

Biomedical Technologies

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Oncology/Hematology/Angiogenesis

Indication	Target	Therapeutic Description	Stage of Development	Patents	Faculty
Breast Cancer	Metastatic Breast Cancer	Engineered HSV for cancer immunotherapy	Preliminary data confirmed in mouse models	PCT application Pending	Bin He
Breast Cancer, Estrogen Positive	Estrogen Receptor	Brain penetrating Selective Estrogen Receptor Degraders	In vitro data, In vivo pending	US patent 10,118,910; PCT patent applications pending	Greg Thatcher, Rui Xiong and Debra Tonetti
Tumor & Ocular Angiogenesis	VEGF regulation	Peptide based inhibitor of VEGF activation	In vitro validation and early in vivo studies in a mouse lung cancer model	National Stage Filings (US, EP, AU, NZ, JP, CN, BR, IN, IL, CA, SG)	Kaori Yamada & Asrar Malik
Tumor & Ocular Angiogenesis	VEGF activation	Fusion peptide inhibitor based on Histatins	In vitro data, In vivo data	National Stage Filings	Vinay Aakalu
Acute Lymphocytic Leukemia	Asparagine Depletion via Asparaginase enzyme	Engineered selective Asparaginases that are safer to use in adult cancer patients	Biochemical and in vivo animal validated biologics	PCT application Pending	Arnon Lavie
Pancreatic cancer and Ovarian Cancer	Novel Fusion Protein - confidential targets	Fusion protein that rapidly eliminates pancreatic cancer cells in animals.	Validated in xenograft studies to completely eliminate pancreatic cell lines implanted in rodents	PCT Patent Pending and Provisional Applications on newer IP	Arnon Lavie
Prostate Cancer	PSA and TEM8	Vaccine combining a PSA (Prostate specific) peptide and a TEM-8 (Tumor endothelial marker 8) peptide plus GM-CSF	PSA peptide/GM-CSF vaccine has been tested in a phase I human clinical trial; the combination with a TEM-8 peptide is currently being tested in vivo	US Patent 8,557,777	David Peace

Oncology/Hematology/Angiogenesis

Indication	Target	Therapeutic Description	Stage of Development	Patents	Faculty
Metastatic Breast Cancer (BC) Cell Models	Estrogen Receptor & specific kinases	When BC Mets become resistant to tamoxifen, ER-targeting agents become a valuable therapeutic option.	Cellular and xenograft/PDX models of tamoxifen resistance have been used to validate novel SERDs and SEMs for preclinical /IND development.	Material license; pending	Debra Tonetti
Oncology, specifically Melanoma, MCL	HDAC6	isoxazole and urea core hydroxamic acids as selective histone deacetylase 6 inhibitors	Hydroxamic acid HDAC6 inhibitors with a novel core	PCT pending and National phase application	Alan Kozikowski, SS Shen & Alejandro Villagra
Triple Negative Breast Cancer (TNBC)	HDACs & kinases	Inhibition of specific kinases leads to increased efficacy of HDAC3 inhibitors in TNBC models	Novel HDAC inhibitor compounds are tested in cell models of triple negative breast cancer	Provisional Application	Pavel Pasha Petukhov & Jonna Frasor
Oncology	PARP agents	Cell Lines for determining PARP agents function	Research Tool to evaluate the activity of PARP inhibitors.	Material License	Lesley Hanakahi (not in the system)
Blood Disorders & Malignancies	Blood progenitor cells	Reprogramming and expansion of blood progenitor cells using valproic acid, or 5-aza-2'-deoxycytidine and trichostatin A	Currently testing in non-human primates in preparation for filing an IND	US Patent 7,927,785 US Patent Pending	Nadim Mahmud
Melanoma, Mantle Cell Lymphoma	Epigenetics: HDAC	Highly potent selective HDAC6 Inhibitors	Nexturastat series is the most advanced oncology validated HDAC inhibitor confirmed in melanoma animal models	Patents Pending	Alan Kozikowski
Oncology	RAD51 DNA repair pathway	Inhibitors of RAD 51 DNA repair pathway as a target for cancer therapy	Compounds are validated in prostate cancer xenograft rodent models	US Patent Pending	Alan Kozikowski & Philip Connell
Oncology	BET Bromodomain Inhibitors	BET proteins are involved in transcriptional and cell cycle regulation.	In vitro data characterized but awaiting in vivo validation.	Provisional application	Greg Thatcher and Rui Xiong

