano and Micro Structured Scaffolds for Bone Tissue Engineering	NOTES	STEPHANIE KASZUBA	Ed Botchwey, Ph.D. (UVA BME)
<b>Drug Delivery</b>	Use of Nanospheres for Cancer	LANCE	CARLOS SEVILLA	Ed Botchwey, Ph.D. (UVA BME) and Zhigilei, Ph.D. (UVA Materials Science)
	Creation of a Biomimetic System delivering PDGF via PLG Microspheres	GREAT	CAITLIN BURKE & CASEY HOLLIDAY	Rich Price, Ph.D. (UVA BME)
<b>Angiogenesis</b>	Angiogenic Study in Avascular Mouse Mesentery	MAG	CAROLINE EVANS	Tom Skalak, Ph.D. (UVA BME)
<b>Chemokines and Cell Adhesion</b>	Enhancing Microbubble Adhesion Using Two Distinct Receptor-Ligand Pairs	DUAL	WILLIAM YANG	Klaus Ley, M.D. (UVA BME)
	Chemokine Receptors in Crohn's Disease	CREAMED	MARC SCHWARTZ	Klaus Ley, M.D. (UVA BME)
	How to Enhance Microbubble Targeting In Vivo	TADD	SHADI ALIKHANI	Klaus Ley, M.D. (Targeson, Inc.)
	Cytokine Relation to BMP-modified Stem Cells	CEDOS	TAMARA SANDY	Li, Ph.D. (UVA Neurosurgery)
<b>The Human Heart: Devices &amp; Experiments</b>	Axial Flow VAD	ETAP	SUPARNA NAVALE	Paul Allaire, Ph.D. (UVA MechE)
	Failure of Aortic Valve in Pressure	CHIMP	PETER MATTHEWS-RURAK	Richard Kent, Ph.D. (UVA MechE)
<b>Orthopaedic Devices</b>	Improved Suture Anchor	C.R.E.E.P.S.	SARAH GAY, MEAGHAN MUNN, COLLIN WITTE	Mike Pannunzio, M.D. (UVA Orthopaedics)
	Modified Bone Plate	IBoP	THERESA DAVIDSON, KATHERINE DOWE, & CHRISTINA GETTMAN	Mike Pannunzio, M.D. (UVA Orthopaedics)
	Improved Hip Implant Design	METHOD	ERIN ARMSTRONG, SUSIE DEKOACH, JULIE RABALIS	Mike Pannunzio, M.D. (UVA Orthopaedics)

<b>Clinical Devices for the Bedside</b>	Heel Protector	PURPLE	YASH SHRIVASTATAV, TONY SONG, & JI SONG	Cathrine Ratliff, R.N. (UVA Nursing)
	Needle Cutter for 3rd World Countries	NRADD	ASLI AYVERDI, BRANDON BABCOCK, STEVE JANSEN & PARKER TRESEMER	Jeanine Jeager, Ph.D. (UVA Healthcare Worker Safety)
	Gastric Outlet Obstruction Venting and Re-Infusion Device	GRIND	JEREMY ATKINSON, WYATT BEYER	Joe Krenitsky, M.D. (UVA Gastroenterology)
<b>Emerging Cell Culture Assays</b>	Cells on Nanopatterned Substrates	CREEPS	JO BURNS & GARRY CARROLL	Brian Helmke, Ph.D. (UVA BME)
	Characterization of an In Vitro Blood Brain Barrier Model and Permeability of b-cyclodextrin Polymers Across the Model	SPACE	ANNIE MITSAK	Brian Helmke, Ph.D. (UVA BME)
	Engineering Capillaries In Vitro	GIVE	ALISON SANDERS	Brian Helmke, Ph.D. (UVA BME)
	Development of a Flow-induced Capillary Network Formation Model	FAST	JASON MANTO	Brett Blackman, Ph.D. (UVA BME) and Rosanne Ford, Ph.D. (UVA Civil Eng.)
	Atomic Force Microscopy for testing Lipid Rafts and Cell Membrane Mechanics	MAMOL	JASON NARAMORE & KARA PARSONS	Brett Blackman, Ph.D. (UVA BME) and Ed Berger, Ph.D. (UVA Civil Eng.)
<b>Molecular Mechanisms of Disease</b>	The Pathway of GATA-2 Transcription Factor Regulation Involving PIASy and Hex in Human Endothelial Cells by Hemodynamic Forces	FROG	SONAL SAMPAT	Brett Blackman, Ph.D. (UVA BME)
	Novel Effects of Nitric Oxide on Cardial Muscle Myosin	NORM	ALICIA EVANGELISTA	Will Guilford, Ph.D. (UVA BME)
<b>Multi-Scale Computational Modeling</b>	Computational Model for Studying the Integrated Response of Multiple Vascular Adaptations During Exercise	CAVIAR	KYLE BINDER	Rich Price, Ph.D. (UVA BME)
	Network Reconstruction Model of Lashmina Parasite	RELISH	ARVIND CHAVALI, KYLE SINGLETON, & MONICA LEE	Jason Papin, Ph.D. (UVA BME)
	Computational Model of Sub-lethal Strangulation	FEMALES	ALI WEISS, MATT GEARY, & ROCKY ZANDIEH	Cathryn Laughon, Ph.D. (UVA Nursing)
<b>Medical Applications of Optical Fibers</b>	Neurocatheter with Optical Fibers Prototype Testing	UV FUN	ANN SCHILLINGER	George Gillies, Ph.D. (UVA MechE)
	In Vivo Organotypic Nerve Tracing	SAINTS	ANDREW MIRELMAN & TERRY KIRKLEY	Jeremy Tuttle (UVA Neuroscience) & William Steers (UVA Urology)