

# Biomedical Technologies



otm.uic.edu  
312.996.7018  
otm@uic.edu



- 1 Oncology/  
Hematology/  
Angiogenesis
- 3 Neurology/  
Sleep Apnea
- 5 Metabolic/  
Wounds
- 6 Immunology/  
Gene Therapy/  
Cell Therapy
- 8 Cardio-  
Pulmonary
- 10 Anti-Infectives
- 12 Drug Delivery
- 14 Diagnostics
- 16 Ophthalmology
- 18 Ophthalmology  
Devices
- 20 Medical Devices/  
Medical Imaging
- 23 Software
- 24 Rare Diseases
- 27 Startups

# Oncology/Hematology/Angiogenesis

Indication	Target	Therapeutic Description	Stage of Development	Patents	Faculty
<b>Tumor &amp; Ocular Angiogenesis</b>	VEGF activation	Fusion peptide inhibitor based on Histatins	<b>Preclinical: in vivo</b>	US Patent 10,800,822 Nationalized in EP, CN and JP	Vinay Aakalu
<b>Tumor &amp; Ocular Angiogenesis</b>	Selective VEGF regulation through KAI	Peptide based inhibitor of VEGF activation	<b>Preclinical: in vivo</b> In vitro validation and early in vivo studies in a mouse lung cancer model	US Patent 11,299,524 AU Patent Allowed Nationalized in EP, NZ, JP and CN Divisional in SP	Kaori Yamada & Asrar Malik
<b>Prostate Cancer</b>	PSA and TEM8	Vaccine combining a PSA (Prostate specific) peptide and a TEM-8 (Tumor endothelial marker 8) peptide plus GM-CSF	<b>Phase I:</b> PSA peptide vaccine <b>Preclinical: in vivo</b> PSA peptide vaccine/TEM-8 peptide - <i>in vivo</i> mouse data	US Patent 8,557,777	David Peace
<b>Ovarian Cancer</b>	Unknown	Verticillins have shown promising anticancer qualities	<b>Preclinical: in vitro</b>	Nationalized in US and EP	Joanna Burdette
<b>Anti-Cancer Drug Platform With Potential as a Mono or Combo Therapy</b>	AD5/35.IR-E1A/MADD is a new capsid-modified Ad5 vector developed to specifically target tumor cells following intravenous or intratumoral application with a reduced immune response.	MADD up-regulation in cancer, its role in regulating apoptosis, and the combination of MADD knockdown with chemotherapy drugs	<b>Preclinical: in vitro</b> Tested in certain cancer cell lines (leukemia, pancreatic, breast, liver, lung and ovarian cancer cell lines). The combination can overcome resistance and reduce the dose of chemotherapy agents  Potential systemic delivery	US Patents 11,273,172 and 7,910,723	Bellur Prabhakar, Shikla Saini & Aditi Mathur
<b>Oncology, specifically Melanoma, MCL</b>	HDAC6	Potent and Selective Inhibitors of Histone Deacetylase 6 (HDAC6)	<b>Preclinical: in vivo</b>	US Patent 10,456,394	Alan Kozikowski, SS Shen & Joel Bergman
<b>Oncology, specifically Melanoma, MCL</b>	Epigenetics: HDAC	Highly potent selective HDAC6 Inhibitors	<b>Preclinical: in vivo</b> Nexturastat series is the most advanced oncology validated HDAC inhibitor confirmed in melanoma animal models	US Patent 9,409,858 JP Patent Issued Nationalized in CA	Alan Kozikowski

# Oncology/Hematology/Angiogenesis

Indication	Target	Therapeutic Description	Stage of Development	Patents	Faculty
Oncology	RAD51 DNA repair pathway	Inhibitors of RAD 51 DNA repair pathway as a target for cancer therapy	<b>Preclinical: in vivo</b> Compounds are validated in prostate cancer xenograft rodent models	Nationalized in US	Alan Kozikowski & Philip Connell
Oncology	PARP agents	Cell Lines for determining PARP agents function	Research Tool to evaluate the activity of PARP inhibitors.	Material License	Leslyn Hanakahi
Oncology	Syk Kinase	Novel Syk inhibitors potently suppress the growth of leukemia cells and overcome resistance	<b>Preclinical: In vitro</b>	Provisional Filed	Won Hwa Cho
Oncology	Initial data in metastatic breast cancer, as well as colon, liver, lung, prostate, and skin cancer	Engineered HSV oncolytic virus for cancer immunotherapy	<b>Preclinical: in vivo</b> Preliminary data confirmed in mouse models	Nationalized in US, EP, AU, CN, SK, JP and IN	Bin He
Oncology	BET Bromodomain Inhibitors	BET proteins are involved in transcriptional and cell cycle regulation.	<b>Preclinical: in vitro</b> Awaiting in vivo data	Nationalized in US, EP, CN and CA	Greg Thatcher and Rui Xiong
Breast Cancer, Estrogen Positive	Estrogen Receptor	Brain penetrating Selective Estrogen Receptor Degraders	<b>Preclinical: In vitro</b>	Nationalized in US, EP, CN, JP, SK and CN	Greg Thatcher, Rui Xiong and Debra Tonetti
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.	<b>Pre-IND</b> Cellular and xenograft/PDX models of tamoxifen resistance have been used to validate novel SERDs and SEMs for preclinical /IND development.	Material license available	Debra Tonetti
Triple Negative Breast Cancer (TNBC)	HDACs & kinases	Inhibition of specific kinases leads to increased efficacy of HDAC3 inhibitors in TNBC models	<b>Preclinical: in vitro</b> Novel HDAC inhibitor compounds are tested in cell models of triple negative breast cancer	Research Tools, No Patents	Pavel Pasha Petukhov & Jonna Frasor