Neurology/Sleep Apnea

Indication	Target	Therapeutic Description	Stage of Development	Patents	Faculty
Amyotrophic Lateral Sclerosis (ALS)	Neuregulin Signaling	GlyB4 Fusion with Neuregulin Heparin-Targeting Domain to Block Neuregulin Signaling	Improves early chronic motor performance deficits, delays disease onset and prolongs survival in an ALS mouse model	US Patent 7,527,794 US 7994123 and EP Patent 1824879	Jeff Loeb
Parkinson's, Other Synucleinopathies	Protein Kinase C mu or Src-Family Tyrosine Kinase	Utilized a demonstrator compound inhibitors of protein kinase C mu and src family tyrosine kinase	Early stage in vitro studies	US Patent 8,618,063	Scott Brady
Alzheimer's Disease	Neuregulin Signaling	Treatment with GlyB4, a potent, targeted antagonist that blocks the endogenous neuregulin signaling	Data in mouse models	PCT application Pending	Jeff Loeb
Charcot Marie Tooth (CMT), Autism, Neuroprotection	HDAC6	Nanomolar inhibitors of HDAC6 highly selective over other HDACs	Compounds were dosed into transgenic models of CMT and successfully blunted the disease in a transgenic animal model	1 - US Patent 10,227,295; 2 - pending; 3 - pending	Alan Kozikowski
Sleep Apnea	Serotonin	Serotonin Receptor Antagonists +/- Selective Serotonin Reuptake Inhibitor •Ondansetron/Fluoxetine (repurposing)	Human clinical pilot showing efficacy; pre-clinical dose and dose-ratio optimized; pre-IND meeting with FDA	US Patents 6,331,536, 8,512,751 EP 1833467	David Carley & Miodrag Radulovacki
Sleep Apnea	CCK-B	CCK-B Receptor Antagonists	Rat model for obstructive sleep apnea	US Patent 8,053,413	David Carley & Miodrag Radulovacki

Neurology/Sleep Apnea

Indication	Target	Therapeutic Description	Stage of Development	Patents	Faculty
Alzheimer's Disease, Multiple Sclerosis	Noradrenaline	Combination of L-DOPS, carbidopa, and reboxetine	Prevents worsening of symptoms in AD and MS mouse models	US Patent 8,580,776	Doug Feinstein
Depression and other neurological diseases	LPC transporter at the blood brain barrier, MFSD2a	Deliver EPA to brain by transporting LPC-EPA through blood brain barrier transporter, MFSD2a	Increased level of both DHA and EPA in brain upon LPC-EPA administration in rodents.	US Patent Pending	Papasani Subbaiah
Alzheimer's Disease	Calpain Protease	Utilized caspase inhibitors on a rodent model of AD	Early stage in vivo studies	(1) Expired (2) Expired (3) US patent 9,403,843 and some pending	Greg Thatcher
Tolerance resulting from chronic opioid administration	Calcium Calmodulin Kinase (CaMKII)	Utilized an FDA approved drug & other preclinical compound inhibitors of CaM II kinase	Compound successfully attenuated experimentally induced nerve hypersensitivity caused by opioid drugs in preclinical models; human clinical trial validated this approach	(1) US Patent 7,256,200 - expired (2) US Patent 7,776,819	Zaijie (Jim) Wang
Schizophrenia, Autism, Addiction	Human 5HT2c; Serotonin Receptor	Compounds with superior safety and efficacy profile over FDA approved molecule; target is highly validated. These compounds may induce weight loss.	Compounds were characterized for preclinical assessment safety and PK profiling package, and are being evaluated for other CNS indications	US Patents 8,492,591, 8,754,132	Alan Kozikowski

