CENTER FOR CLINICAL & TRANSLATIONAL SCIENCE

UMASS CCTS NEWSLETTER

IN THE NEWS

HELMSLEY CHARITABLE TRUST GRANT TO FUND UMMS IBD DIET RESEARCH

RESEARCHERS TO ADAPT ANTI-INFLAMMATORY DIET FOR CROHN'S DISEASE PATIENTS IN PUERTO RICO

BY SUSAN E.W. SPENCER

UMASS MEDICAL SCHOOL WAS AWARDED A $1.7 MILLION GRANT FROM THE LEONA M. AND HARRY B. HELMSLEY CHARITABLE TRUST TO ADDRESS THE INCREASING PREVALENCE OF CROHN'S DISEASE IN PUERTO RICO IN A COST-EFFECTIVE, CULTURALLY SENSITIVE WAY. WITH THE FUNDING, ANA MALDONADO-CONTRERAS, PHD, ASSISTANT PROFESSOR OF MICROBIOLOGY & PHYSIOLOGICAL SYSTEMS, WILL TAILOR A NOVEL DIET CREATED AT UMASS MEDICAL SCHOOL TO PATIENTS ON THE ISLAND WITH DIFFERENT FOOD AVAILABILITY AND PREFERENCES.

"THE PREVALENCE OF CROHN'S DISEASE HAS INCREASED IN PUERTO RICO BY FIVE-FOLD IN LESS THAN ONE DECADE," DR. MALDONADO-CONTRERAS SAID. "IT IS NOW COMPARABLE TO THAT OF NORTH AMERICA AND EUROPE, REGIONS WITH THE HIGHEST PREVALENCE OF CROHN'S DISEASE IN THE WORLD."

FULL ARTICLE

WHAT'S NEW?

UMMS CCTS SMALL CONFERENCE GRANTS (SCG) HAVE A BIG IMPACT

The UMass Center for Clinical and Translational Science (CCTS) offers Small Conference Grants (SCG), up to $1,000 to multidisciplinary teams that wish to address a critical health need. Whereas this funding opportunity may seem small, it could be just the boost your project needs to get off the ground. Take for example the work of Dr. Edwin Boudreaux.

Equipped with an interest in research based on Suicidology, Dr. Boudreaux, a Professor of Emergency Medicine, Psychiatry and Population & Quantitative Health Sciences as well as the Vice Chair of Research for the Department of Emergency Medicine, applied for a 2019 CCTS SCG. The SCG allowed experts in machine learning (ML) from Worcester Polytechnic Institute (WPI) and Boston University (BU) to convene and develop the Machine Learning Applied to Suicide Prevention in Healthcare Settings (MASH) team.

According to the Center for Disease Control (CDC), Suicide rates increased 33% between 1999 and 2019. Making suicide the 10th leading cause of death in the United States. With the increased focus on mental health in the U.S., it is imperative that clinicians determine the various risk factors associated with a suicide attempt and develop interventions based on patients' individual social/emotional needs. The MASH team utilized the SCG to hold a conference here on the UMass Medical School campus that focused on machine learning and suicidology resulting in a plan that would lead to additional funding and publication.

Dr. Boudreaux and MASH are pleased to report that the SCG grant lead to a publication in Frontiers in Psychiatry titled _Applying Machine Learning Approaches to Suicide Prediction Using Healthcare Data: Overview and Future Directions_.

In addition, the SCG laid the groundwork for a recent P50 Center grant submission to the National Institute of Health (NIH).

Do you have an interest in collaborating with colleagues on a new topic that could lead to significant research findings? A UMass Small Conference Grant could help you get started. Visit the Small Conference Grants site to find out more.

> " _The SCG catalyzed our collaboration with leaders in the field of suicide prevention and machine learning, which has really helped us to bend the curve to get up to speed in this rapidly evolving field._ "
>
> _DR. EDWIN BOUDREAUX_
> _PROFESSOR OF EMERGENCY MEDICINE_

FROM UMMS CCTS PILOT PROJECT PROGRAM TO 2ND NIH RO1 GRANT:

DR. FANG'S NATIONAL STUDY OF US DIETARY PATTERNS HOPES TO REVEAL INSIGHTS AND POSSIBLE NUTRITIONAL CORRELATIONS TO CHRONIC DISEASES

This summer, Dr. Julia Hua Fang has a multitude of research career milestones to celebrate. Dr. Fang was initially awarded a National Institute of Health (NIH) VIP grant of $452,178 in 2019. Then in June of this year, her patent/invention entitled "System and methods for trajectory pattern recognition" was officially issued. This led to her second NIH R01 research grant award of $2,735,127. Dr. Fang is now the Principal Investigator on a project called "iPAT: Intelligent diet quality pattern analysis for harmonized MA-National trials".