Indication	Target	Therapeutic Description	Stage of Development	Patents	Faculty
<b>Amyotrophic Lateral Sclerosis (ALS)</b>	Neuregulin Signaling	GlyB4 Fusion with Neuregulin Heparin-Targeting Domain to Block Neuregulin Signaling	<b>Preclinical: in vivo</b> Improves early chronic motor performance deficits, delays disease onset and prolongs survival in an ALS mouse model	US Patent 7,527,794 US Patent 7,994,123 EP Patent 1,824,879	Jeff Loeb
<b>Alzheimer's Disease</b>	Neuregulin Signaling	Treatment with GlyB4, a potent, targeted antagonist that blocks the endogenous neuregulin signaling	<b>Preclinical: in vivo</b> Data in mouse models	PCT Patent Pending	Jeff Loeb
<b>Alzheimer's Disease</b>	ABCA1	Non-Lipogenic ABCA1 Inducers for Type 2 Diabetes and Alzheimer's Disease	<b>Preclinical: in vivo</b>	PCT Patent Pending	Greg Thatcher Brian Layden Mary Jo Ladu
<b>Alzheimer's Disease</b>	Calpain Protease	Utilized caspase inhibitors on a rodent model of AD	<b>Preclinical: in vivo</b> Early stage in vivo studies	Nationalization	Greg Thatcher
<b>Depression and other neurological diseases</b>	LPC transporter at the blood brain barrier, MFSD2a	Deliver EPA to brain by transporting LPC-EPA through blood brain barrier transporter, MFSD2a	<b>Preclinical: in vivo</b> Increased level of both DHA and EPA in brain upon LPC-EPA administration in rodents.	US Patent 10,555,957	Papasani Subbaiah
<b>Depression, Anxiety, &amp; Fear</b>	Allopregnanolone Stimulators	Derivatives of the neurosteroid allopregnanolone for non-responders of SSRIs	<b>Preclinical: in vivo</b> Early-stage in vivo mouse studies	US Patent Pending Nationalization US, EP, CA, and AU	Graziano Pinna
<b>PTSD, anxiety disorders, premenstrual dysphoria, &amp; impulsivity</b>	PPAR-alpha receptor	PEA induces an improvement of behavioral deficits by affecting the expression of target genes involved in cell proliferation, cell differentiation and in immune and inflammation responses	<b>Preclinical: in vivo</b> in vivo mouse models	US Patent Pending	Graziano Pinna & Locci Andrea

# Neurology/Sleep Apnea

Indication	Target	Therapeutic Description	Stage of Development	Patents	Faculty
Pain Management	Mu Opioid Receptor	Partial Mu Opioid Receptor Agonists Derived from Akuamma Alkaloids	<b>Preclinical: Receptor binding validation</b>	Provisional Filed	Andrew Riley
Pain Management	kappa Opioid Receptor	Kappa Opioid Receptor Agonist Derived from Akuammicine	<b>Preclinical: Receptor binding validation</b>	Provisional Filed	Andrew Riley
Addiction	Nicotinic Receptor	Subtype Selective Nicotinic Acetylcholine Receptor Inhibitors	<b>Preclinical: Receptor binding validation</b>	Provisional Filed	Andrew Riley
Sleep Apnea	Serotonin	Serotonin Receptor Antagonists +/- Selective Serotonin Reuptake Inhibitor •Ondansetron/Fluoxetine (repurposing)	<b>Phase I:</b> 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 Patent Issued	Roman Rariy and Michael Hefferman
Parkinson's, Other Synucleinopathies	Protein Kinase C mu or Src-Family Tyrosine Kinase	Utilized a demonstrator compound as inhibitors of protein kinase C mu and src family tyrosine kinase	<b>Preclinical: in vitro</b>	US Patent 8,618,063	Scott Brady
Charcot Marie Tooth (CMT), Autism, Neuroprotection	HDAC6	Nanomolar inhibitors of HDAC6 highly selective over other HDACs	<b>Preclinical: in vivo</b> Compounds were dosed into transgenic models of CMT and successfully blunted the disease in a transgenic animal model	US Patents 10,456,394 and 9,409,858  JP Patent Issued  Nationalized in CA and EP	Alan Kozikowski
Tolerance resulting from chronic opioid administration	Calcium Calmodulin Kinase (CaMKII)	Utilized an FDA approved drug & other preclinical compound inhibitors of CaM II kinase	<b>Phase I:</b> Compound successfully attenuated experimentally induced nerve hypersensitivity caused by opioid drugs in preclinical models; human clinical trial validated this approach	US Patents 7,776,819 7,256,200	Zaijie (Jim) Wang
Metabolic and neurological disorders	NAMPT activators	Enhancement of NAD through boosting of NAMPT activity or dietary supplementation alleviates AD symptoms in mice	<b>Preclinical: HIT and Assay Optimization</b>	PCT Patent Pending Provisional Filed	Rui Xiong, Gregory Thatcher, Kiira Ratia & Manel Ben Aissa

# Metabolic/Wounds

Indication	Target	Therapeutic Description	Stage of Development	Patents	Faculty
<b>Niemann-Pick</b>	TMEM 97 or NPC 1	Small peptide (5 AA)	<b>Preclinical: in vivo assays</b>	PCT Patent Pending	Vinay Aakalu
<b>Wound Healing</b>	Pro-regenerative cytokines & growth factors	Interferon gamma activated mesenchymal stem cells	<b>Preclinical: in vivo</b> Dose range finding. Validated in primate & rodent models	US Patent 9,011,840	Amelia Bartholomew
<b>Wound Healing</b>	CCR10	Wound healing peptide with a novel target that greatly reduces healing time	<b>Preclinical: in vivo</b> Diabetic mouse ( <i>db/db</i> ) model	Nationalized in US, EP, CA, MX, JP and SK	Richard Minshall
<b>Wound Healing, COPD, multiple sclerosis and diabetes</b>	Inhibitors of Keap1/Nrf2 Protein-Protein Interaction	Mechanism is validated by empirical validation in rodent	<b>Preclinical: in vivo</b>	US, EP, AU, CN, JP, CN Pending	Terry Moore
<b>Type 1 Diabetes</b>	Targets both Notch3 and OX40 receptors on Tregs	Expansion of natural regulatory T cells by Jagged-1 and OX40L stimulation to suppress autoimmunity (through combination therapy or chimeric fusion protein)	<b>Preclinical: in vivo</b> Validated in NOD diabetes mouse model  Seeking funding to expand studies and pursue human clinical trials	US Patents 10,696,946  Continuation Patent Pending  Nationalized in US, EP and IN	Bellur Prabhakar
<b>Bone regeneration</b>	Extracellular matrix	In vivo bioengineered exosome to create function/target specific and content release controlled exosome cargo	<b>Preclinical: in vivo</b> Preliminary proof of concept in rat calvarial defect model	Nationalized in US, EP, AU, and CA	Sriram Ravindran