Indication	Target	Therapeutic Description	Stage of Development	Patents	Faculty
Type 1 Diabetes	Antigen specific regulatory T-cells	Bispecific antibody targeted to GLUT2 and CTLA4	Validated in NOD diabetes mouse model	US Patents 8,822,649, 9,221,911, 10,072,081	Bellur Prabhakar
Asthma, Eosinophilic Esophagitis	CCR3, eosinophils	Peptide therapeutic to compete against Eotaxin and other chemokines as a treatment for asthma	In vivo experiments in eosinophil mouse model	PCT Patent Converted and CIP Pending	Steven Ackerman & Vadim Gaponenko
Wound Healing	Pro-regenerative cytokines & growth factors	Interferon gamma activated mesenchymal stem cells	Validated in primate & rodent models	US Patent 9,011,840	Amelia Bartholomew
Bone regeneration	Extracellular matrix	In vivo bioengineered exosome to create function/target specific and content release controlled exosome cargo	Preliminary proof of concept in rat calvarial defect model	Provisional Filed	Sriram Ravindran
Wound Healing	CCR10	Wound healing peptide with a novel target that greatly reduces healing time	<i>in vivo</i> diabetic mouse (<i>db/db</i>) model	Provisional Application	Richard Minshall
Obesity	Human 5HT2c Serotonin Receptor	Compounds with superior safety profile over Lorcaserin (a FDA approved weight loss drug by Arena) and excellent efficacy against target receptor	Compounds were thoroughly characterized for preclinical assessment safety and PK profiling package, and are being evaluated for other CNS indications	US Patents 8,492,591, 8,754,132 Patents Pending	Alan Kozikowski
Type I Diabetes	Pathway inhibitor Regeneration of new insulin-producing cells from pancreatic duct cells in vivo through Notch signal suppression	Genetic blockade of gene X in duct cells develop a therapeutic that induces beta-cell regeneration in diabetes patients	Early proof of target	Provisional Filed	Solomon Afelik

Indication	Target	Therapeutic Description	Stage of Development	Patents	Faculty
Type 1 Diabetes	Antigen specific regulatory T-cells	Bispecific antibody targeted to GLUT2 and CTLA4	Validated in NOD diabetes mouse model	US Patents 8,822,649, 9,221,911 10,072,081	Bellur Prabhakar
Asthma, Eosinophilic Esophagitis	CCR3, eosinophils	Peptide therapeutic to compete against Eotaxin and other chemokines as a treatment for asthma	In vivo experiments in eosinophil mouse model	Patent Pending US, EP, CA	Steven Ackerman & Vadim Gaponenko
Gene Therapy	Platform CRISPR	Novel CRISPR global cellular control system. Next generation activatable guide RNA -CRISPR cas9 platform	Cellular and biochemical proof of concept	PCT Application	Brad Merrill & Ryan Clarke
Rheumatoid Arthritis, Inflammatory Bowel Disease, Ulcerative colitis	Epigenetics: HDAC6	HDAC6 Selective Inhibitors: nanomolar and sub nanomolar inhibitors of HDAC6	Potent HDAC6 inhibitors successfully prevented cardiac organ transplant rejection in rodent model; also prevented experimentally induced ulcerative colitis in rodents	Patents Pending	Alan Kozikowski
Type I Diabetes	Pathway inhibitor	Genetic blockade of gene X in duct cells	Early proof of target	Patents Pending	Solomon Afelik

Drug Delivery

Target	Therapeutic Description	Stage of Development	Patents	Faculty
HSV-1 and HSV-2	DECON particles	In vivo mouse data	Provisional filed	Deepak Shukla, Teja Yadavalli
Opioid Receptors	Dermorphinin Analogues for the Target-Delivery of Novel Therapies for Pain and Opioid Addiction	Effective delivery in rodent models	US Patent 7,776,819	Jim ZaiJie Wang
Non-specific	Toroidal-spiral design allows for two different drugs to be released at two different rates	No animal data to date	US Patents 8,852,645 and 9,974,839	Ludwig Nitsche & Ying Liu
Endothelial cells	Myeloperoxidase-derived peptide	Validation of specific delivery of peptidelinked compounds into sub-endothelial spaces in mouse models	US Patent 7,429,563	Chinnaswamy Tiruppathi & Asrar Malik
Non-specific	FDA-approved biomaterials employed in proprietary micelle nano-particle	Very extensive animal validation	Provisional filed	Hayat Onyuksel
Dermal delivery	Hydrogel to treat wound healing	Proof of concept in animals shows efficacy of repurposed FDA-approved drug to facilitate wound healing in diabetic animal model. Human clinical trial in preparation	Provisional Patent in preparation	Al Mancini, Tim Koh, Paul Pluta
Extracellular matrix	In vivo bioengineered exosome to create function/target specific and content release controlled exosome cargo	Preliminary proof of concept in rat calvarial defect model	Provisional Patent	Sriram Ravindran
Non-specific	Nano-hybrid delivery system for anticancer, anti-viral and anti-angiogenic agents	No animal data to date	US Patent 9,168,225	Seungpyo Hong

