NIDDK T35 Medical Student
Training Program June – August 2022

Core Competencies and Expectations

Core competencies in a Research Lab Environment

1. Professionalism (behavior that promotes a scholarly, intellectual, cooperative, respectful, productive, safe and ethical lab environment)
2. Ability to read and understand the literature
3. Hypothesis formulation and experimental design
4. Technical lab skills

After the T35 summer project, trainees should be able to:

a) Critically review basic science research papers.
b) Design a research proposal that is realistic and specific.
c) Follow methods, procedures, and techniques. Be familiar with lab equipment.
d) Demonstrate professionalism in a research lab by participating in the intellectual life of the lab, being respectful of and helpful to others, and ethical in decision-making.
e) Demonstrate strong written and oral communication skills by writing clear, concise abstracts, proposal, and papers, and speaking clearly and precisely during talks, group meetings, presentations, and poster sessions.

Program Requirements

Date	Activity
May/June 2022	Attend Orientation: Meet your fellow trainees and Program Directors
June 2022	Finalize your research plan
June 13 - August 12, 2022	Participate in up to 9 weeks of NIDDK-related research
June 13 - August 12, 2022	Attend Seminars and Journal Clubs
September 2022	Submit Progress Report, including project summary, abstract, and survey
May/June 2022	Participate in the Department of Medicine Research Day
January 2024, May 2025, June 2026	Complete surveys

Program Activities

Seminars will be held throughout the summer, and trainees are expected to attend them. Seminars include the following:

- Translational Research in Progress (TRIP) Seminar
- Scientific Integrity and Responsible Conduct of Research Seminar
- Lab Techniques Seminar
- Lab Safety Training
- How to Present at a Journal Club

Journal Club will be held weekly. Trainees will be assigned a date and partner(s). Trainees must submit their article to Dr. Ramasamy for approval two weeks before the presentation. They must then circulate their article to the group one week before they present. If trainees cannot present on the day they are assigned, they are responsible for swapping among themselves.

NYU School of Medicine NIDDK T35 Medical Student Training Program Mentors and Projects for Summer 2022