# Immunology/Gene Therapy/Cell Therapy

Indication	Target	Therapeutic Description	Stage of Development	Patents	Faculty
<b>Autoimmune diseases including Type 1 Diabetes, Lupus, RA</b>	Targets both Notch3 and OX40 receptors on Tregs	Expansion of natural regulatory T cells by Jagged-1 and OX40L stimulation to suppress autoimmunity (through combination therapy or chimeric fusion protein)	<b>Preclinical: in vivo</b> Validated in NOD diabetes mouse model  Seeking funding to expand studies and pursue human clinical trials	US Patents 10,696,946  Continuation Patent Pending  Nationalized in US, EP and IN	Bellur Prabhakar
<b>Hematopoietic stem cell transplantation</b>	Multi-Chimeric Cells (MCC)	Multi-Chimeric Cell (MCC) Therapy for Transplantation and Treatment of Immune Deficiencies and Genetic Disorders	<b>Pre-IND</b>	Nationalized in US, EP, AU, CN, JP and CA	Maria Siemionow
<b>Rheumatoid Arthritis, Inflammatory Bowel Disease, Ulcerative colitis</b>	Epigenetics: HDAC6	HDAC6 Selective Inhibitors: nanomolar and sub nanomolar inhibitors of HDAC6	<b>Preclinical:</b> Potent HDAC6 inhibitors successfully prevented cardiac organ transplant rejection in rodent model; also prevented experimentally induced ulcerative colitis in rodents	US Patents 10,456,394 and 9,409,858  JP Patent Issued  Nationalized in CA and EP	Alan Kozikowski
<b>CRISPR/Cas9</b>	DNA-editing platform	Engineered CRISPR/Cas9 plasmid for barcoding and to trace biological events and cell lineage  Artificial chromosomes: episomal plasmids that replicate with mammalian cell cycle and transmit CRISPR/Cas9 based instructions	<b>Preclinical: in vitro</b>	Nationalized in US, EP, AU, CN and CA  Provisional Filed	Bradley Merrill Ryan Clarke & Hannah Pennington
<b>Allergy</b>	CSFR1	Highly selective Colony Stimulating Factor 1 Receptor (CSF1R) Inhibitors	<b>Preclinical: in vivo</b>	Provisional Filed	Mike Johnson Gye Young Park

# Immunology/Gene Therapy/Cell Therapy

Indication	Target	Therapeutic Description	Stage of Development	Patents	Faculty
<b>Hematopoietic stem cell transplantation</b>	GABA receptor	Repurposed drug/ GABBR1 agonist to improve HSC transplantation efficiency	<b>Preclinical: in vivo</b> Murine tested	US Patent Pending	Owen James Tamplin
<b>Inflammation</b>	Macrophages/Rspondin3 and LGR5	Activating the Rspondin3-Wnt signaling pathway to treat a disease or condition characterized by excessive or unregulated inflammation	<b>Preclinical: in vivo</b> Murine models	PCT Patent Pending	Asrar Malik
<b>Asthma, Eosinophilic Esophagitis</b>	CCR3, eosinophils	Peptide therapeutic to compete against Eotaxin and other chemokines as a treatment for asthma	<b>Preclinical: in vivo</b> Eosinophil mouse model	US Patent 10,363,286 and 11,167,012 EP Patent Issued Nationalized in CA	Steven Ackerman & Vadim Gaponenko
<b>Fibrosis /Osteogenesis</b>	Cell therapy	Alginate coated mesenchymal stromal cell transplantation	<b>Preclinical: In vivo</b> Studies in rodent models of pulmonary fibrosis and bone regeneration	PCT Patent Pending	Jae-Won Shin



# Cardio-Pulmonary

Indication	Target	Therapeutic Description	Stage of Development	Patents	Faculty
<b>Sudden Cardiac Arrest</b>	Phosphatase inhibitors	Peptide that mimics cooling for neuroprotection	<b>Preclinical:</b> Efficacy in mouse and pig models	US Patent 10,688,153 and 11,260,105 JP Patent 6,958,913 Nationalized in EP, CA and AU	Terry Vanden Hoek, Jing Li, and Xiangdong Zhu
<b>Pulmonary Arterial Hypertension</b>	Visfatin/Pbef/ Nampt inhibition	Small molecule Inhibitors	<b>Preclinical: in vitro</b>	US Patent Pending	Tom Driver
<b>Pulmonary Arterial Hypertension</b>	Nrf2-KEAP	Small molecules impacting Nrf2-KEAP interaction	<b>Preclinical: in vitro</b>	US Patent Allowed Nationalized in EP, CA, AU, JP and CN	Terry Moore
<b>Thrombosis, sepsis</b>	Von Willebrand factor	6-mer Inhibitory peptide	<b>Preclinical: in vivo</b>	US Patent 9,796,757	Richard Minshall
<b>Asthma</b>	CSF1R inhibitor repositioned as Inhalable, small molecule treatment for asthma	Targeting early phase of asthma pathogenesis to treat disease rather than simply treating symptoms	<b>Preclinical: in vivo</b> Efficacy in mouse models	Nationalized in US, EP, AU, JP and CA	Gye Young Park & Hyung-Geun Moom
<b>Acute Respiratory Distress Syndrome / Vascular leakage</b>	End Binding Protein (EB3) inhibitors	6AA Inhibitory peptide	<b>Preclinical: in vivo</b> Efficacy studies in COVID19 and non-COVID19 induced ARDS completed in mouse models with additional ongoing toxicology studies in dogs	Provisional Patent Filed	Yulia Komarova

# Cardio-Pulmonary

Indication	Target	Therapeutic Description	Stage of Development	Patents	Faculty
<b>Myocardial Infarction and Lung Injury</b>	Variable: Currently tested in TGFβ and SYK signaling	Drug loaded mannosylated albumin nanoparticles targeting distinct inflammatory and tissue-resident interstitial cells.	<b>Preclinical: in vivo</b> Efficacy in mouse models	Provisional Filed	Asrar Malik
<b>Myocardial Infarction</b>	Protein tyrosine kinase Syk inhibitors	Piceatannol albumin nanoparticles (PANPs) selectively targeting profibrotic neutrophils	<b>Preclinical: in vivo</b> <b>Efficacy in mouse models</b>	Provisional Filed	Asrar Malik

