



Pacific Northwest bioMedical Innovation Co-laboratory (PMedIC):

An OHSU/PNNL Collaboration



NEW NAME AND LOOK, SAME MISSION

PMedIC co-directors Beth Habecker, **OHSU**, and Bobbie-Jo Webb-Robertson, **PNNL**, along with the rest of the PMedIC team, have observed significant growth the past few years, strengthening the long-standing partnership between the institutions. Since the PMedIC partnership was formalized in 2018, the grant portfolio has grown more than 5-fold. There are currently 16 funded programmatic projects sponsored by the National Institutes of Health (NIH) and multiple foundations—a clear sign that PMedIC is moving beyond its original precision medicine focus to areas such as neuroscience, nutrition, reproductive health, and infectious disease.

This programmatic expansion led to the need for a name that better represents PMedIC's basic and clinical research projects and embraces the future of its collaborations. Thus, the team is excited to announce the new name: Pacific northwest bio-Medical Innovation Co-laboratory, PMedIC.

Co-Founder of PMedIC Named to CARE Board of Directors



Governor Jay Inslee recently announced the appointment of **Karin Rodland**, Laboratory Fellow in the **Biological Sciences Division** at PNNL to the Board of Directors of the Andy Hill Cancer

Research Endowment (CARE) Fund. As part of the Board, Rodland will help guide the use of public funds to advance cancer research and improve health outcomes in the state of Washington. She will also work to promote more geographic diversity in the allocation of state funds for cancer research. Rodland is one of the founding Directors of PMedIC, and she holds a joint appointment as an Affiliate Professor of Cell, Developmental, and Cancer Biology at OHSU. **Full story.**

Pilot Funding Mechanism Pairs OHSU and PNNL Researchers

PMedIC added a new funding mechanism, the OHSU PMedIC Innovation Grant, which accepts applications from OHSU faculty who developed collaborative projects in coordination with scientists at PNNL. Grants were reviewed based on their potential to expand the PMedIC partnership with “priority given to applications that enhance the diversity of research collaborations between the two institutes and the types of faculty involved in collaborations” and the likelihood of success in future external grant applications.

Two other funding mechanisms, OHSU's Exploratory Research Seed (ERS) grants and PNNL's internal research dollars, called Laboratory Directed Research and Development (LDRD), have already helped launch 13 new collaborations (Figures 1 and 2).

Visit pmedic.labworks.org for projects, highlights, and seminars.

OHSU PMedIC Innovation Grant

Congratulations to the first grant recipients.



BILL MESSER | OHSU



JOHN MELCHIOR | PNNL

The role of lipoproteins in pulmonary defense against SARS-CoV-2

OHSU researchers Dr. Akram Khan, Dr. Fikadu Tafesse, and Dr. William Messer will investigate how a SARS-CoV-2 infection alters lipoproteins (including HDL, LDL, and VLDL). In collaboration with John Melchior, the team will develop a highly sensitive lipoprotein profiling system in which trace amounts of a rhodamine-labeled phospholipid can be exchanged into lipoproteins in human biofluids where they exist at extremely low abundance, such as in human cerebrospinal fluid and BAL fluid. According to Messer, “The ability to measure HDL sub-species in pulmonary surfactant would be a game-changing capability that would allow for the first time a detailed analysis of particles generated directly from pulmonary tissue.” In addition, understanding roles of lipoproteins in COVID-19 could lead to novel precision therapeutics that boost HDL populations which protect against development of COVID-19.



TEJPAL GILL | OHSU



ERNESTO NAKAYASU | PNNL

Effect of HLA-B27 and disease status on the metabolome in ankylosing spondylitis.

The proposed study will provide a unique opportunity to define the local and systemic disease pathogenesis of ankylosing spondylitis (AS), an inflammatory form of spinal arthritis that can cause severe and chronic pain and affects more than three million Americans. In collaboration with Dr. Ernesto Nakayasu, an expert in high-resolution metabolomics, Dr. Tejpal Gill will examine both the microbiome and host (metabolome) to determine whether metabolites are altered in AS patients compared to healthy individuals with and without the HLA-B27 gene—one of the strongest disease-genetic factor associations in AS.

World Health Day is April 7

World Health Day is celebrated annually to bring awareness to specific health concerns that affect people worldwide. This year, the World Health Organization’s campaign, “our planet, our health,” focuses on those diseases that are worsened by pollution. [Learn more here.](#)

LDRD and ERS Grant Collaborations for Accelerating Scientific Discoveries

LDRD

FY21

Tao Liu & Sanjay Malhotra	Kate Schultz & Sanjay Malhotra	Sneha Couvillion & Dan Marks
Phosphoproteomics Characterization of Short-term Taxane Response in Patient-derived Models	In silico Assessment of Novel Anti-cancer Small Molecules at GPCR, Kinase and Receptor Targets	Does the Brain Differentially Alter Metabolic and Immunologic Programs in the Bone Marrow in a Pathogen-specific Manner?
Neeraj Kumar & Sanjay Malhotra	Ernesto Nakayasu & Jonathan Pruneda	Chia-Feng Tsai & Ruth Napier
Computational and Machine Learning Tools to Design Therapeutic Candidate for Melanocortin Receptor	Identification of Novel Bacterial Ubiquitin Ligases and Characterization of their Roles in Virulence	The Effect of Nod2 on TCR Signaling using a Global Proteomics and Phosphoproteomics Approach

FY22

Sneha Couvillion & Jeni Johnstone	Thomas Metz & Lisa Vrooman
Characterizing the fecal lipidome in children with ADHD following multinutrient supplementation	Proteomic and Metabolomic Analyses of Oviductal Fluid from Reproductive Age Rhesus Macaques

ERS Grants

FY21

Ferdinando Pucci & Jennifer Kyle	Alejandro Aballay & Ernesto Nakayasu	Julia Maxon & Tao Liu
Lipidomics of Extracellular Vesicles	Metabolomics of Intestinal Lumen	Targeting SETBP1 to Improve Therapies for Patients with Aggressive Leukemias

FY22

Lynn Sakai & Ying Zhu	Joseph Quinn & John Melchior	Jacob Raber & John Melchior
Spatial Proteomics and Aortic Aneurysm	The effect of choline supplementation upon lipid profile in an APOE4/E4 human subject	Development of a method for characterization of apoE-containing and apoE-free cerebrospinal fluid fractions as a function of APOE genotype

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