

Yale Biomedical Engineering PhD Graduates

Name	Thesis Title	Mentor	Calendar Year	Month
Ryan Nguyen	Multiscale Approaches for Uncovering Mechanobiological Phenomena in Tissue Engineering and Cancer	Mak	2023	May
Kate Bridges	Image Analysis and Biomechanics for Patient-Specific Mitral Valve Modeling from Transesophageal Echocardiography	Miller-Jensen	2023	May
Liang Yang	Analysis of in Vitro Self-Assembling Networks	Levchenko	2023	May
Yuqi Wang	Uncovering the Function and Molecular Mechanism of MILI in Mouse Germline Stem Cells	Lin	2023	May
Alborz Feizi	Engineering Tools for High-Throughput Ex Vivo Human Organ Research	Tietjen	2023	May
David Dellal	Development and Validation of an Advanced Mechatronic Organ Preservation Platform	Sestan	2023	May
Kevin Ta	Multi-task Learning for Cardiac Motion Analysis and Segmentation in Echocardiography	Duncan	2023	May
Alexandra Suberi	Pulmonary Delivery of mRNA Therapeutics	Saltzman	2023	May
Archer Hamidzadeh	Elucidating Extracellular Signal-Regulated Kinase (ERK) Dynamics with FRET-based Biosensors	Levchenko	2022	December
Dave O'Connor	Quantitative Analysis of Dynamic Functional Connectivity in the Brain	Constable	2022	December
Feimei Liu	Expanding the Repertoire and Applications of Single-Domain Antibodies	Carson	2022	December
Xingjian Zhang	Biophysical Signatures in Cancer and Sickle Cell Disease	Mak	2022	December
Alexander Josowitz	Polymeric Nanoparticles for the Local Delivery of Small Molecule Inhibitors: Applications Toward Glioblastoma and Airway Disease	Saltzman	2022	December
Shawn Ahn	Attention Neural Network for Cardiac Strain Analysis in 3D Echocardiography	Duncan	2022	December
Rebecca Byler	A Rational Approach to the Development of Topical Patches for Treatment of Cutaneous Leishmaniasis	Kyriakides	2022	December
Hao Xing	Cell- and Extracellular Matrix-Based Approaches to Investigate Diabetic Fibroblasts and Improve Wound Healing	Kyriakides	2022	May
Chang Liu	Tumor Cell Migration and Interaction with ECM and Stroma in 3D Tissue Models	Mak	2022	May
Zach Connerty-Marin	Quantifying Membrane Topology at the Nanoscale	Bewersdorf	2022	May
MinSoo Khang	Intrathecally Delivered NPs for Treatment of Leptomeningeal Metastasis	Saltzman	2022	May
Shi Shen	The Investigation of Reverse Remodeling Phenomenon in Engineered Heart Tissues	Campbell	2022	May
Jenette Creso	Multi-Scale Modeling of Myocardial Mechanical Function and Disease	Campbell	2022	May
Juntang Zhuang	Machine Learning Methods to Estimate Whole-Brain Effective Connectome for ASD Identification	Duncan	2022	May
Margaret Elise Bullock	Exploring Chromatin-mediated Regulation of Transcriptional Noise with Stochastic Models of HIV Gene Expression	Miller-Jensen	2022	May
Ann Chen	Development and Delivery of Genome-Editing Therapies for Improved Glioblastoma Treatment	Zhou	2022	May
Katherine Leiby	Engineering Functional Distal Lung Epithelium	Niklason	2022	May
Ons M'Saad	Light Microscopy of Proteins in their Ultrastructural Context	Bewersdorf	2022	May
Kevin Hu	Multi-color isotropic super-resolution in living cells	Bewersdorf	2022	May
Samantha Rossano	Synaptic Density Imaging with SV2A using Positron Emission Tomography: Optimization of Reference Region Analysis and Quantification	Carson	2021	December
Andrew Barentine	Quantitative Super-Resolution Microscopy	Bewersdorf	2021	December
Muhammad Khan	Transcompartmental Sodium Imaging in Brain Cancer	Hyder	2021	December
Allison Greaney	Improvements in Pulmonary Tissue Engineering: Toward Functional Tracheal and Lung Replacements	Niklason	2021	May
Siyuan Gao	Latent Factor Analysis of high-dimensional Brain Imaging Data	Scheinost	2021	May
Rita Matta	The Role of Microvascular Signaling in the Neurogenic Niche	Gonzalez	2021	May
Edward Han	Development of a Vascular Bioartificial Endocrine Pancreas	Niklason	2021	May