Indication	Target	Therapeutic Description	Stage of Development	Patents	Faculty
Thrombosis, blood disorders, cancer	Platelet Adhesion Receptor Inhibitors	Inhibitory peptides of the interaction between 14-3-3 Protein and Glycoprotein Ib-IX Complex	In vitro and early in vivo studies	US Patent 8,173,595	Xiaoping Du
Sudden Cardiac Arrest	Phosphatase inhibitors	Peptide that mimics cooling for neuroprotection	Efficacy in mouse and pig models	US, EU, JP, AU, and CA Patents Pending	Terry Vanden Hoek, Jing Li, and Xiangdong Zhu
Thrombosis, sepsis	Von Willebrand factor	Inhibitory peptide	In vitro and early in vivo studies	US Patent 9,796,757	Richard Minshall
Ischemic cardiovascular diseases	Autologous endothelial and erythroblast cells	Method to produce erythro-angioblast progenitor cells from fibroblasts	In vitro and early in vivo studies in rodent models	PCT Patent Pending	Jalees Rehman & Asrar Malik
Pulmonary Arterial Hypertension	Visfatin/Pbef/ Nampt inhibition	Small molecule Inhibitors	Small molecules show efficacy against NAMPT Enzymatic activity	PCT application Pending	Tom Driver
Ischemic cardiovascular diseases	Autologous endothelial cells	Method to produce autologous human endothelial cells from human postnatal dermal fibroblasts	In vitro and early in vivo studies in rodent models	US Allowed	Changwon Park
Radiation-induced lung injury	Pbef/Nampt inhibition	Humanized Pbef antibodies	Proof of principle validated in rodent model; antibody development and testing ongoing	US Patent 9,409,983	Joe Garcia

Anti-Infectives

Indication	Target	Therapeutic Description	Stage of Development	Patents	Faculty
Lymphatic filariasis	Three conserved filarial surface proteins	Vaccine (Purified Protein and/or DNA)	Proof of Principle studies in a primate model of infection ongoing	(1) Provisional filed (2) US 10,072,054 CN ZL201180064793.8 more patents pending	K. Ramaswamy
Hepatitis C	NPC1L1	Ezetimibe (Zetia – repurposed)	In vivo validation in a mouse model of HCV infection	US Patents 8,673,288, 9,034,863	Susan Uprichard
Dental Caries/Biofilm inhibition	Bacterial pathogens that produce a biofilm matrix	Cerium (IV) nanoparticles that behave as biofilm inhibitors againsts the bacteria but not lethal to the cells at lower concentration.	Early stage, in vitro validation and cell toxicity evaluation	US Patent Pending	Russell Pesavento
Herpes	Viral binding and cell entry	Inhibitory peptide	In vivo validation in a mouse model of HSV infection	US Patent 9,464,113	Deepak Shukla
Herpes	Multiple	Live Attenuated HSV Vaccine	Fine tuning of attenuation profile underway	US Patent 8,765,444	Bin He
Herpes	HSV-1 and HSV-2	DECON particles	In vivo mouse data	Provisional filed	Deepak Shukla, Teja Yadavalli