Mentor Name	Project Title	Description of Project	Number of Students the Project Can Accommodate	Contact Information
Aleman, Jose	Obesity, weight loss, adipose tissue immunology	Apply omic technologies to the study of human disease and metabolism, specifically to the most prevalent metabolic diseases of obesity, Type 2 Diabetes and their common consequence of cardiovascular disease.	1	Jose.Aleman@nyulangone.org
Beasley, Jeannette	BRinging the Diabetes Prevention Program to GEriatric populations (BRIDGE)	This project evaluates strategies for delivering an evidence-based diabetes prevention intervention to older adults. Students will have opportunities to participate in multiple aspects of conducting a research study, from recruitment to reporting.	1	Jeannette.Beasley@nyulangone.org
	INtegrating CuLUtural aspects into Diabetes Eduction (INCLUDE)	This project will build on our teams' efforts to translate evidence- and theory-based interventions to immigrant populations. We will leverage partnerships with the Department for the Aging, Chinese American Planning Counsel, Brooklyn Grange, and others to determine the effectiveness of a diabetes education intervention on key clinical outcomes among older adult Chinese immigrants.	1	
Berger, Jeffrey	Thrombosis and Hemostasis; Platelet Biology	Cell biological processes relevant to atherothrombosis and platelet biology across the spectrum of cardiovascular disease	1	Jeffrey.Berger@nyulangone.org
Brown, Ryan	Diffusion tensor imaging in diabetic peripheral neuropathy (DPN)	We are using diffusion tensor imaging (DTI) in a clinical trial to assess peripheral nerve adaptation in response to exercise intervention. The student will have the opportunity to quantify fractional anisotropy, which is associated with fiber density, and the apparent diffusion coefficient, which reflects the architecture of the myelin sheath, using MRI data from DPN participants that have completed a 10-week physical therapy protocol.	1	Ryan.Brown@nyulangone.org
	Machine learning based tool for automatic lower extremity image segmentation	There are currently no available tools to automatically identify muscle groups, bone, and peripheral adipose tissue in lower extremity MR images, which necessitates burdensome and variable manual analysis. The student will work toward addressing this issue by expanding our training dataset and working with our machine-learning team to create and validate a customized convolutional neural network, which will be utilized in a wide range of MRI projects including our clinical trial on exercise intervention in diabetic peripheral neuropathy.	1	
Cadwell, Ken	Impact of the natural environment on the development of immune system	In this collaborative multi-institutional project, we examine the impact of the natural environment, including the microbiota, on the immune system and susceptibility to disease using a novel outdoor enclosure in which laboratory mice are released into the wild.	1	Ken.Cadwell@nyulangone.org
Chandarana, Hersh	Developing novel MRI technique for functional imaging	Development and application of advance imaging techniques to study pathophysiology of abdominal diseases, with special interest in oncologic imaging and functional imaging including renal and liver function.	1	Hersh.Chandarana@nyulangone.org
Chang, Virginia	Obesity, cardiovascular disease, social disparities, population health	Weight status and other measures of body composition, cardiovascular risk factors, and metabolic syndrome at the population-level, examining various aspects of their causes and consequences, particularly as they relate to social factors.	1	Virginia.Chang@nyulangone.org
Chao, Moses	Trophic factor mechanism for obesity	One of the strongest phenotypes from a deficiency in BDNF is obesity, as well as hyperphagia and insulin resistance. We hypothesize that increases in BDNF result in the conversion of white adipose tissue to brown adipose tissue.	1	moses.chao@nyulangone.org
	The effects of exercise upon metabolism in liver and muscle	This study will uncover the molecular and cellular mechanisms that link physical exercise to metabolic changes. Previous work uncovered increases in ketone bodies (liver) and lactate (muscle), which change patterns of gene expression.	1	
Cronstein, Bruce	Role of adenosine receptors in promoting fat browning	In collaboration with Dr. Elisabetta Mueller we are examining the effect of local and systemic administration of agents that, directly or indirectly, stimulate adenosine A2A receptors in adipose tissue on the formation of brown fat (fat cells with increased mitochondria that actually burn energy) from white adipose tissue as well as regulation of macrophage function and phenotype in adipose tissue.	1	Bruce.Cronstein@nyulangone.org
Ding, Yu-Shin	Effects of Sleep Restriction on BAT Activation in humans	By assessing the impact of partial sleep deprivation on BAT activation will expand our understanding of BAT's role in sleep homeostasis and improve the management and treatment of these diseases.	1	Yu-Shin.Ding@nyulangone.org
	Novel Strategy for Imaging Brown Adipose Tissue at Basal State under Room Temperature	By targeting a primary regulatory system component of BAT, norepinephrine-targeted imaging, we are establishing a basis for future mechanistic studies of BAT function/dysfunction in obesity and diabetes, as well as for therapeutic approaches for these disorders.	1	
Elbel, Brian	Impact of the Built Environment on Child Body Mass Index	This project combines multiple rich datasets to determine the influence of the built environment on childhood obesity in New York City. In particular, features of small areas around each child's home and school, as well as the characteristics of their home and school buildings, are being examined.	1	Brian.Elbel@nyulangone.org