Heather Liu	Kinetic Modeling, Parameter Estimation and Model Comparison in PET: Functional Images of Neurotransmitter Dynamics	Morris	2021	May
John Walsh	Surveilling the Distinctive Vascular and Metabolic Features of Tumor Progression and Response to Therapy	Hyder	2021	May
Micha Sam Raredon	Single-Cell Systems Engineering of Alveolar Lung	Niklason	2020	December
Luyao Shi	Advanced Quantitative Cardiac Nuclear Imaging	Liu	2020	December
Amanda Alexander	Investigating the Regulation and Consequences of Cell-to-Cell Heterogeneity in the TLR4-Induced Macrophage Secretion	Miller-Jensen	2020	December
Jason Szafron	Mathematical Models for Improved Design of Tissue Engineered Vascular Grafts	Humphrey	2020	December
Lorenzo Sewanan	Investigating the mechanobiology of Hypertrophic Cardiomyopathy using human stem-cell derived cardiomyocytes, engineered heart tissue, and computational models	Campbell	2020	December
Zach Augenfeld	Automatic Multimodal Registration via Intraoperative Cone-beam CT Segmentation Using MRI Distance Maps	Duncan	2020	May
Jeffery (Alex) Clark	Characterizing the Impact of Microscale Heterogeneity on Macroscopic Mechanical Function in the Myocardium	Campbell	2020	May
Ramak Khosravi	A Data-Driven Computational Model of Tissue Engineered Vascular Grafts for Treatment of Congenital Heart Disease	Humphrey	2020	May
Rebecca LaCroix	An Investigation of the Effects of Kinase Localization on Cell Signaling and Behavior	Levchenko	2020	May
Xiaoxiao Li	Data-Driven Strategies for Characterizing Neuroimaging Biomarkers in Autism	Duncan	2020	May
Ayomiposi Loye	Bulk Metallic Glass for Orthopaedic Applications	Kyriakides	2020	May
Ronald Ng	Investigating the Role of Mechanical Loading in Arrhythmogenic Cardiomyopathy	Campbell	2020	May
Fan Zhang	Layer Embedding Analysis in Convolutional Neural Networks for Improved Uncertainty Estimation and Classification	Duncan	2020	May
Sean Bickerton	Nanoparticle Systems for the In Vivo Generation of Regulatory T Cells in Autoimmune Disease Therapy	Fahmy	2019	December
Nadine Dispenza	Accelerated Nonlinear Gradient Encoding Strategies for Parallel Magnetic Resonance Imaging	Constable	2019	December
Alexander Svoronos	Tumor-Targeted Inhibition of Oncogenic MicroRNAs for Cancer Therapy using pH-Low Insertion Peptide (pHLIP)	Engelman	2019	December
MaryGrace Velasco	Three-Dimensional STED Microscopy for Deep-Tissue Applications	Bewersdorf	2019	December
Shari Yosinski	Electronic Particle Manipulation for Lab-on-chip Diagnostics	Reed	2019	December
Yang Xiao	Microvascular Engineering for Disease Modeling and Regenerative Medicine	Fan	2019	May
Alexander Engler	Integrated Physiological and System Design Approaches for Whole Lung Tissue Engineering	Niklason	2019	May
Young-Eun Seo	Nanoparticles for local delivery of miRNA inhibitors to treat glioblastoma	Saltzman	2019	May
Zhuo Chen	Single-Cell Microchips for Profiling Macrophage Activation Dynamics	Fan	2019	May
Ian Linsmeier	Active Actomyosin Mechanics: Cooperativity and Scaling of Contraction in Disordered Networks	Murrell	2018	December
Haiping (Allen) Lu	Learning-based Regularization for Cardiac Strain Analysis	Duncan	2018	December
Samuel Maritim	Simultaneous Imaging of Drug Delivery and Cancer Therapy: Towards Glioma Diagnostics and Therapeutics with High-Resolution Extracellular pH Mapping	Hyder	2018	December
Adele Ricciardi	Nanoparticles for Site-Specific Gene Editing In Utero	Saltzman	2018	December
Arina Korneva	Effects of Elastic Fiber Impairment and Hypertension on Biomechanics of the Mouse Aorta	Humphrey	2018	May
Andres Munoz Rojas	Analysis of Macrophage Polarization: Single-Cell Responses in Controlled and Tumor Microenvironments	Miller-Jensen	2018	May
Silin Ren	Novel Algorithms for Motion Correction and Image Processing in Positron Emission Tomography	Carson	2018	May
Amanda Pellowe	Pericytes as Regulators and Responders: Engineered Human Microvessels to Study Cell-Cell and Cell-Matrix Interactions	Gonzalez	2018	May