Anti-Infectives

Indication	Target	Therapeutic Description	Stage of Development	Patents	Faculty
TB	Multiple	Macrolides and small molecule antibiotics	In vitro validation	US 9,090,667 Patents Issued CH, JP, KR, EP Patents Pending	Scott Franzblau
TB and Cystic Fibrosis Pathogens	Multiple	Small molecule therapeutics	Animal data available for best lead molecule against XDR and MDR TB	PCT converted (1) and Provisional expired (2)	Alan Kozikowski, William Bishai & Laurent Kremer
Ebola	Ebola virus	Small molecule anti-virals	In vitro validation	Provisional filed	Rui Xiong, Lijun Rong, Irina Gaisina
MRSA	vraSR Operon	Small molecule inhibitors of MRSA related OPERON.	In vitro cellular demonstration of technology	US Patent 9,675,592	Mike E Johnson, Robert Daum & Susan Boyle-Vavra
MERS Virus, SARS	Papain-like Viral Protease	Inhibitors of Viral replication against the Middle East Respiratory Syndrome virus	Early stage program with viable hit to	Material License	Mike E Johnson
Ebola	Ebola virus reagent	Synthetic Ebola glycoprotein cell line and drug screen	Used in drug discovery	Material License	Lijun Rong
HIV	Reverse Transcriptase	Novel compounds from natural sources that inhibit HIV viral replication	Validated in viral assays	US Patent Pending UK, EP and GE Patents Issued IIA-UIC not lead	Lijun Rong, Djaja Soejarto & HongJie Zhang

Diagnostics

Disease/Condition	Target/Marker	Stage of Development	Patents	Faculty
Rheumatoid Arthritis	Several Biomarkers	Patient Data from 41 year community based, case-control cohort study	Technical Information	Edward Barbour
Epilepsy	Metabolite expression profile using MRI Spectroscopy	Identified in human epileptic brain tissue	US Patent Pending	Jeff Loeb
Pancreatic Cancer	PCR-based assay using multiple data-driven targets to create an optimized model that can predict IPMN with high-malignant potential with up to 86% accuracy	Assay run on multinational human pancreatic cancer cyst fluid	PCT filed	Ajay Maker
Breast Cancer	Estrogen receptor binding agent	In vitro development in progress	US patent pending	Stephen DiMagno Gregory Thatcher Debra Tonetti
Idiopathic Pulmonary Fibrosis	Peripheral blood biomarkers	Validated in a small set of human samples	US Patent 10,036,069 (IIA-UI Not Leading)	Joe Garcia
Radiation-induced gastrointestinal injury	Reactive oxygen species	Validated in a mouse model	US Patent 9,643,985	Marcelo Bonini
Metastatic cancer	Biomimetic device for capturing Circulating Tumor Cells and cancer stem cells	Validated using both human primary cancer cells and cell lines	Patents Pending	Howard Ozer
Cellular Lipids	In Situ Quantitative imaging with specific molecular sensors for detection from Cholesterol to Cancer	Demonstration of several in situ molecular sensors	Material License	Wonhwa Cho
Cancer	Transcriptome analytics to predict disease progression and determine personalized therapeutics	Validated in human breast cancer	US Patent Pending 15/026,884	Yves Lussier
Dry Eye Disease, Sjogren's GVHD	Histatin Biomarkers	In vivo data	PCT filed	Vinay Aakalu, Sandeep Jain

Disease/Condition	Target	Target/Marker	Stage of Development	Patents	Faculty
Dry eye, retinopathy, angiogenesis	VEGF Activation	Fusion peptide inhibitor based on Histaminesm. Applications in wound healing, metal ion chelation, anti-inflammatory effects and angiogenesis	In vitro data, In vivo data in mouse	PCT Patent Pending	Vinay Aakalu
Tumor & Ocular Angiogenesis	VEGF regulation	Peptide based inhibitor of VEGF activation	In vitro validation and early in vivo studies in a mouse lung cancer model	National Stage Filings (US, EP, AU, NZ, JP, CN, BR, IN, IL, CA, SG)	Kaori Yamada & Asrar Malik
DNAase	Dry eye disease	Tear deficient dry eye disease	Phase I/II human clinical trial completed	Nationalized PCT Issued US 9,867,871	Sandeep Jain
Dry Eye, MGB, oGVHD, Sjogren's	Dry eye disease	Immunotherapy for dry eye disease	Investigator initiated IND	PCT filed	Sandeep Jain
Corneal Scarring, Ocular Angiogenesis	PAX 6	MEK inhibitors can limit the corneal scarring, opacification and neovascularization in severe corneal injury and disease	in vivo murine model	Provisional filed	Ali Djalilian
Ocular Surface Toxicity	Bacterial Keratitis	Neutralization of alpha toxin in the eye Therapeutic Use of Secreted Factors from Corneal Mesenchymal Cells	In vitro data	Patents Pending	Ali Djalilian
Ocular Surface Toxicity	Ocular Surface disease	BAK removal, treatment of damaged epithelial cells	in vivo murine model	Patents Pending	Ali Djalilian