# Anti-Infectives

Indication	Target	Therapeutic Description	Stage of Development	Patents	Faculty
<b>Lymphatic filariasis</b>	Tetravalent filarial surface proteins	Vaccine (Purified Protein and/or DNA)	<b>Preclinical Studies - Proof of Concept</b> studies in a primate model of infection ongoing	US Patent 10,072,054 EP, CN, IN, SG Patents Issued	Ramaswamy Kalyanasundaram
<b>Hepatitis C</b>	NPC1L1	Ezetimibe (Zetia – repurposed)	<b>Preclinical: in vivo</b> Validation in a mouse model of HCV infection	US Patents 8,673,288 and 9,034,863	Susan Uprichard
<b>Dental Caries/Biofilm inhibition</b>	Bacterial pathogens that produce a biofilm matrix	Cerium (IV) nanoparticles that behave as biofilm inhibitors against the bacteria but not lethal to the cells at lower concentration.	<b>Preclinical: in vitro</b> Early stage, in vitro validation and cell toxicity evaluation	US Patent 10,835,556	Russell Pesavento
<b>Herpes</b>	Viral binding and cell entry	Inhibitory peptide	<b>Preclinical: in vivo</b> Validation in a mouse model of HSV infection	US Patent 9,464,113	Deepak Shukla
<b>Herpes</b>	HSV-1 and HSV-2	DECON particles	<b>Preclinical: in vivo</b>	Nationalized in US, EP and CA	Deepak Shukla, Teja Yadavalli
<b>Antibiotics discovery</b>	Research tool device	Agar-flip plate for high-throughput discovery of antibiotics	Plates fabricated and in use in research	Provisional Filed	Sang Hyun Cho, Scott Franzblau, Brian Murphy, Jeongho Lee & Rui Ma
<b>Tuberculosis</b>	ClpC1/P1/P2 complex	Rufomycin analogs with anti-tuberculosis activity	<b>Preclinical:</b> In-vitro testing	US Patent Pending	Scott Franzblau

# Anti-Infectives

Indication	Target	Therapeutic Description	Stage of Development	Patents	Faculty
TB	Multiple	Macrolides and small molecule antibiotics	<b>Preclinical:</b> In vitro validation	US Patent 9,090,667 CN, JP, KR, IN, EP Patents Issued	Scott Franzblau
TB and Cystic Fibrosis Pathogens	Multiple	Small molecule therapeutics	<b>Preclinical: in vivo</b> Animal data available for best lead molecule against XDR and MDR TB	US Patent Pending	Alan Kozikowski, William Bishai & Laurent Kremer
MRSA	vraSR Operon	Small molecule inhibitors of MRSA related OPERON.	<b>Preclinical: in vitro</b> Cellular demonstration of technology	US Patent 9,675,592	Mike E Johnson, Robert Daum & Susan Boyle-Vavra
Schistosomes	TGR	Novel inhibitors of thioredoxin glutathione reductase (TGR) for the treatment of schistosomiasis	Demonstrated lethality to parasite larvae and adults	Provisional Filed	Pavel Pasha Petukhov

Indication	Target	Therapeutic Description	Stage of Development	Patents	Faculty
Drug Delivery	Non-specific	Method to transport extracellular vesicles through tissues by water permeation	<b>Preclinical: Ex vivo</b>	US Patent Pending	Jae-Won Shin
Drug Delivery	Non-specific	Toroidal-spiral design allows for two different drugs to be released at two different rates	<b>Preclinical: in vitro data</b>	US Patents 8,852,645 9,974,839	Ludwig Nitsche & Ying Liu
Drug Delivery	Non-specific	Continuous, scalable production of polymeric particles with novel heterogenous structures for cell and gene therapy	<b>Preclinical: in vitro</b>	PCT Patent Pending	Ying Liu
Drug Delivery	Non-specific	Nano-hybrid delivery system for anticancer, anti-viral and anti-angiogenic agents	<b>Preclinical: in vitro</b> No animal data to date	US Patent 9,168,225	Seungpyo Hong
Drug Delivery	Mesenchymal Stem Cells	Method to maximize production of extracellular vesicles from mesenchymal stem cells	<b>Preclinical</b>	Provisional Filed	Jae-Won Shin
Drug Delivery	Zwitterionic polyethylenimine (PEI), polyaziridine or polyoxazoline for protein conjugation	Polymer conjugation to increase half life and reduce renal clearance and immune response, without compromising the characteristics of the protein	<b>Preclinical: in vitro</b>	US Patent Pending	Gang Cheng
Drug Delivery	Opioid Receptors	Dermorphinin Analogues for the Target-Delivery of Novel Therapies for Pain and Opioid Addiction	<b>Preclinical: In vivo</b> Effective delivery in rodent models	US Patent 7,776,819	Jim ZaiJie Wang
Drug Delivery	Gasdermin D with PhoCI	Engineered local, optogenetic lysis and permeabilization reagent for controlled drug delivery	<b>Preclinical</b>	Provisional Filed	Chia Hao Mo
Drug Delivery	Extracellular matrix	In vivo bioengineered exosome to create function/target specific and content release controlled exosome cargo	<b>Preclinical: in vivo</b> Preliminary proof of concept in rat calvarial defect model	Nationalized in US, EP, AU and CA	Sriram Ravindran

Indication	Target	Therapeutic Description	Stage of Development	Patents	Faculty
Herpes	HSV-1 and HSV-2	DECON particles	<b>Preclinical: in vivo</b>	Nationalized in US, EP and CA	Deepak Shukla & Teja Yadavalli
<b>Drug Delivery</b>	Dermal delivery	Hydrogel to treat wound healing	<b>Preclinical: in vivo</b> 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
<b>Drug Delivery</b>	Endothelial cells	Myeloperoxidase-derived peptide	<b>Preclinical: in vivo</b> Validation of specific delivery of peptidelinked compounds into sub-endothelial spaces in mouse models	US Patent 7,429,563	Chinnaswamy Tiruppathi & Asrar Malik
<b>Drug Delivery</b>	Neutrophils and Macrophages	Albumin and Manoosylated-Albumin Nanoparticles for targeted drug delivery to inflammatory cells	<b>Preclinical: in vivo</b> Tested in MI and ARDS	Large portfolio at various stages. Includes Issued Patents	Asrar Malik