Iva Xhangoli	High-content Multi-omic Analysis of anti-CD19 CAR-T Therapy	Fan	2018	May
Jonas Schwan	Engineered Heart Tissue as a means of investigating the functional role of Myosin Binding Protein C in Familial Hypertrophic Cardiomyopathy	Campbell	2018	May
Linda Fong	Data-Driven Analysis of Phospho-Signaling Network Responses Enables Latent HIV-Infected T Cell Targeting	Miller-Jensen	2018	May
Nayi Wang	Single cell microRNA analysis	Fan	2018	May
Shihan Khan	Characterization of the Biophysical Parameters Governing Nanoparticle-Based Drug Delivery to B Cells	Fahmy	2017	December
Aaron Morris	Modulation of the Host Response through Genetically Engineered Extracellular Matrix and Controlled Drug Delivery	Kyriakides	2017	December
Nina Kristofik	A Thromboresistant Cell-Derived Biomaterial Modification for Vascular Grafts	Kyriakides	2017	December
Jiajia Cui	Poly(amine-co-ester) nanoparticles for the delivery of siRNA therapeutics	Saltzman	2017	
Ryan Petrulli	Application of Quantitative Metrics for EGFR-Targeted Non-Small Cell Lung Cancer Therapy Using [11C]Erlotinib PET	Morris	2017	
Emil Kromann	Live-cell STED Microscopy	Bewersdorf	2017	

Amanda King	Convection-Enhanced Delivery of Radiosensitizer-Loaded Nanoparticles for the Treatment of High-Grade Gliomas	Saltzman	2017
Mary Germino	Improved Quantification in Dynamic PET via Advanced Reconstruction Methods for Parametric Imaging	Carson	2017
Yu Lin	Development of High-throughput Single Molecule Switching Nanoscopy	Bewersdorf	2017
Matthew Bersi	Biomechanics of Angiotensin II Induced Vascular Remodeling	Humphrey	2016
Paolo Di Achille	Hemodynamics-Driven Deposition of Thrombus in Aortic Aneurysms and Dissections	Humphrey	2016
Minsuk Kwak	SINGLE CELL FUNCTIONAL ANALYSIS: from HEMATOPOIETIC CANCER to AUTOIMMUNITY	Fan	2016
Holly Lauridsen	Modeling the Microvasculature: Novel In Vitro Models of the Human Microvasculature to Elucidate the Roles of Pericytes and Extracellular Matrix in Innate Inflammation.	Gonzalez	2016
Shuo Wang	Development and Optimization of PET Modeling Methods for Imaging Addiction: Characterizing the Brain's Dopamine Signature of Cigarette Smoking	Morris	2016
Sashka Dimitrievska	Glycocalyx-Like Coating of Decellularized Vascular Grafts: Glycomimicry	Niklason	2016
Jagannath Padmanabhan	Engineering Cellular Response Using Nanopatterned Bulk Metallic Glass	Kyriakides	2016
Parid Sava	Pericyte-Derived Extracellular Matrix: Role of Remodeled Basement Membrane and Interstitial Tissue in Angiogenesis, Inflammation, and Fibrosis	Gonzalez	2016
Christina Shu	Translational Functional MRI Techniques for Quantitative Studies of Brain Function	Hyder	2016
Amogh Sivarapatna	Vascular Tissue Regeneration Using Endothelial Cells Derived From Human Induced Pluripotent Stem Cells	Niklason	2016
Jacopo Ferruzzi	Biomechanics of Large Artery Stiffening and its Role in Cardiovascular Disease Progression	Humphrey	2015
Brendan Huang	All-optical Quantification of Ciliary Physiology	Choma	2015
Chenxi Huang	Robust Estimator for Cryo-EM Class Means in the Presence of Outliers	Tagare	2015
Jennifer Saucier-Sawyer	Enhanced Systemic and Local Delivery of Targeted, Brain-penetrating, Polymeric Nanoparticles for Glioblastoma Growth and Remodeling of Heterogeneously Evolving Abdominal Aortic Aneurysms: Computational Modeling and Experimental Insights	Saltzman	2015
John Wilson	The Biophysical Context of Interleukin-15 Presentation: Strategies for Biomimetic Cytokine Delivery	Humphrey	2015
Enping Hong	Induction of Immunological Tolerance with Biodegradable Immune Modulating Nanosystems	Fahmy	2015
Michael McHugh	Biomimetic Nanosystems Targeting Antigen-Presenting Cells for Improved Immunotherapeutics	Fahmy	2015
Alyssa Siefert	Spatial Resolution Improvement in Positron Emission Tomography: Physics, Statistical Models and Iterative Image Reconstruction	Fahmy	2015