Medical Devices -Ophthalmology

Device	Function	Stage of Development	Patents	Faculty
Non-contact non-mydriatic fundus camera Ultra wide angle	By freeing the pupil for collecting imaging light only, trans-pars-planar illumination enables >200ofundus view in single-shot images	Prototype, some human data	PCT Pending	Xincheng Yao
Multimodal OCT for concurrent imaging of retinal neural activity and vascular hemodynamics	Fosters the study of neurovascular coupling mechanisms in the retina, providing a new method for retinal disease detection and diagnosis.	Prototype	PCT Pending	Xincheng Yao
Miniaturized indirect ophthalmoscopy	Miniaturized indirect ophthalmoscopy for wide-field fundus photography.	Prototype, some human data	PCT Pending	Xincheng Yao
Novel Keratoprotheses	Sutureless Keratoprosthesis with flexible component for treatment of corneal blindness	Numerous prototypes, rabbit data	PCT Pending	Mark Rosenblatt Charles Yu
Vision Restoration System	A system for projecting electronic visual information into the eye. May be fixated in the lens capsule, haptics, or sutures to the eye wall	Prototype	Provisional (1) and PCT pending (2)	Mark Rosenblatt Charles Yu
Ophthalmology	Intra-vitreous injections	Prototype, animal data	provisional filed	Yannek Leiderman
Corneal Blindness	Medical Device	Device for projection onto retina from corneal blindness	PCT Patent Pending	Mark Rosenblatt, Charles Yu
Ophthalmology	Intra-vitreous injections	Prototype, animal data	provisional filed	Yannek Leiderman

Medical Devices

Device	Function	Stage of Development	Patents	Faculty
Spinal surgical implant	A surgical implant for use in patients needing surgical correction of deformity of the spine	Prototypes developed	PCT Patent Pending	Sergey Neckrysh
Operating table Patient Stabilizer	Operating table for procedures in the Trendelenburg position to reduce stress on nerves and prevent musculoskeletal injury	Prototype	PCT Pending	Michael Young
Ankle Stroke Rehab Device	Affordable at-home digital rehabilitation device for post-stroke ankle recovery.	Prototype	Provisional	Sangeetha Madhavan
Extendable Intravenous Catheter	A catheter designed for pediatric patients	Prototype being developed	US Patent 9,517,324	Girish Desphande
Urine Flow Meter	Automated Urineometer for ICO	Prototype	US patent pending	Michael Young etc
Device for insertion of spinal cord stimulation paddle electrodes	This device decreases pressure on the midline spinal structures, primarily the spinal cord, and instead main pressure points will be at the lateral aspects of the spinal canal, away from the spinal cord itself	Theoretical concept exists	US Patent 9,351,752	Konstantin Slavin
Type I Diabetes	Novel islet transport	Mathematical Model	Algorithm	Jose Oberholzer
Jaw-Thrust and Immobilization Device	A device to open and maintain an airway in an unconscious patient without any continuous attention	Tested using a human patient simulator in an obstructed airway state	US Patent 9,125,745	Girish Desphande
Endotracheal tube	A two port endotracheal tube designed to decrease the incidence of unplanned extubations with (1) a straight port used during intubation for suction tubing and introduction of other instruments (e.g., bronchoscope, in-line suction, or endotracheal tube exchanger devices) and (2) a distal (curved port) used for connecting endotracheal tube to a ventilator and sensors used for end-tidal CO2 measurement	Fully-functional prototype being tested in mannequin models	US Patent 8,991,396	Girish Desphande
Large Memory Storage And Retrieval (LAMSTAR) neural network (NN)	A method that predicts the occurrence of individual episodes of obstructive apnea during sleep, and which can be integrated into current CPAP systems to reduce occurrences of apnea episodes	Human trials have been conducted.	US Patent 8,775,340	Jonathon Waxman, David Carley & Daniel Graupe
Transcorneal Telescope	Visual aid for vision impairment due to eye diseases	Prototype being developed	US Patent 8,506,626	Jose de la Cruz

