

# Pilot Project Program (PPP) Awardees

## Winter-2022

A major goal of the UMass Center for Clinical and Translational Science (UMCCTS) is to accelerate the translation of basic discoveries into practical, cost-effective solutions that improve human health. The PPP provides individual project awards (up to \$50,000 for 1 year) on a competitive basis.

As a result, the UMCCTS's Pilot Project Program (PPP) has funded 7 new projects starting in December 2021. Five of the seven projects include collaborations between UMass Chan Medical School and other institutions including UMass Memorial Healthcare, UMass Amherst, and Worcester Polytechnic Institute (WPI).

Congratulations to the Principal Investigators and their teams on a successful PPP application! We look forward to hearing about the next evolution in your research.

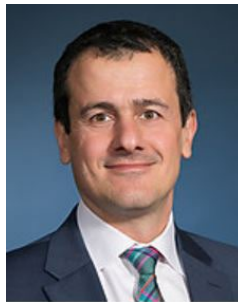
### Project Title:

*Automatic Wild-field Optical Imaging for Transplant Organ Viability Assessment*



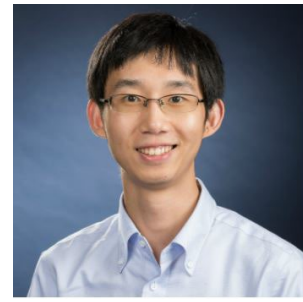
**Dr. Yu Chen**

Associate Professor  
Department of Biomedical  
Engineering, UMass Amherst  
Adjunct Associate Professor  
Department of Radiology  
UMass Chan Medical School



**Dr. Babak Movahedi**

Assistant Professor  
Dept. of Surgery  
UMass Chan Medical School



**Dr. Haichong Zhang**

Assistant Professor  
Dept. of Biomedical Engineering  
Worcester Polytechnic Institute (WPI)

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We're excited to get this support from the UMCCTS. This work will allow us to expand our work into a new area of robotic-assisted optical imaging of transplant organs to predict their viability. Without PPP funding it would be difficult to do this high risk, high reward translational research.”

CHEN PROJECT TEAM

### Project Title:

*STING Agonism for the Treatment of COVID-19*



**Dr. Kate Fitzgerald**  
Professor  
Dept. of Medicine  
UMass Chan Medical School



**Dr. Fiachra Humphries**  
Instructor  
Dept. of Medicine  
UMass Chan Medical School

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We are delighted to receive this pilot award from the UMCCTS PPP program to advance our studies of a novel small molecule STING agonist against Sars-CoV2 infection.”

FITZGERALD PROJECT TEAM

**Project Title:**

*Correction of Defective Splicing in Fragile X Syndrome with Therapeutic Potential*



**Dr. Joel Richter**

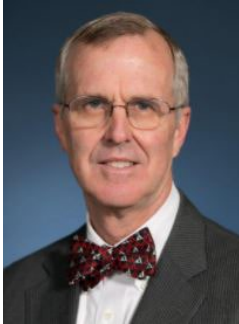
Professor

Program in Molecular Medicine

UMass Chan Medical School

## Project Title:

*Isolated Single Islet Studies to Define the Factors Underlying the Heterogeneity of Islet and Peri-Islet Lymphocytic Infiltration in Human Type 1 Diabetes*



**Dr. David Harlan**

William and Doris Krupp  
Chair in Diabetes  
Professor of Medicine  
Division of Diabetes  
Diabetes Center of  
Excellence  
UMass  
Chan Medical School



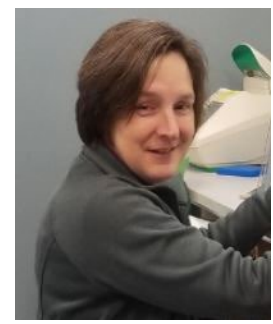
**Dr. Yihao Zheng**

Assistant Professor,  
Mechanical Engineering  
Worcester Polytechnic  
Institute (WPI)



**Dr. Sally Kent**

Professor of  
Medicine, Diabetes  
Division  
Diabetes Center of  
Excellence  
UMass Chan Medical  
School