Yiqiang Jian		Carson	2014
Jingjing Kanik	Image Analysis and Biomechanics for Patient-Specific Mitral Valve Modeling from Transesophageal Echocardiography	Duncan	2014
David Simon	Biomechanics and remodeling of free-floating tissue equivalents	Humphrey	2014
Elizabeth Calle	Alveolar Barrier Function in Engineered Lung Tissue	Niklason	2014
Angela Huang	Enhance the ECM Properties and Mechanical Properties of Tissue-Engineered Vessels via Novel Biomechanical and Biochemical Approaches: Biaxial Bioreactors and microRNA29 Inhibitor	Niklason	2014
Jullian Andrejcsk	Alginate-Encapsulated Pericytes and Freely Suspended Endothelial Cells for Vascular Self-Assembly: A Study of Paracrine Communication in Microvascular Tissue Engineering	Saltzman	2014
Alp Kucukelbir	Sparse and Steerable Representations for 3D Electron Cryomicroscopy	Tagare	2014
Christine Sandiego	Neuroreceptor Imaging of the Awake Nonhuman Primate	Carson	2013
Edward Fung	Cerebral Blood Flow Measurements Using Carotid Artery Image-Derived Input Functions in Positron Emission Tomography	Carson	2013
Xiao Jin	Event-by-Event Motion Correction in Positron Emission Tomography: Development, Evaluation and Applications	Carson	2013
Leo Tam	Nonlinear Encoding MRI: Multi-slice and Oblique O-space Imaging, Null Space Imaging, and Pseudo-random O-space for Accelerated Parallel Imaging	Constable	2013
Dustin Scheinost	Development and Application of Voxel-based Resting-state Functional Magnetic Resonance Imaging Methods: The Intrinsic Connectivity Distribution	Constable	2013
Colin Compas	Radial Basis Functions for Combining Shape and Speckle Tracking in Echocardiography	Duncan	2013
Jenna Sullivan	Development of PET Methodologies for Imaging Addiction: Imaging the mGluR5 and detecting smoking-induced dopamine release	Morris	2013
Rachel Fields	Novel Polymeric Nanoparticles for Pulmonary Gene Delivery	Saltzman	2013
Nicole McNeer	Nanoparticles for Site-Specific Genome Editing	Saltzman	2013
Kevin Tang	MRI based immune cell tracking in stroke	Shapiro	2013
Pelin Ciris	Whole-Brain Non-Invasive Absolute Cerebral Blood Volume Quantification During Functional Activation in Humans: Characterizing the Absolute Cerebral Blood Flow and Volume Relationship	Constable	2012
Jason Stockmann	New Strategies for Accelerated Spatial Encoding with Quadratic Fields in Magnetic Resonance Imaging	Constable	2012
Nicha Dvornek	Registration of Pre- and Post-Treatment Brain Images with Missing Correspondences	Duncan	2012
Michael Look	Design and characterization of nanoparticles used for lupus therapy	Fahmy	2012
Jason Criscione	Designing Dendrimer-based Nanosystems for Multimodal Imaging and Theranostic Applications	Fahmy	2012
Serge Kobsa	Development of bioengineered constructs for tissue regeneration and repair	Saltzman	2012
Michael Nkansah	Biodegradable Magnetic Particles for Cellular MRI	Shapiro	2012
Margaret Bennewitz	Complimentary Cellular and Molecular Diagnostic Imaging Approaches for Cancer	Shapiro	2012
Andrew Barthel	Likelihood-Based Reconstructions of Geometrically Constrained Single Particles in Cryo-EM	Sigworth	2012
Jason Park	Therapeutic Modulation of TGF- β signaling in Alloimmune Disease and the Anticancer Immune Response: A critical role for rationally designed drug delivery	Fahmy	2011
Joseph Zinter	Optimizing Fluorescence Collection Efficiency in Multiphoton Microscopy	Levene	2011
Hon Pong Ho	Fasciculography: Volumetric Tract Parcellation from Diffusion Magnetic Resonance Images	Staib	2011
Yun Zhu	LV Segmentation and Motion Analysis from 4D Cardiac Images	Duncan	2010
Stacey Demento	Nanoparticles modified with Toll-like receptor ligands for vaccination	Fahmy	2010
Erin Steenblock	A Comprehensive Platform for T-cell Stimulation Based on Biodegradable Polymeric Artificial Antigen-Presenting Cells	Fahmy	2010