# Diagnostics

Disease/Condition	Target/Marker	Stage of Development	Patents	Faculty
<b>Epilepsy</b>	Metabolite expression profile using MRI Spectroscopy	Identified in human epileptic brain tissue	US Patent Pending	Jeff Loeb
<b>Pancreatic Cancer</b>	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	Nationalized in US, EP, CN, CA, AU and JP	Ajay Maker
<b>Point-of-Care Diagnostic</b>	In vitro data of multiple bacteria types	Novel Surface Chemistry of Filter Paper in Point-of-Care Detection/ Working prototype	Nationalized in US and EP	Yajing Song & Peter Gyarmati
<b>Breast Cancer</b>	Estrogen receptor binding agent	In vitro development in progress	US Patent Pending	Stephen DiMagno Gregory Thatcher Debra Tonetti
<b>Bioanalysis and Imaging/Time-resolved fluorescence</b>	Metal chelators	Working prototype	US Patent 10,961,197	Lawrence Miller Ali Mohamadi
<b>Metastatic cancer</b>	Biomimetic device for capturing Circulating Tumor Cells and cancer stem cells	Validated using both human primary cancer cells and cell lines	Nationalized in US and EP	Howard Ozer
<b>Cancer</b>	Transcriptome analytics to predict disease progression and determine personalized therapeutics	Validated in human breast cancer	US Patent Pending	Yves Lussier
<b>Dry Eye Disease, Sjogren's GVHD</b>	Histatin Biomarkers	Validated in a mouse model	Nationalized in US, JP and EP	Vinay Aakalu & Sandeep Jain

# Diagnostics

Disease/Condition	Target/Marker	Stage of Development	Patents	Faculty
<b>Dry Eye Syndrome/ocular surface diseases</b>	Histatin peptides	biomarker, diagnostic, and potentially therapeutic, for ophthalmic or other system diseases especially those associated with inflammation, derangement in immunity, oncologic changes, infection, and wounding	Nationalized in US, JP and EP	Vinay Aakalu & Sandeep Jain
<b>Idiopathic Pulmonary Fibrosis</b>	Peripheral blood biomarkers	Validated in a small set of human samples	US Patent 10,036,069	Joe Garcia
<b>Cellular Lipids</b>	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
<b>Diagnostic imaging</b>	Chelating agent for use in diagnostic imaging and radioimmunotherapy	Ongoing mouse in vivo study	Provisional Filed	Duncan Wardrop Lawrence Miller
<b>Radiation-induced gastrointestinal injury</b>	Reactive oxygen species	Validated in a mouse model	US Patent 9,643,985	Marcelo Bonini
<b>COVID-19</b>	SARS-CoV-2	BioAerium: Airborne monitor to detect SARS-CoV-2 wild-type and mutations in airborne samples using Nucleic Acid Amplification Techniques (NAT)	Provisional Filed	Igor Paprotny



Disease/Condition	Target	Target/Marker	Stage of Development	Patents	Faculty
<b>Dry eye, retinopathy, angiogenesis</b>	VEGF Activation	Fusion peptide inhibitor based on Histaminesm. Applications in wound healing, metal ion chelation, anti-inflammatory effects and angiogenesis	<b>Preclinical:</b> In vitro data, In vivo data in mouse	US Patent 10,800,822 Nationalized in EP, CN and JP	Vinay Aakalu
<b>Dry eye disease</b>	Functional Pentapeptide for Treatment and Diagnosis of Human Disease	A new pentapeptide compound that enhances epithelial wound healing (multiple surfaces) and is positively associated with the histatin peptide-family to promote similar effects	<b>Preclinical:</b> In vivo mouse data	PCT Patent Pending	Vinay Aakalu
<b>Dry eye disease</b>	Peptide Biomarkers	Biomarker, diagnostic, and potentially therapeutic, for ophthalmic or other system diseases especially those associated with inflammation, derangement in immunity, oncologic changes, infection, and wounding	<b>Preclinical:</b> some animal data	Nationalized in US, JP and EP	Vinay Aakalu & Sandeep Jain
<b>Dry eye disease</b>	Extracellular DNA	Treat tear deficient dry eye disease using DNase	<b>Phase I/II human clinical trial:</b> completed	US Patents 9,867,871 and 10,328,129 EP, IL, ZA, CA, MX, RU, KR ad JP Patents Issued AU Patent Allowed Nationalized in BR, IN, CN	Sandeep Jain
<b>Dry eye disease</b>	$\alpha$ -adrenergic receptor	Repurposed FDA approved adrenergic agonists to decrease the amount of fluid in the eyes	<b>Investigator initiated IND</b>	Nationalized in US, CA, MX, EP, BR, CN and RU	Sandeep Jain

Disease/Condition	Target	Target/Marker	Stage of Development	Patents	Faculty
<b>Ocular Angiogenesis</b>	Selective VEGF regulation through KAI	Peptide based inhibitor of VEGF activation	<b>Preclinical:</b> In vitro validation and early in vivo studies in a mouse lung cancer model	US Patent 11,299,524 AU Patent Allowed Nationalized in EP, NZ, SG, JP, CN	Kaori Yamada & Asrar Malik
<b>AMD</b>	End-binding 3 protein	IP <sub>3</sub> R derivative peptide targeting the inhibition of EB3 to treat AMD as lead indication with additional data demonstrating therapeutic efficacy in sepsis, allergy/asthma and inflammation	<b>Preclinical:</b> Efficacy demonstrated in mouse and non-human primate models of AMD and mouse models of sepsis, allergy/asthma and inflammation	Allowed or issued patents in US and 30 countries worldwide	Yulia Komorova
<b>Corneal Scarring, Ocular Angiogenesis</b>	PAX 6	MEK inhibitors can limit the corneal scarring, opacification and neovascularization in severe corneal injury and disease	<b>Preclinical:</b> in vivo murine model	US Patent Pending	Ali Djalilian
<b>MEK inhibitors</b>	MEK inhibitors for corneal scarring and neovascularization	Therapeutic targeting Aniridia associated with PAX6 deficiency	<b>Preclinical:</b> In vivo mouse data	US Patent Pending	Ali Djalilian
<b>Diabetic Retinopathy</b>	NAMPT enzymatic activation to increase concentration of NAD in the eye.	Decrease in NAD <sup>+</sup> levels is attributed to an imbalance between NAD <sup>+</sup> synthesis and consumption given that the expression and activity of enzymes critical to NAD <sup>+</sup> synthesis decline with increasing age despite the fact that the obligatory requirement for NAD <sup>+</sup> remains high	<b>Preclinical:</b> Compounds have been biochemically confirmed to increase enzymatic Kcat for NAD <sup>+</sup> production	Provisional Filed	Kiira Ratia Greg Thatcher and A. Kazlauskas