**Dr. Sambra Redick**

Senior Research  
Scientist  
Program in Molecular  
Medicine  
Diabetes Center of  
Excellence  
UMass Chan Medical  
School

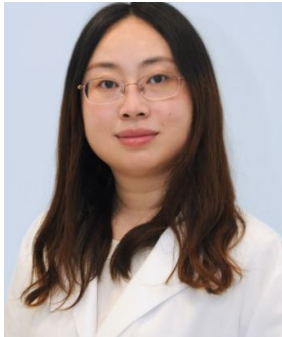
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My WPI and UMass Chan Diabetes Center of Excellence colleagues are most excited to get this support from the UMCCTS. We have been exploring a question that has vexed type 1 diabetes (T1D) investigators for decades, i.e. why the immune system attacks some pancreatic insulin producing cells in individuals with T1D, and leaves other insulin producing cells unscathed. Our team has been working to develop tools that will allow us to address that critical question by studying the pancreas of donors who died with T1D, then from those organs, isolating unique and viable insulin producing cell clusters some of which are being attacked and others are not, to interrogate those cell cluster's function, precise cellular constituents, and those cells' gene expression. Without this PPP funding, continuing our high risk, high reward translational research would be practically impossible”.

**HARLAN PROJECT TEAM**

## Project Title:

*Dissecting Optical Coherence Tomography Features to Predict Risk of Future Advanced Age-related Macular Degeneration*



**Dr. Tianxiao Huan**  
Assistant Professor  
Ophthalmology and Visual  
Sciences  
UMass Chan Medical School



**Dr. Johanna Seddon**  
Professor  
Department of  
Ophthalmology and Visual  
Sciences  
UMass Chan Medical School



**Dr. Yu Chen**  
Associate Professor  
Department of Biomedical  
Engineering, UMass Amherst  
Adjunct Associate Professor  
Department of Radiology  
UMass Chan Medical School

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We're very happy to receive this support from the UMCCTS. This fund is very important for my early career research as an assistant professor. This work will allow us to expand our work to bridge [the] knowledge gap by linking clinical and genetic risk factors with retinal morphology of age-related macular degeneration (AMD). It provides us with the opportunity to conduct such high-risk and high-reward translational research. We will use this pilot funding to generate results and optimize our methods for large-scale retinal morphology – genetics study in the near future to explore the pathogenesis and develop new early diagnosis and treatment strategies for AMD."

**HUAN PROJECT TEAM**



**Project Title:**

*A Deep Learning-Based Real-Time Vascular Anatomy Assessment Tool for  
Emergency Stroke Interventions*



**Dr. Anna Kuhn**  
Assistant Professor  
Radiology  
UMass Chan Medical School



**Dr. Mohammed Salman  
Shazeeb**  
Assistant Professor  
Department of Radiology  
UMass Chan Medical School



**Dr. Clifford Lindsay**  
Assistant Professor  
Department of Radiology  
UMass Chan Medical School

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*We are deeply honored to receive this generous award from UMCCTS and grateful for the feedback from the anonymous reviewers. This PPP funding is essential for our project and without it we would not be able to expand this high-risk research into critically important stroke interventions. We believe the translational work has the potential to not only save lives but improve the long-term outcomes of stroke patients through facilitating more expedient neurointerventions."*

**KUHN PROJECT TEAM**

**Project Title:**

*Tinnitus Characterization Using Reverse Correlation with Applications to Retraining Therapies*



**Dr. Adam Lammert**  
Assistant Professor  
Biomedical Engineering  
Worcester Polytechnic Institute (WPI)



**Dr. Divya Chari**  
Assistant Professor  
Otolaryngology  
Head & Neck Surgery  
UMass Chan Medical School

“We are thrilled that the UMCCTS saw value in our proposal, and has decided to fund the project. This support will allow us to validate a highly novel approach to characterizing tinnitus which has potential to become a clinical assay used to improve primary treatment options for the over 50 million people in US suffering from tinnitus. With PPP funding, we will be able to lay the necessary groundwork for pursuing a clinical trial by conducting the preclinical validation necessary to satisfy the NIH criteria of rigor and reproducibility.”

**LAMMERT PROJECT TEAM**