	Using National Sales Data to Understand the Influence of Menu Labeling Policy	This project assesses the impact of menu labeling on items and calories purchased by consumers, and determines the extent to which the impact differs by community demographics, urbanicity of the restaurant location, and characteristics of the purchase.	1	
Feske, Stefan	CRAC channels in Th1 and Th17 cells as mediators of colitis and therapeutic targets	The overall goal of this project is to understand the role of Ca2+ influx mediated by Ca2+ release activated Ca2+ (CRAC) channels in the proinflammatory function of Th17 and Th1 cells and how they control autoimmunity in IBD. Elucidating how SOCE regulates the colitogenic function of T cells will allow us to assess the benefits and risks associated with CRAC channel inhibition as a potent immunosuppressive treatment for IBD.	1	Stefan.Feske@nyulangone.org
Froemke, Robert	Fluorescent Tracking of Exogenously Delivered Oxytocin	The neuropeptide oxytocin is increasingly explored as a potential therapy for the social deficit symptoms of autism spectrum disorder (ASD), but the mechanisms of action and where administered oxytocin goes in the brain is not well understood. We propose to use a fluorescent labeling approach to track where exogenous oxytocin localizes in the brain.	2	Robert.Froemke@nyulangone.org
Gold-von Simson, Gabrielle	BEEP evaluation and dissemination	The Biomedical Entrepreneurship Educational Program (BEEP) trains students in Biomedical Entrepreneurship, with a special focus on diabetes, obesity and metabolic diseases, now in year 3. The program aims to expand the skill set of scientists and clinicians who are interested in actively participating in the commercialization of academic discoveries and inventions so they can become successful entrepreneurs in the biomedical industry and bring much needed therapies to market; T35 mentees will work with evaluation team to analyze student surveys and outcomes and prepare manuscripts, media posts, ebooks, modules for dissemination.	2	Gabrielle.Gold-VonSimson@nyulangone.org
	T35 metrics and past trainee follow up surveys	The NIDDK T35 Medical Student Training Program has been a successful Mentorship Program for several years at NYU. We will follow up with past trainees and survey them to ascertain: 1. Mentor effectiveness (Berk scale) 2. Relevance and influence on career 3. Relevance and influence on research activity 4. Relevance and influence on other related activity i.e. entrepreneurship, technology development et al.	2	
Goldberg, Ira	Lipid metabolism and macrophage polarization	We will create mice with deletion of two genes required for uptake of lipid into macrophages. We will then test whether loss of lipid uptake prevents macrophage to an alternatively activated (M2-like) phenotype.	1	Ira.Goldberg@nyulangone.org
	Cardiac fatty acid uptake	We have deleted a fatty acid transporter, CD36, in endothelial cells. We will study how this deletion affects uptake of fatty acids in the heart.	1	
Hu, Lu	A Mobile Health Intervention to Reduce Diabetes Disparities in Chinese Americans	This project aims to recruit patients only and to examine the potential efficacy of a social-media based diabetes intervention to lower blood sugar in Chinese Americans and immigrants with type 2 diabetes (T2D).	2	Lu.Hu@nyulangone.org
	Feasibility of a Family-oriented mHealth Intervention for Chinese Americans with Type 2 Diabetes	This project aims to recruit both patients and family members and examine the potential efficacy of a family-based mobile health intervention to improve health outcomes in Chinese Americans with T2D and their family members.	2	
Hubbard, Jane	Linking nutrition, stem cells, and reproduction	Nutritional provision impacts germline stem cells in C. elegans via conserved nutrition-sensitive signal transduction pathways (Insulin, TOR and TGFß). We aim to uncover nutritional components that underlie this regulation using genetic approaches.	2	jane.hubbard@nyulangone.org
Hussain, Mahmood	Effects of miR-30c deficiency on plasma cholesterol and atherosclerosis (HL137202)	To characterize changes in plasma lipids, lipoproteins and atherosclerosis in miR-30c knockout mice	1	Mahmood.Hussain@nyulangone.org
	Role of lipoprotein assembly in the maternal-fetal transport of beta carotene (HD098778)	To study the role of lipoprotein assembly and secretion by placenta in the transport of lipids and fat-soluble vitamins from mothers to fetus	1	
	Circadian regulation of lipoprotein assembly	To understand how circadian rhythms regulate lipoprotein assembly and secretion	1	
	MicroRNAs regulating plasma LDL and HDL	To identify microRNAs that regulate plasma LDL and HDL levels	1	
Ito, Mayumi	Hair follicle regeneration and melanocyte stem cells	Establishment of technologies to examine melanocyte stem cells (McSCs) residing in the bulge region of the adult hair follicle.	1	Mayumi.Ito@nyulangone.org
Islam, Nadia	DREAM intervention – An intervention to prevent and manage diabetes among South Asians in New York City	The fellow will work on analyses of fidelity as well as collection and coding of implementation data for the DREAM intervention – an intervention to prevent and manage diabetes among South Asians in New York City. As part of the fidelity evaluation, the fellow will examine data in our online research database related to in-person and virtual intervention components including the transition to remote context as a result of the COVID-19 pandemic. As part of the annual implementation evaluation, the fellow will conduct qualitative interviews with research program staff, community health workers (CHWs), and community partners to assess for barriers and facilitators to intervention implementation. The fellow will also assist with coding interviews as well as development of abstracts, presentations, and manuscript preparation based on the results of this project.	1	Nadia.Islam@nyulangone.org