# Ophthalmology Devices

Device	Function	Stage of Development	Patents	Faculty
<b>Ocular vision restoring system</b>	Captures visual information and transmits it wirelessly onto an extraocular receiver and processor apparatus to project the images onto the retina for patients with corneal blindness	Prototype	Nationalized in US and EP	Mark Rosenblatt, Charles Yu
<b>Suprachoroidal Space Cather</b>	The device was developed for navigation of the suprachoroidal space with the design to minimize trauma while enhancing practitioner ease-of-use	Prototype; animal data	PCT Patent Pending	Yannek Leiderman
<b>AI Classification of Diseases</b>	Artificial intelligence classification methodology to differentiate between normal and diseased states of ocular conditions	AI model developed from clinical data	Nationalized in US and EP	Xincheng Yao
<b>Non-contact non-mydratric fundus camera Ultra wide angle</b>	By freeing the pupil for collecting imaging light only, trans-pars-planar illumination enables >200ofundus view in single-shot images	Prototype; human data	Nationalized in US, CN and EP	Xincheng Yao
<b>Multimodal OCT for concurrent imaging of retinal neural activity and vascular hemodynamics</b>	Fosters the study of neurovascular coupling mechanisms in the retina, providing a new method for retinal disease detection and diagnosis.	Prototype; human data	US Patent Pending	Xincheng Yao
<b>Novel Keratoprostheses</b>	Sutureless Keratoprosthesis with flexible component for treatment of corneal blindness	Prototypes; rabbit data	Nationalized in US, EP, IN and SG	Mark Rosenblatt, Charles Yu
<b>Miniaturized indirect ophthalmoscopy</b>	Miniaturized indirect ophthalmoscopy for wide-field fundus photography.	Prototype; human data	Nationalized in US, CN and EP	Xincheng Yao

# Ophthalmology Devices

Device	Function	Stage of Development	Patents	Faculty
<b>Optical coherence tomography angiography</b>	OCT feature analysis guided artery-vein differentiation in OCTA	AI model developed from clinical data	Nationalized in US and EP	Xincheng Yao
<b>Microsurgery OCT guidance</b>	Optical Coherence Tomography Image-Guided Microsurgery of the Eye	Prototype	Nationalized in US, EP and AU	Yannek Leiderman
<b>Trans-corneal Telescope</b>	Visual aid for vision impairment due to eye diseases	Prototype	US Patent 8,506,626	Jose de la Cruz
<b>Contrast Sensitivity Chart</b>	Diagnostic tool for assessing contrast sensitivity in a subject	Final product	US Patent Pending	Jason McAnany

# Medical Devices

Device	Function	Stage of Development	Patents	Faculty
<b>Protective Mesh of Proximal Ventriculoperitoneal Shunt</b>	Device that prevents debris from clogging the shunt tubing in Hydrocephalus patients	Early prototype exists	Provisional Filed	Ankit Mehta
<b>Anterior CSF Leak Cage</b>	Anterior cervical discectomy and fusion (ACDF) leak repair implant	Conceptual drawings for early prototype	Provisional Filed	Ankit Mehta
<b>DuraClose</b>	Device that repairs tears/punctures in the dura mater	Early prototype exists	Provisional Filed	Ankit Mehta
<b>Posterolateral fixation device</b>	Method and device for delivering solution to posterolateral fusion: Medicant delivery in a fenestrated rod of the posterolateral fusion fixation system	Device build and physically tested	US Patent Pending	Ankit Mehta & Philip Ostrov
<b>Operating table Patient Stabilizer</b>	Operating table for procedures in the Trendelenburg position to reduce stress on nerves and prevent musculoskeletal injury	Prototype	Nationalized in US, EP and AU	Michael Young
<b>Urine Flow Meter</b>	Automated Urinometer for ICO	Prototype	US Patent Pending	Michael Young
<b>Catheter tubing</b>	Biocompatible, non-biodegradable and antifouling polyurethane	In vitro/early in-vivo	Nationalized in US, EP and CN	Gang Cheng
<b>Catheters</b>	Catheter head design for use in the suprachoroidal space	The complete navigational system was tested in various models to demonstrate functionality, including tip articulation, obstacle maneuvering and avoidance, and targeted delivery of a payload.	PTC Patent Pending	Anthony Felder

Device	Function	Stage of Development	Patents	Faculty
<b>Extendable Intravenous Catheter</b>	A catheter designed for pediatric patients	Prototype being developed	US Patent 9,517,324	Girish Desphande
<b>Jaw-Thrust and Immobilization Device</b>	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
<b>Endotracheal tube</b>	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	Prototype	US Patent 8,991,396	Girish Desphande
<b>Device for insertion of spinal cord stimulation paddle electrodes</b>	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
<b>Stroke Rehab</b>	A Soft Exoskeletal Network of Elastic, Nonlinear Torque Field Generators for Neurorehabilitation	simple, customizable tool capable of providing assistive torques to patients with motor deficits	US Patent Pending	James Patton
<b>Rapid Pathogen ID</b>	Instrument free detection of pathogens from small blood sample	Prototype	Nationalized in US and EP	Peter Gyarmati
<b>Ankle Stroke Rehab Device</b>	Affordable at-home digital rehabilitation device for post-stroke ankle recovery.	Prototype	Nationalized in US, EP, CA, KR and SG	Sangeetha Madhavan
<b>Pressure-indicating material</b>	Medical device-related pressure injury prevention pressure-indicating material	Prototype	PCT Patent Pending	Alexander Yarin & Youngkwan Song