Software, Educational Programs, and Copyright Materials

Indication	Target	Description	Stage of Development	Intellectual Property	Faculty
My IDEA	Drug-Eluting Stent	My IDEA: Patient-Centered Tablet Application for Improving Medication Adherence after a Drug-Eluting Stent	Clinical trials with patients have been conducted. https://www.frontiersin.org/articles/10.3389/fpubh.2016.00272/full	Copyright	Andrew Boyd
BiAffect	Bipolar Disorder	A smartphone application that enables monitoring of non-verbal speech using keyboard dynamics, meta-data, and related mobile sensor information to infer the users' neuropsychological state	Launched prototype (app) for clinical validation Available for download at https://itunes.apple.com/us/app/biaffect/id1355144276?ls=1&mt=8	Copyright PCT pending	Alex Leow
DiaBetty	Diabetes	Technology-enabled diabetes coach that provides ongoing diabetes self-management support in a mood-sensitive manner for patients through use of their cell phone	Software app is in development	Copyright PCT pending	Ben Gerber Alex Leow Olusola Ajilore Faraz Hussain Jun Ma
Fit-N Strong	Osteoarthritis	An evidence-based exercise program to treat osteoarthritis. This program is currently being taught in almost 100 sites in 24 states.	https://www.fitandstrong.org/	Copyright	Susan Hughes
DEEP	Diabetes	This is a diabetes education and self-management program endorsed by CMS	Commercially deployed	Copyright	Amparo Castillo
LUPUS- PRO	SLE Lupus	Patient Reported Outcomes Questionnaire	Used by pharmaceutical and clinical units to gauge disease severity http://www.lupuspro.com/information.html	Copyright	Alan Simon Pickard Meenakshi Jolly
Medicinal Cannabis Technical Manuals	Medical Marijuana/Cannabis	Laboratory protocols describing the processing of medical cannabinoid products	Turn-key validated protocols	Copyright	Jennifer Bash
CATCH-IT	Adolescent depression	Evidence based computerized cognitive behavioral therapy for depressed adolescents	Clinical trials with patients have been conducted. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6290998/	Copyright	Benjamin Van Voorhees
LEAD Experience	Legislative Education & Advocacy Development	Interdisciplinary software (learning module) designed to teach health policy to medical students	2 week program that has already been rolled out in some states	Copyright	James Ronayne

Company	Technology	Website	Type	Faculty
Actuate Therapeutics	Highly Selective GSK3 inhibitors for Oncology and CNS indications	https://actuatetherapeutics.com	Therapeutic	Alan Kozikowski
Adaptae	Tumor stem cells therapeutics, diagnostics and research tools	https://actuatetherapeutics.com	Therapeutic	Jim Radosevich
Advaite	Anti-inflammatory in ocular surface diseases	http://advaita.com/	Therapeutic	Sandeep Jain
Capio Biosciences	Circulating tumor cell capture device for diagnostic applications. Successfully raised \$2M in start up funding.	http://www.capiobiosciences.com/	Diagnostic	Seungpyo Hong
CDG Therapeutics	Peptide based drugs for treating neuroblastoma and other cancers	http://www.cdgti.com	Therapeutic	Ananda Chakrabarty & Tapas Das Gupta
Cell Biologics	Therapeutics for treating sepsis and other pulmonary indications; primary cultured cells and cell culture products	http://www.cellbiologics.com	Therapeutic & Reagents	Asrar Malik
DuPage Medical	Peptide based anti-thrombotics that don't cause bleeding		Therapeutic	Xiaoping Du
Dystrogen Therapeutics	Chimeric Cell Therapy for Treating Muscular Dystrophy including Duchenne Muscular Dystrophy (DMD)	http://dystrogen.com/	Therapeutic	Maria Seimionow
Enzyme by Design	Safer asparaginase proteins that have been designed to minimize glutaminase activity for treating cancer	https://www.enzymebydesign.com/	Therapeutic	Arnon Lavie
EpiDestiny	Decitabine formulation for treating blood related cancers and indications including sickle cell anemia		Therapeutic	Yogen Sauntharajah & Joe DeSimone
FertilityABC	Software (app) for primary care physicians, their patients, and Resident physicians to provide guidance on methods besides in vitro fertilization to increase opportunity/likelihood for pregnancy		Software Application	John Holden
Immersive Touch	Simulation based surgical training and exploration which immerses surgeons in a digitally replicated operating environment with high-fidelity 3D virtual anatomies and haptic instrument replicates	http://www.immersivetouch.com	Software	Pat Banerjee
Jivana Biotechnology	siRNA technology targeting breast, lung, and liver cancer	http://www.jivanabiotech.com	Therapeutic	Bellur Prabhakar
Laurel Therapeutics	Peptide based therapy for treating diseases associated with ocular angiogenesis		Therapeutic	Yulia Komarova & Asrar Malik