The iPAT project evolved from her Pilot Project Program (PPP) project awarded by UMass CTSA in 2012 and her first R01 in 2013. Dr. Fang feels, "it is a great honor to receive this large-scale research grant award from NIH. It is recognition of her many years of research in trajectory pattern recognition in longitudinal studies as well as her investigator team, related labs, centers and institutions."

Her investigator team includes Dr. H. Wang at UMass Dartmouth, and Drs Allison, Ash, Kiefe and Rosal at UMass Medical School, Dr. Steffen at University of Minnesota, Dr. Tinker at Fred Hutchinson cancer research center, Dr. Shikany at University of Alabama-Birmingham and Dr. M. Wang at Harvard University, as well as her research assistants at her Computational Statistics and Data Science lab and multiple faculty members and staff of Division of Preventive and Behavioral Medicine, in the Department of Population and Quantitative Health Sciences who provided their NIH-funded data and support for this study.

The combined NIH grants (VIP and iPAT) total $3.1M and are the first of their kind awards at UMass as well as the first in the U.S. that focus on longitudinal dietary data harmonization from both local and national randomized controlled trials (RCT).The observational studies utilize data from over 3.5 decades and across different geographic regions and ethnic groups in both Massachusetts and across the U.S. Included in the study, are over 160,000 aging women, 6,000 Latinos, and 7,500 Black Americans participating in studies across the western, southern and midwestern regions. The data spans up to 35 years and across 50 clinical and health community centers in the United States.

Meanwhile, Dr. Fang's patent-derived visual analytics, pattern validation, statistical machine learning, and artificial intelligence driven approach are working to reveal insights through this data around nutrition and precision health, which is information that is highly sought after by NIH and the National Science Foundation (NSF). Specifically, this R01 iPAT project will harness several harmonized dietary datasets from highly comparable longitudinal RCT and observational studies for chronic diseases including diabetes, cardiovascular disease, and obesity, generated from her ongoing NIH VIP project. Leveraging the big longitudinal data, the iPAT research team will detect diet quality trajectory patterns that capture the long-term diet quality variations among people and examine pattern-associated chronic diseases.

FROM UMMS CCTS PILOT PROJECT PROGRAM TO 2ND NIH RO1 GRANT: CONTINUED

Dr. Fang will lead her multi-year/multi-site collaborative research project team to further develop intelligent diet quality pattern analysis that will help people visualize distinctions among complex diet patterns, shed light on how patterns evolve in relationship to health outcomes and clarify how well a diet pattern works in various subgroups. The iPAT project aims to understand human food intake behavior and related health risks better which is critical in preventing or managing many chronic conditions, promoting well-being and safety, and improving life-long health. Developing the iPAT tool and system will help uncover more valid evidence for dietary guidelines and more broadly contribute to creating a platform that supports harmonized data management, near-real-time intelligent pattern analyses, and adaptive interventions, that will lead to the next phase of digital trials and precision healthcare methods around nutrition.

Earning the title of Principal Investigator (PI) took Dr. Fang years and a community of collaborators, mentors, and team members as well as the support of the UMCCTS and NIH, but is well worth the dedication it took to create iPAT which will significantly contribute to societies' understanding of our unique dietary patterns across the US and how they affect our health.