Jay, Melanie	Testing the Efficacy of a Technology-Assisted Weight Management Intervention within Patient-Centered Medical Homes: The GEM Study	The Goals for Eating and Moving (GEM) Study tests the efficacy of a technology-assisted health coaching intervention over 12 months to improve weight management in primary care at the Manhattan VA. We will be analyzing our implementation outcomes based on the RE-AIM (Reach, Effectiveness, Adoption, Implementation, Maintenance) framework and will also be conducting secondary data analyses.	2	Melanie.Jay@nyulangone.org
	Financial Incentive Strategies for Weight Loss in Primary Care Patients with Obesity Living in Socioeconomically Disadvantaged Neighborhoods: The FIReWoRk Study	The FIReWoRk Study tests the comparative- and cost-effectiveness of financial incentives for weight loss as compared to the provision of behavior change resources alone. The primary outcomes of this intervention are a ≥5% reduction in baseline weight at 6 months, use of evidence-based weight management programs, and quality of life. We have finished analysis of primary outcomes and will be looking at secondary outcomes including physical activity, dietary behavior, and self-monitoring of diet and weight.	2	
	Adapting Evidence-Based Physical Activity Practices for Adults with Obesity to Local Greenspace: The Green Activity Pilot (GAP) Intervention	In the GAP project, we are conducting qualitative interviews with patients to identify barriers and facilitators to physical activity in the natural environment as it relates to weight loss maintenance and quality of life, and with providers to understand implementing green activity interventions in partnership with primary care. We will work with Sunset Park community advisors to adapt evidence-based practices to the local context to address the community's specific barriers and facilitators at multiple levels.	1	
	The Retrain Your Brain for Healthy Eating Study	The aim of this mixed methods study to evaluate the feasibility of a food response training (FRT) intervention, a novel behavioral strategy, to reduce unhealthy dietary intake in diverse patients with obesity. FRT targets automatic processes in the food reward system to help patients who might not respond to traditional behavioral interventions. We will evaluate FRT's effects on diet, weight and clinical outcomes and explore factors (environmental and genetic) associated with response to FRT. This study will be conducted among 60 patients with obesity recruited from NYU Langone Health. Measurements will occur at baseline and at three months follow-up. For a subgroup of participants, we will collect saliva samples for genetic analysis at baseline assessment (ancillary study).	1	
Lee, David	The Impact of the Food Environment and Other Environmental Exposures on the Risk of Diabetes in Rural Settings	This study will perform geographically detailed surveillance in Sullivan County, New York, which is a rural area in the state that faces significant health challenges. This study will assess how diet quality and dietary contaminants may interact to increase diabetes risk in rural communities.	2	David.Lee@nyulangone.org
Li, Huilin	Data analysis of high dimensional microbiome/metagenomic data	In this coming year, my lab is interested in analyzing three longitudinal Integrative Human Microbiome Project (https://hmpdacc.org/ihmp/) cohorts, focusing on the interaction between host and microbiome over time in three conditions: pregnancy and preterm birth, inflammatory bowel disease(IBD), and progression to type 2 diabetes (T2D). Two challenging features we need to deal with using the advanced statistical methods are 1) longitudinal microbiome sampling and survival outcome; and 2) high dimensional, longitudinal measurements of multiple molecules (metabolites, genes, and proteins) in both host and microbiome from the same sets of samples.	1	Huilin.Li@nyulangone.org
Littman, Dan	Human T cell immunity to luminal microbiota	Changes in microbiota are associated with metabolic and inflammatory disease in humans including obesity, inflammatory bowel disease, and rheumatoid arthrtitis. Our lab identified the ability of segmented filamentous bacteria to induce intestinal Th17 and drive autoimmune arthritis in mouse models, however, the role of microbial derived antigens in shaping the intestinal and systemic CD4+ T cell repertoire is unknown. In this rotation, the student will prepare CD4+ T cell clones from peripheral blood and intestinal tissue and identify clones that specifically respond to naturally processed antigens derived from intestinal bacteria. This work will help develop tools to identify and define the role of microbiota-specific T cells in human disease.	1	Dan.Littman@nyulangone.org
	Visualization of microbial specific Th17 cells in the intestine	How microbial-specific Th17 cell generation occurs in the intestine is not clear. Using a novel Th17-prone, SFB specific TCRTg mouse, we will study how these cells interact with antigen presenting cells microscopically.	1	
	Determination of Th17 cell fate	We have shown that segmented filamentous bacteria (SFB), a commensal microbe, can induce Th17 helper T cell differentiation in the gut. To find the mechanism of how SFB can skew T helper cell differentiation into Th17, we will examine the fate of "Th17 wanna be" cells in the absence of RORgt after exposure to SFB, by combining RORgt-GFP reporter knock-in mice, RORgt conditional knockout mice, and transgenic mice specific for SFB antigen.	1	
Mann, Devin	Amplifying provider impact on patient engagement with an EHR- integrated digital diabetes prevention program (dDPP)	This study seeks to set the standard for how data from new digital behavior change interventions are integrated into the EHR and clinical workflow. This tool pushes key dDPP data elements (e.g. weight and daily step count) directly into EHR workflows of primary care to enhance patient engagement. It seeks to determine the impact of combining adapted visualizations and summaries of key dDPP data elements directly into the EHR with automated notifications and messaging designed to enhance patient engagement in the dDPP. The study involves provider workflow analysis based on observation and facilitated group tool adaptation sessions. Ongoing activities include piloting of the new tool within the NYU Langone ambulatory primary care network and partnering with digital health companies to determine best practices.	1	Devin.Mann@nyulangone.org