Rebecca Robinson	Degradable Polymer Constructs Delivering AG1478 to Promote Axon Regeneration in the Mature Mammalian Central Nervous System	Lavik	2010
Thomas Chia	Novel techniques with multiphoton microscopy: Deep-brain imaging with microprisms, neurometabolism of epilepsy, and counterfeit paper money detection	Levene	2010
Clay Quint	Novel decellularized tissue engineered blood vessel with endothelial progenitor cells for arterial revascularization	Niklason	2010
Yen Cu	Engineered PLGA particles for mucosal vaccine delivery	Saltzman	2010
Qian Yang (EE)	3D Reconstruction and Measurement of Microtubules from Multiangle, Total Internal Reflection Fluorescence Microscopy	Duncan	2010
Deepti Bathula	Functional MRI Analysis Using Training-Based Prior Models of Activation Patterns	Duncan	2009
William Greene	Constrained Non-Rigid Registration for Use in Image-Guided Radiotherapy	Duncan	2009
James Bertram	Engineering Synthetic Platelets for Applications in Vascular Injury	Lavik	2009

Sara Royce Hynes	Biomaterial Scaffolds for Retinal Repair: The Synthesis and Characterization of Three Poly (Ethylene Glycol)/Poly (L-lysine) Hydrogels and their Influence on Neural Progenitor Cells	Lavik	2009
Steven Jay	Engineering Drug Delivery into Regenerative Medicine: Enhancing Therapeutic Vascularization through a Combined Molecular and Cellular Approach	Saltzman	2009
Andrew Sawyer	Customizing Intracranial Nanoparticle Distribution During Convection-Enhanced Delivery: Application in Brain Tumor Therapy	Saltzman	2009
Pujitha Weerakoon	An Integrated Patch-Clamp Amplifier for Automated, High-Throughput, Whole-Cell Recording Systems	Sigworth	2009
Laura Sacolick	Method Development in in-vivo NMR Spectroscopy and Spectroscopic Imaging	de Graaf	2008
Millicent Rauch	Engineering Microvascular Networks for the Treatment of Spinal Cord Injury: Coculture of Neural Progenitor Cells and Endothelial Cells	Lavik	2008
Rachael Sirianni	Quantifying Drug Delivery to Vascular Endothelium and the Hippocampus: Release, Distribution and Biological Effects of Paclitaxel and Brain Derived Neurotrophic Factor	Saltzman	2008
Debayan Datta	Statistical Methods for Analyzing ChIP-chip Data	Zhao	2008
Peter Reeves	Tuning-out Instability: The Importance of Feedback Control in the Spine	Cholewicki	2007
Amy Scouten	Optimization and Application of Whole-Brain Cerebral Blood Volume Functional MRI	Constable	2007
Christine Delorenzo	Image-Guided Intraoperative Brain Deformation Recovery	Duncan	2007
Eric Stern	Label-Free Sensing with Semiconducting Nanowires	Reed	2007
Margaret Cartiera	Toward Understanding the Interaction and Intracellular Fate of Nanoparticles in Epithelial Cells	Saltzman	2007
Catherine Lo	Poly(Lactide-co-Glycolide) Nanoparticle assembly as Controlled Delivery Coatings for Microfabricated Neural Prosthetics	Saltzman	2007
Ping Yan (ME)	Cardiac Motion Analysis from Echocardiography	Duncan	2007
Ning Lin	Towards Automatic Cardiac Motion Analysis	Duncan	2006
Qin Qin	2D Arbitrary Shape Selective Excitation for T2 and MRS Measurements	Gore	2006
Yansong Zhao	Studies of Magnetic Susceptibility Artifacts in Magnetic Resonance Imaging	Gore	2006
Paul Ivancic	Cervical Spine Injury During Simulated Automobile Collisions	Panjabi	2006
Eliezer Kahn	Computational Strategies for Meshfree Nonrigid Registration	Staib	2006
Jing Yang	Level Set Based Prior Models for Image Segmentation and Analysis	Duncan	2005
James Beaty	Automated Colonic Polyp Detection Using Computed Tomography Data	Tagare	2005
Xiaoning Qian	Shape Indexing and Its Optimization in Medical Image Databases	Tagare	2005
Zhong Tao	Tunneling Descent: A New Strategy for Active Contour Segmentation of Ultrasound Images	Tagare	2005
Reshma Munbodh (EE)	Achieving Accurate, Automated Image Registration for Prostate Radiotherapy	Duncan	2005

MD/PHD

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