Congratulations, Dr. Fang on your second NIH RO1 grant award!
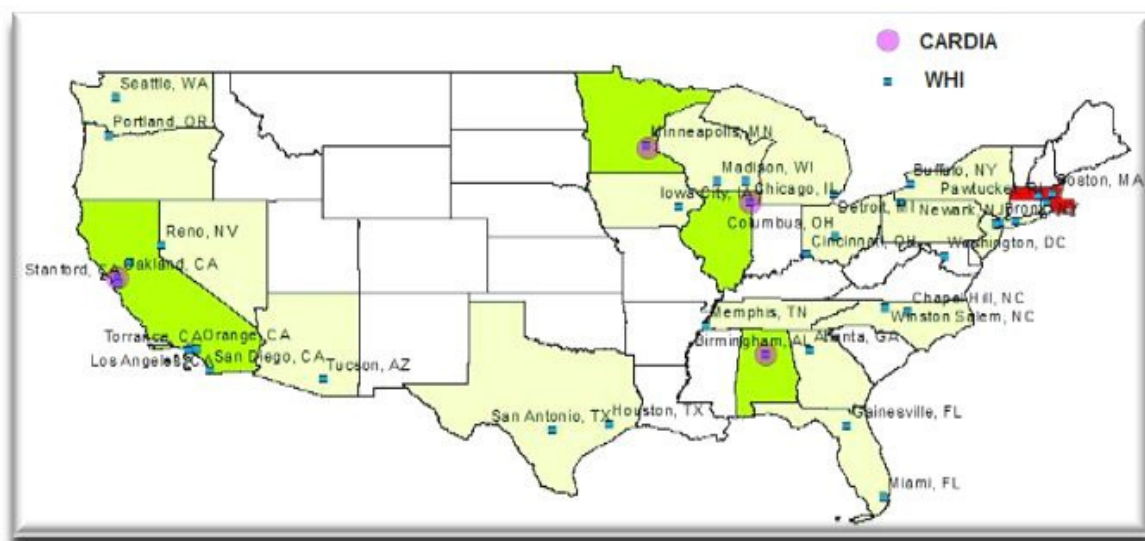
Regions and participants at recruitment: covered in longitudinal RCT and OS studies used for iPAT project.

EVENTS

K CLUB

Next Meeting
Sept. 8, 2021 ~ 4:00-5:00 PM ~ Virtual, Zoom

K Club supports junior faculty in the development of K-level "Mentored Research Scientist Career Development Award" applications. According to NIH, the award is intended to provide either progressive training or further experience in research related to biomedical, behavioral, or clinical sciences. The mentored approach provides the knowledge required for the K-Awardee to progress into an independent researcher over the award period.

K Club meets bi-weekly on the 2nd and 4th Wednesdays of the month from 4-5 pm via Zoom. Attendance at K Club meetings can be for information purposes and/or for review of your application. The group meets to outline the K-Award writing process and to review material being submitted by/to the group for input. To register to attend K Club, please email Robyn.Leonard@umassmed.edu.

FUNDING

UMCCTS PILOT PROJECT PROGRAM (PPP)
LOI DUE SEPTEMBER 10, 2021

The UMass Center for Clinical and Translational Science (UMCCTS) and Worcester Polytechnic Institute (WPI) are pleased to announce the next funding round for the Pilot Project Program (PPP). Individual project awards (up to $50,000 for 1 year) will be made on a competitive basis to enable investigators to accelerate the translation of innovative discoveries into:

- New understanding and/or diagnosis of a disease process
- New devices, therapeutics, and vaccines for the treatment and/or prevention of disease
- New standards of care in the practice of community medicine
- New approaches to community-based research demonstrating true bi-directionality between community and academia
- New methodologies to leverage institutional strengths and new initiatives
- The pursuit of high-risk, high reward studies

Full information, including eligibility requirements and deadlines can be found here.

FUNDING

NIH NCATS DIVERSITY ADMINISTRATIVE SUPPLEMENTS
LOI DUE SEPTEMBER 13, 2021

Are you a student, fellow or faculty member from a group historically underrepresented in biomedical and clinical sciences who is interested in developing a career in translational research?

NIH NCATS offers up to $100,000 funding for research enrichment experiences, typically over a 2-year period. Eligible candidates include students, fellows and faculty members from racial and ethnic groups that have been underrepresented in biomedical research, have disabilities, or are from economically disadvantaged backgrounds. Additional information, including eligibility requirements and deadlines, can be found here.

If you are interested in applying please send the following as a single pdf document to Nate Hafer (nathaniel.hafer@umassmed.edu) by Monday, September 13th, 2021:

- Specific aims (1 page)
- Personal Statement of the candidate, including short-term and long-term research objectives and career goals, a justification for the request for supplemental support, and a plan to return to full productivity at the end of the supplement period. (2 pages max)
- NIH biosketch (5 pages max)

NIH NCATS RE-ENTRY AND RE-INTEGRATION ADMINISTRATIVE SUPPLEMENTS
LOI DUE SEPTEMBER 13, 2021

Are you a trained, doctoral level researcher who stepped away from a research career due to family or financial reasons or military service, and need some support to return to a research-focused career?