Moore, Kathryn	Role of netrin-1 in adipose inflammation and insulin resistance	The increased accumulation of macrophages and lymphocytes in adipose tissue during obesity propagates chronic inflammation, which is closely associated with systemic insulin resistance, and the development of metabolic syndrome and type 2 diabetes (T2D). Recent studies have explored the mechanisms by which these immune cells arerecruited. However, the signals that cause macrophages to persist in adipose, promoting chronic inflammation, are not understood. We recently uncovered a novel role for the neuronal guidance cue, Netrin-1, in inducing macrophage (Mø) chemostasis and thus blocking their emigration from atherosclerotic plaques. Our preliminary data indicate that Netrin-1 is also increased in adipose tissue from obese mice and humans compared to lean controls. Lethally irradiated wild-type mice reconstituted with Ntn1 null bone marrow display protection against diet-induced adipose inflammation and insulin resistance compared to mice with wild-typemarrow. Based on these data we hypothesize that Netrin-1 critically regulates immune cell trafficking and accumulation in WAT and metabolic dysfunction in HFD feeding, thereby leading to insulin resistance and diabetes. To test this hypothesis, we will determine (1) the mechanisms of Netrin-1 regulation in WAT, (2) the contribution of Mø and Treg derived netrin-1 on WAT inflammation in mouse models of tissue-specific or conditional deletion of netrin1, and (3) whether Netrin-1 targeting using a nanoparticle delivery system improves metabolic parameters in obese mice.	1	Kathryn.Moore@nyulangone.org
Mueller, Elisabetta	Trancriptional regulation of adipocyte function and energy balance	Understanding the transcriptional networks that govern lipid storage and calorie utilization in all adipocyte types in response to intrinsic and extrinsic signals.	1	Elisabetta.Mueller@nyulangone.org
Nazzal, Lama	Role of the gut microbiome in oxalate metabolism	Oxalate is an important molecule associated with multiple human diseases. The human intestinal microbiota protects the host against oxalate-associated toxicity, by oxalate degradation. We aim to explore the role of bacteria in oxalate metabolism in healthy and disease conditions.	2	Lama.Nazzal@nyulangone.org
	The role of the gut microbiome in generation of uremic toxins.	End Stage Kidney Disease affects more than 700,000 in the USA alone. These patients have high risk of mortality from cardiovascular diseases. The aim of our project is to better understand the link between the gut bacteria and possible risk for CVDs in ESKD patients.	1	
Nudler, Evgeny	Sensor mechanisms of HSF activation	The major goal of this project is to understand the molecular mechanism of the heat shock response activation.	1	Evgeny.Nudler@nyulangone.org
	NO signaling in C.elegans	The goal of this project is to identify and characterize new genes that control aging and stress resistance.	1	
Partridge, Nicola C.	Regulation of PTH-induced RankL Transcription in Osteoblasts	PTH acts through PKA to inhibit SIKs and allow CRTCs to enter the nucleus of osteoblasts. This project will determine the role of CRTC2/3 in bone development in mice in vivo using osteoblast-specific deletion of CRTC2/3.	1	Nicola.Partridge@nyulangone.org
	Nuclear Events in PTHR1 Action on Bone	Determine the regulatory mechanisms involved in CRTC2/3 nuclear translocation in vitro in osteoblasts, 2) identify the bZIP transcription factor(s) responsible for CRTC2/3-induced RankL transcription.	1	