# Medical Imaging

Device	Function	Stage of Development	Patents	Faculty
<b>Imaging</b>	Lattice Light-Sheet and Fresnel Incoherent Correlation Holography		PCT filed	Simon Trevor Alford
<b>Medical Imaging</b>	MRI with sub-millisecond temporal resolution for cardiac valve imaging and scanner calibration (Eddy current)		US Patent Pending	Joe Zhou
<b>Medical Imaging</b>	Method for Correcting Geometric Distortion in Echo-Planar Magnetic Resonance Imaging		Provisional Filed	Joe Zhou
<b>Medical Imaging</b>	Rapid MRI with High Motion Tolerance		US Patent 9,645,211	Joe Zhou
<b>Medical Imaging</b>	Time-Efficient Phase Error Correction in EPI-PROPELLER		US Patent 9,612,307	Joe Zhou
<b>Medical Imaging</b>	Method for Reducing Image Distortion in Echo Planar MRI		US Patent 9,797,970	Joe Zhou
<b>Medical Imaging</b>	Tagging distance dependent Z-spectral (TADDZ) MRI for B0-corrected arterial spin labeling (ASL) imaging		US Patent Allowed	Kejia Cai
<b>Medical Imaging</b>	Methods for Reducing Fold-Over Artifacts in Magnetic Resonance Imaging		US Patent 8,847,594	Joe Zhou
<b>Medical Imaging</b>	3D reduced Field-of-View imaging		Provisional Filed	Joe Zhou

Title	Target or Indication	Description	Stage of Development	Intellectual Property	Faculty
<b>Fit-N Strong</b>	Osteoarthritis	An evidence-based exercise program to treat osteoarthritis. This program is currently being taught in almost 100 sites in 24 states.	<a href="https://www.fitandstrong.org/">https://www.fitandstrong.org/</a>	Copyright	Susan Hughes
<b>DEEP</b>	Diabetes	This is a diabetes education and self-management program endorsed by CMS	Commercially deployed <a href="https://mwlato.uic.edu/deep-program/">https://mwlato.uic.edu/deep-program/</a>	Copyright	Amparo Castillo
<b>My IDEA</b>	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. <a href="https://www.frontiersin.org/articles/10.3389/fpubh.2016.00272/full">https://www.frontiersin.org/articles/10.3389/fpubh.2016.00272/full</a>	Copyright	Andrew Boyd
<b>CATCH-IT</b>	Adolescent depression	Evidence based computerized cognitive behavioral therapy for depressed adolescents	Clinical trials with patients have been conducted. <a href="https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6290998/">https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6290998/</a>	Copyright	Benjamin Van Voorhees
<b>LUPUS- PRO</b>	SLE Lupus	<a href="#">Patient Reported Outcomes Questionnaire</a>	Used by pharmaceutical and clinical units to gauge disease severity <a href="http://www.lupuspro.com/information.html">http://www.lupuspro.com/information.html</a>	Copyright	Alan Simon Pickard Meenakshi Jolly
<b>Medicinal Cannabis Technical Manuals</b>	Medical Marijuana/Cannabis	Laboratory protocols describing the processing of medical cannabinoid products	Turn-key validated protocols	Copyright	Jennifer Bash
<b>LEAD Experience</b>	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
<b>Academic Detailing Surveys</b>	Opioid Death Prevention Counselling	Academic Detailing: a comprehensive and novel method of educational outreach designed to arm providers with current evidenced-based information through individual face to face interactions between PharmD professionals and patients.	Available for Licensing from UIC	Copyright	Simon Pickard and Todd Lee



Title	Target or Indication	Description	Stage of Development	Intellectual Property	Faculty
<b>Charcot Marie Tooth (CMT)</b>	HDAC6	Nanomolar inhibitors of HDAC6 highly selective over other HDACs	<b>Preclinical: in vivo</b> Compounds were dosed into transgenic models of CMT and successfully blunted the disease in a transgenic animal model	US Patents 10,456,394 and 9,409,858 JP Patent Issued Nationalized in CA and EP	Alan Kozikowski
<b>Eosinophilic Esophagitis</b>	CCR3, eosinophils	Peptide therapeutic to compete against Eotaxin and other chemokines as a treatment for asthma	<b>Preclinical: In vivo</b> Experiments in eosinophil mouse model	US Patent 10,363,286 and 11,167,012 EP Patent Issued Nationalized in CA	Steven Ackerman & Vadim Gaponenko
<b>Niemann-Pick</b>	TMEM 97 or NPC 1	Small peptide (5 AA)	<b>Preclinical: in vivo assays</b>	PCT Patent Pending	Vinay Aakalu
<b>Amyotrophic Lateral Sclerosis (ALS)</b>	Neuregulin Signaling	GlyB4 Fusion with Neuregulin Heparin-Targeting Domain to Block Neuregulin Signaling	<b>Preclinical: in vivo</b> Improves early chronic motor performance deficits, delays disease onset and prolongs survival in an ALS mouse model	US Patent 7,527,794 US Patent 7,994,123 EP Patent 1,824,879	Jeff Loeb