Were you previously engaged in training for a research career but needed to leave to escape an unsafe or discriminatory situation resulting from unlawful harassment - and you would like to continue training in a safer and more supportive environment?

For individuals in either of these situations, NIH NCATS offers up to $100,000 funding for mentored translational research experiences, typically over a 1-2 year period. Additional information, including eligibility requirements and deadlines, can be found here.

If you are interested in applying please send the following as a single pdf document to Nate Hafer (nathaniel.hafer@umassmed.edu) by Monday, September 13th, 2021:

- Specific aims (1 page)
- Personal Statement of the candidate, including short-term and long-term research objectives and career goals, a justification for the request for supplemental support, and a plan to return to full productivity at the end of the supplement period. (2 pages max)
- NIH biosketch (5 pages max)

RESEARCH TOOLS & RESOURCES

NDRI BIOSPECIMENS

NDRI specializes in meeting researchers' needs for specific human organs and tissues for your rare disease research. NDRI provides an array of tissue types from any body system. Biospecimens from diseased and non-diseased surgical, autopsy, and low post-mortem interval (PMI) donors are available.

- NDRI maintains an inventory of various frozen and fixed tissue samples.
- Common diseases, including cancer, diabetes, and Alzheimer's disease
- Rare diseases, including amyotrophic lateral sclerosis (ALS) and lymphangioleiomyomatosis (LAM)

More information

CITE & SUBMIT

Please cite the NIH CTSA award any time you use The UMMS Center for Clinical and Translational Science resources, services and facilities or received funding through the Center. "The project described is supported by the National Center for Advancing Translational Sciences, National Institutes of Health, through Grant UL1 TR001453, (or TL1 TR001454, or KL2 TR001455, as appropriate). The content is solely the responsibility of the authors and does not necessarily represent the official views of the NIH."

EDUCATION

I-CORPS MINI-COURSE - REGISTRATION NOW OPEN
REGISTRATION THROUGH SEPT 15, 2021

This Fall the UMass Center for Clinical and Translational Science is once again offering a short course to help investigators understand the commercial value of their inventions. Known as I-Corps, it's designed to support the translation of biomedical research by providing early-stage education and strategic guidance to faculty, staff and students during the initial phase of technology development.

Sign up Now! Registration closes September 15th

The course starts on October 15, 2021.
More information and to register

Questions? Contact Nate Hafer at 508-856-2511 or Nathaniel.hafer@umassmed.edu

A similar course was recently held at UAB. Learn more here: https://youtu.be/xXZoWy0-x2g

- Does your latest discovery have commercial value?
- Would a potential "customer" of your research welcome your technology, protocol, or intervention?
- I-Corps can help!

ECIRTIFICATION HUMAN RESEARCH PROTECTIONS TRAINING PROGRAM: NOW AVAILABLE THROUGH UMCCTS COMMUNITY ENGAGEMENT AND COLLABORATION CORE

The UMMS IRB will now accept completion of the CIRTification program as an alternative to the CITI Program for community members who collaborate on UMMS research projects. CIRTification is a web-based human research protections training program tailored for community research partners. CIRTification Online was designed as an alternative to the CITI training program with community research partners in mind and focuses on the unique roles and responsibilities that community partners hold in health research projects. This program is specifically and only for community members that do not have an eIRB account who will work on UMMS studies. This training program takes about three hours to complete and includes audio, text and interactive activities around research involvement. Community partners will receive a certificate of completion for this training. This program has received positive feedback from local users. CIRTification was developed and is administered by the University of Illinois Chicago Center for Clinical and Translational Science. The program is available to UMMS through the UMCCTS Community Engagement and Collaboration Core (CECC) in collaboration with the IRB. Karen Del'Olio of the CECC is primary administrator for CIRTification at UMMS. Please contact Karen.Delolio@umassmed.edu with any questions about this program. Details for researchers and learners are available here.

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SHARE YOUR SUCCESS STORY!

Have you had your research published that cites the UMass Center for Clinical and Translational Science? Has your patent been filed on technology developed using Center funding or resources? Did your pilot project receive external grant funding? Share it with us at ccts@umassmed.edu. Sharing your success demonstrates the importance and effect of the Center for Clinical and Translational Science at UMass.

NEWSLETTER SUBMISSIONS

To be included in the CCTS Monthly Newsletter, please send announcements, including a link, to ccts@umassmed.edu. The newsletter is published the first week of each month.

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