Company	Technology	Website	Type	Faculty
NexHand	Sensor-based "smart surgical glove" technology designed to enable physicians to assess the severity of stress urinary incontinence		Device	Craig Neiderberger
Ocugen	Ocular graft versus host disease	https://ocugen.com/	Therapeutic	Sandeep Jain
OrthoAccel Technologies	Hands-free device designed for faster orthodontic treatment	http://acceledent.com	Device	Jeremy Mao
PAX Neuroscience	Blood based test for evaluating antidepressant efficacy and diagnosing depression	http://www.paxneuroscience.com	Diagnostic	Mark Rasenick
Progenicyte	Adult stem cell and genetic analyses and therapies for hair loss restoration and tissue regeneration	http://progenicyte.com	Therapeutic	Kiminobu Sugaya
Remote Vital Monitoring	Coma Alert a device that provides ongoing, continuous monitoring of brainstem integrity	http://remotevitalmonitoring.com	Device	Jim Stone
RespireRX	Novel drug therapies for sleep apnea, drug-induced respiratory depression, and other brain-medicated breathing disorders	http://www.respirerx.com/	Therapeutic	David Carley
RetMap	CLEAR Lens records ERG signals from multiple locations on the cornea simultaneously, which enables sensitive detection of local areas of dysfunction without the need to use complex visual stimuli	http://retmapinc.com	Device	John Hetling
Revivo Therapeutics	Novel methylthiazoles for CNS indications with the lead molecule well tolerated in a Phase 1 study in healthy volunteers	http://www.revivotherapeutics.com/	Therapeutic	Greg Thatcher
Sahane Biotech	Recombinant protein therapy for in vivo expansion of regulatory t cells for treating type 1 diabetes & other autoimmune disorders		Therapeutic	Bellur Prabhakar
Simplified Data Tracking	Software for data management of research laboratories	http://simplifieddatatracking.com	Software	Oscar Colomonic
Sphingo Therapeutics	Selective inhibitors of sphingosine kinase 1 (SphK1) for treating pulmonary disorders, e.g., Bronchopulmonary dysplasia (BPD)		Therapeutic	Anantha Harajith & Viswanathan Natarajan
Tianhe Stem Cell Biotechnologies	Stem Cell Educator Therapy is a treatment of autoimmune related diseases using stem cells drawn from human umbilical-cord blood	http://www.tianhecell.com	Device & Therapeutic	Yong Zhao
TTC Oncology	Clinical stage hormone receptor modulators for treating cancer	https://www.ttconcolology.com/	Therapeutic	Greg Thatcher
VasSol	MRI-based quantification of blood flow in vessels	http://www.vassolinc.com	Diagnostic	Fady Charbel
Yaso Biotech	Therapeutic and prophylactic agent for sexually transmitted viral pathogens with contraceptive properties	http://www.yasotherapeutics.com/	Therapeutic	Alex Kronic & Don Waller