Philips, Mark	Direct regulation of hexokinase by Ras	Glucose metabolism is altered in cancer cells but the mechanisms are poorly understood. We have discovered a direct interaction between the most important human oncogene, Ras, and hexokinase, the first enzyme in the glycolytic pathway that phosphorylated glucose. The project available will utilize biochemical methods such as co-immunoprecipitation to characterize the molecular interaction between Ras and hexokinase.	1	Mark.Philips@nyulangone.org
Ramasamy, Ravichandaran	Diabetic cardiovascular complications	Receptor for advanced-glycation end products: key modulator of myocardial ischemic injury.	1	Ravichandran.Ramasamy@nyulangone.org
Ramkhelawon, Bhama	Defective vascular remodeling during aging : role of inflammaging	To investigate why and how age instigated low-grade inflammation (Inflammaging) refrains regeneration capacity of femoral artery following ischemic injury.	1	Bhama.Ramkhelawon@nyulangone.org
	Role of resident macrophages in re-vascularization following ischemic injury	Using genetically modified mice models of resident and monocyte-derived macrophages to investigate their respective roles in assisting re-vascularization in a mouse model of peripheral artery disease (Critical Limb Ischemia (CLI).	1	
Ryoo, H. Don	The role of ATF4 in general stress response.	Amino acid deprivation or excessive misfolded proteins in the endoplasmic reticulum activates a stress response pathway mediated by the transcription factor ATF4. We will use Drosophila to determine precisely how ATF4 is activated, and how this helps the organism resist various forms of cellular stress.	1	HyungDon.Ryoo@nyulangone.org
Scherer, Jennifer S.	A pilot-randomized controlled trial of integrated palliative care and nephrology care at Bellevue Hospital	This is a pilot randomized trial testing the effectiveness of integrated nephrology and palliative care on symptom burden for individuals with advanced CKD. Students can be involved in recruitment, data collection and patient interviews.	1 (prefer bilingual, Spanish/English)	jennifer.scherer@nyulangone.org
	A chart review studying the impact of outpatient palliative care on symptom burden over time in advanced CKD.	This study involves a chart review of patients seen in an ambulatory kidney palliative care clinic to study the change in symptom burden over time in the population seen. Student opportunities include chart review, data collection, data analysis and manuscript preapartion.	1	
Schwartz, Mark	Integrating Community Health Workers into Primary Care Teams to improve Diabetes Prevention in Underserved Communities	Cluster randomized trial of a community health worker intervention to prevent Type 2 DM among patients with prediabetes at Bellevue and Manhattan VA primary care patients.	1	Mark.Schwartz@nyulangone.org
Schmidt, Ann Marie	The role of RAGE in diet induced obesity	RAGE and its ligands are highly expressed in the adipose and liver tissue of mice fed for two weeks with high fat diet, that is, a time prior to the development of obesity, and RAGE null mice are protected from diet induced obesity. The goal of the project is to use mice with conditional cell specific deletion of RAGE to test the hypothesis that both inflammatory and adipocyte specific signals mediate RAGE-dependent development of obesity and metabolic dysfunction in mice fed high fat diet.	1	AnnMarie.Schmidt@nyulangone.org
	The role of mDia1 in diabetic nephropathy	The cytoplasmic domain of RAGE binds to the formin mDia1 and mDia1 is required for the actions of RAGE in contributing to the pathogenesis of diabetic nephropathic changes in mice. The goal of the project is to dissect the effects of podocyte RAGE and mDia1 in the development of glomerular disease in diabetic mice.	1	