Company	Technology	Website	Type	Faculty	Stage of Development
<b>5by5</b>	Novel Surgical Stations		Device	Pier Giulianotti	Seed stage startup
<b>Actuate Therapeutics</b>	Highly Selective GSK3 inhibitors for Oncology and CNS indications	<a href="https://actuatetherapeutics.com">https://actuatetherapeutics.com</a>	Therapeutic	Alan Kozikowski	Received \$90M in investment; undergoing Phase II clinical trials, several indications
<b>Advaite</b>	Anti-inflammatory in ocular surface diseases	<a href="http://advait.com/">http://advait.com/</a>	Therapeutic	Sandeep Jain	Seed stage startup
<b>Bright Minds Biosciences</b>	Novel biased agonists of the human 5HT2c receptor targeting multiple CNS indications	<a href="https://brightmindsbio.com/">https://brightmindsbio.com/</a>	Therapeutic	Alan Kozikowski	Post IPO company raised \$20M, starting Phase I clinical trial in May 2022
<b>Capio Biosciences</b>	Circulating tumor cell capture device for diagnostic applications. Successfully raised \$2M in start up funding.	<a href="http://www.capiobiosciences.com/">http://www.capiobiosciences.com/</a>	Diagnostic	Seungpyo Hong	Post IPO company raised \$20M, starting a Phase I clinical trial in May 2022
<b>Cell Biologics</b>	Therapeutics for treating sepsis and other pulmonary indications; primary cultured cells and cell culture products	<a href="http://www.cellbiologics.com">http://www.cellbiologics.com</a>	Therapeutic & Reagents	Asrar Malik	Seed stage company with multiple STTR grants over \$1.8M
<b>Drax Therapeutics</b>	Biotechnology company developing small molecule inhibitors of NAMPT as disease modifying therapeutics for Pulmonary Arterial Hypertension.	<a href="https://research.impact.iu.edu/our-strengths/innovation-commercialization/ico-pipeline.html">https://research.impact.iu.edu/our-strengths/innovation-commercialization/ico-pipeline.html</a>	Therapeutic	Tom Driver and Roberto Machado	STTR based, preclinical assets
<b>DuPage Medical</b>	Peptide targeting Gα13 that has dual anti-thrombotic and anti-inflammatory effects that eliminate the risk of bleeding associated with current anti-thrombotic therapies		Therapeutic	Xiaoping Du	Seed stage company with multiple non-dilutive grants including VITA and SBIR grants totaling over \$6M
<b>Dystrogen Therapeutics</b>	Chimeric Cell Therapy for Treating Muscular Dystrophy including Duchenne Muscular Dystrophy (DMD)	<a href="http://dystrogen.com/">http://dystrogen.com/</a>	Therapeutic	Maria Seimionow	1 <sup>st</sup> in-human trial
<b>Enzyme by Design</b>	Safer asparaginase proteins that have been designed to minimize glutaminase activity for treating cancer	<a href="https://www.enzymebydesign.com">https://www.enzymebydesign.com</a>	Therapeutic	Arnon Lavie	Seed stage corporation with multiple STTR grants over \$4M

Company	Technology	Website	Type	Faculty	Stage of Development
<b>EpiDestiny</b>	Decitabine formulation for treating blood related cancers and indications including sickle cell anemia	<a href="https://www.epidestiny.com">https://www.epidestiny.com</a>	Therapeutic	Yogen Saunthararajah & Joe DeSimone	Partnered with Novo Nordisk for Sickle cell disease programme (Phase I completed), Phase II clinical trials initiated for myeloid malignancies, peripheral T-cell leukemia/lymphoma, and small cell lung cancer (seeking partnership).
<b>FertilityABC</b>	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	App beta testing ongoing
<b>Keywise Inc.</b>	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	<a href="https://keywise.tech/">https://keywise.tech/</a>	Health IT Software	Alex Leow Olusola Ajilore Faraz Hussain	App beta testing ongoing
<b>Nano Biotherapeutics Inc.</b>	Diagnosing or Treating Neutrophil-Mediated Inflammatory Disease	<a href="http://www.nanobiotherapeutics.com">http://www.nanobiotherapeutics.com</a>	Therapeutic	Asrar Malik	Seed stage company with multiple STTR grants over \$1.7M
<b>NS Intelligence IP</b>	Non-contact videoplethysmograph (VPG) measure of human arterial pulse using a digital camera		Diagnostic	Stephen Porges	
<b>PAX Neuroscience</b>	Blood based test for evaluating antidepressant efficacy and diagnosing depression	<a href="http://www.paxneuroscience.com">http://www.paxneuroscience.com</a>	Diagnostic	Mark Rasenick	Preseed company, working in depression diagnostics
<b>RespireRX</b>	Novel drug therapies for sleep apnea, drug-induced respiratory depression, and other brain-medicated breathing disorders	<a href="http://www.respirerx.com">http://www.respirerx.com</a>	Therapeutic	David Carley	RespireRx Pharmaceuticals has raised a total of \$12.2M in funding over 5 rounds.

# Startups

Company	Technology	Website	Type	Faculty	Stage of Development
<b>Revivo Therapeutics</b>	Novel methylthiazoles for CNS indications with the lead molecule well tolerated in a Phase 1 study in healthy volunteers	<a href="http://www.revivotherapeutics.com">http://www.revivotherapeutics.com</a>	Therapeutic	Greg Thatcher	Seed stage company with \$3M in funding, seeking further venture funds
<b>Selagine</b>	Antibody based biologics for eye diseases	<a href="https://www.selagine.com/">https://www.selagine.com/</a>	Therapeutic	Sandeep Jain	Seed stage startup
<b>SENEX Bio</b>	Biotechnology company pivoting on development of novel kinase inhibitors for oncology, Senex is developing highly selective small-molecule inhibitors of this protein for the treatment of presently incurable types of prostate cancer, breast cancer and leukemia	<a href="https://senexbio.com/">https://senexbio.com/</a>	Therapeutic	Igor Roninson and Karthik Gopalakrishnan	Company is repivoting on a new platform and raising seed stage investment
<b>Syntax</b>	Biotech developing a proprietary CRISPR/Cas9 based, genetic programming platform technology that converts cells into biological computers using DNA based instructions that read like lines of code company leveraging next generation CRISPR in therapeutics and food science.		Therapeutic & Food Science	Brad Merrill and Ryan Clarke	Supported by Portal Innovations, raising seed \$5M
<b>Tianhe Stem Cell Biotechnologies</b>	Stem Cell Educator Therapy is a treatment of autoimmune related diseases using stem cells drawn from human umbilical-cord blood	<a href="http://www.tianhecell.com">http://www.tianhecell.com</a>	Device & Therapeutic	Yong Zhao	Phase 2 clinical trial initiated for Type 1 Diabetes, Alopecia Areata, and Covid 19
<b>TTC Oncology</b>	Clinical stage hormone receptor modulators for treating cancer	<a href="https://www.ttconcolgy.com">https://www.ttconcolgy.com</a>	Therapeutic	Greg Thatcher	Completed Phase I trials with \$5M captilization, seeking additional funds
<b>ViSoTherapeutics</b>	Histatin Peptides		Therapeutic	Vinay Aakalu	Seed stage startup
<b>Yaso Biotech</b>	Therapeutic and prophylactic agent for sexually transmitted viral pathogens with contraceptive properties	<a href="http://www.yasotherapeutics.com">http://www.yasotherapeutics.com</a>	Therapeutic	Alex Kronic & Don Waller	STTR phase company with \$5M raised, seeking venture capital