	The development of small molecule antagonists that block RAGE signaling	We have developed a “high throughput" assay to screen for small molecules that block the interaction of the RAGE cytoplasmic domain with mDia1. In this project, further in vitro and in vivo analysis of lead hit molecules in the assay will be tested.	1	
Segal, Leopoldo	Effects of micro aspiration induced lower airway dysbiosis on Lung Cancer	We have observed that enrichment of the lung microbiome with anaerobes (possible though microaspiration) is associated with up regulation of PI3K/ERK pathways and lung cancer. In this project, we will examine swallowing parameters and lower airway dysbiosis in subjects with lung cancer and smoking controls. We will also evaluate the effects of micro aspiration using a lung cancer mouse model that allows us to study changes lower airway microbiota.	1	Leopoldo.Segal@nyulangone.org
	Evaluation of regional lower airway microbiome in NTM bronchiectasis	We have observed that enrichment of the lung microbiome with anaerobes (possible though microaspiration) is associated with a blunted TNF alpha production to TLR stimulation, an innate immune response commonly impaired in nontuberculous mycobacteria (NTM) disease. In this project, we will examine regional differences in microbiome and host immune response comparing areas of NTM bronchiectasis with airways without significant disease.	1	
Sevick, Mary Ann	Personalized nutrition to reduce racial disparities in weight loss success	Compared to non-Hispanic whites, non-Hispanic blacks have higher rates of obesity and diabetes risks, but are less successful at losing weight and keeping it off. The goal of this study is to determine if a dietary weight loss intervention personalized to reduce postprandial glycemia is better than a standardized weight loss intervention for reducing weight and reducing the downstream risks of diabetes developing and progressing in non-Hispanic blacks.	1	Mary.Sevick@nyulangone.org
	Personalized Dietary Management in Type 2 Diabetes	Limiting blood sugar peaks following meals is an important treatment goal in the management of type 2 diabetes, but evidence is mixed regarding the best dietary approach for achieving this goal. In this study we will evaluate a Mediterranean-type diet that has been personalized to limit blood sugar peaks following meals.	1	
	Personalized Technology-Supported Counseling to Reduce Glycemic Response in Dietary Weight Loss: the PersonalDiet Study	Limiting post-meal glycemic excursions may be helpful for weight loss success. The purpose of this study is to compare the efficacy of a one-size-fits-all, low-fat, calorie restricted diet with a calorie-restricted diet personalized to reduce postprandial glycemic response in participants with pre-diabetes.	1	
Sigmund, Eric	Advanced diffusion-weighted MRI biomarkers of renal function in healthy kidney and diabetic nephropathy	This project is devoted to applying a comprehensive model to diffusion-weighted MRI contrast in the kidney, judiciously merging separate formalisms capturing microscopic flow and structural anisotropy. The resulting analysis workflow is expected to dramatically enhance diagnostic specificity in complex pathologies like diabetic nephropathy, where separating microstructure, perfusion, tubular flow changes, and water exchange is crucial.	1	Eric.Sigmund@nyulangone.org
Suh, Greg S. B.	Characterization of Post-Ingestive Sugar Sensor in the Brain of Flies	We showed that taste-blind mutants still prefer a sugar solution based on its nutritional content after starvation and identified a candidate sensor that detects the nutritional value of sugar. The project is to characterize the function of the sensor.	1	greg.suh@nyulangone.org
	Identification and characterization of Post-Ingestive Essential Amino Acid Sensor in the Brain of Flies	We recently showed that taste-blind mutants that are insensitive to the taste of umami or protein still prefer a solution containing 10 essential amino acids over 10 non-essential amino acids after protein deprivation. The project is to identify the sensors and characterize their function.	1	
	Understanding the role of the brain CRH system in feeding in Flies and Mice	We demonstrated that CRH system mediates feeding behavior in addition to its known function as stress hormone. Our goal is to understand its role as a feeding stimulant in flies and mice.	1	
Trachtman, Howard	Environmental stressors in pediatric CKD	Impact of environmental chemicals on kidney function in children with CKD Possible interaction with APOL1	1	Howard.Trachtman@nyulangone.org
Wall, Stephen	Community Based Research to Improve Organ Donation Registration among Black Men	This research will lead to increased organ donor registration among black men who visit black owned barbershops using video educational programming and improve understanding as to what video education strategies (targeted versus tailored) are best for encouraging organ donor registration in this setting.	1	Stephen.Wall@nyulangone.org
	Optimizing Educational Video Designs to Improve Minority Organ Donor Registration	This research will lead to increased organ donor registration among Latinos who visit Latino owned barbershops and beauty salons using video educational programming and improve understanding as to what video education strategies (incorporating live footage; ending choices including uplifting, negative consequence, and open ended) are best for encouraging organ donor registration in this setting.	1	

Project Information
Trainee Name:
Mentor Name:
Mentor Department and Division:
Summer 2022 Research Start Date: June 13th, 2022

Project Title:
(A good title is brief and informative. The research hypothesis should be the basis of the title.)

Project Abstract:
(The abstract should include the research question, the rationale for study, the hypothesis, method, and expected main findings. It should be no more than 300 words.)

Project Proposal
Background and Significance:
(State the fundamental problem motivating this area of research and the importance of the project. 500 words maximum)

Hypothesis:
(State the research question, or the concept to be tested. 3-4 sentences)

Specific Aims:
(Concisely state the specific aims of the project. One or two specific aims is recommended. Do not propose more than can be accomplished)

Research Design:
(Describe the overall strategy, methodology, and analyses to be used to accomplish the specific aims of the project)

Potential Pitfalls and Alternate Plans:
(Consider potential problems in your approach. List strategies you will use to address these problems if they arise)

References:
(In the main text of your proposal, annotate references and provide a list of these references here. We suggest using the format in the journal Cell to cite references)

Approval

Mentor Signature _____ Date: _____
I approve of the trainee's proposal.

T35 Program Signature _____ Date: _____
On behalf of the Advisory Committee, I approve of the trainee's proposal.

This completed application should be no longer than 3 pages, exclusive of references.

If you are a medical student from outside of NYU, please also provide one letter of reference along with your application.