January 25 - 27, 2023 Santa Clara, CA

UCSF Precision Medicine PMVC 2023



University of California San Francisco







Keith R. Yamamoto, PhD Director, UCSF Precision Medicine Vice Chancellor for Science Policy and Strategy On behalf of UC San Francisco, co-sponsor of the conference, I welcome you to PMWC 2023!

Precision medicine is a central element of UCSF's vision. We are inspired by the progress made in recent years, within our institution and in collaboration with colleagues at other academic centers, in industry, in government, and in patient advocacy organizations. With support and partnerships from federal, state and private sources, we have created and progressively expanded a multi-component precision medicine program across UCSF, enabled by high-powered computational tools, that is integrating and advancing biomedical research, health, and health care.

By establishing a continuum – a multi-directional flow of information – across basic, translational/ clinical and population research, we can germinate lab-testable hypotheses, discover disease mechanisms that imply new therapeutic regimens and drive drug discovery, and identify social determinants of health to promote disease prevention and wellness.

The remarkably broad scope of PMWC 2023 demonstrates the true breadth and depth of precision medicine, spanning the spectrum from fundamental discovery to health care delivery and economics. The UCSF speakers featured in these pages are just examples of this diversity of approaches, projects, partnerships, and their impact.

Importantly, as a public university, UCSF is committed to equity and health justice. Our deep conviction is that precision medicine can and must benefit everyone. As we advance technologies and innovations, our patients and community remain at the core of our mission.

I wish you a very productive meeting and look forward to connecting with many of you personally.

Precision Medicine at UCSF

Precision Medicine collects, connects and applies vast amounts of data about our health – from the basic molecular understanding of disease to clinical, environmental, psychosocial and mobile lifestyle data – to understand why individuals respond differently to treatments and to guide more precise and predictive medicine at the individual patient level. Universities associated with major medical centers, with their access to large amounts of patient data, a broad array of analytical and digital technologies and world-class faculty driving the innovation, are particularly well positioned to successfully carry out precision medicine approaches and UCSF has been at the forefront in advancing this field. Our investigators played key roles in establishing the full spectrum of precision medicine approaches, include helping to lead the 2011 National Academy of Sciences committee that envisioned and named precision medicine, and to develop President Obama's Precision Medicine Initiative, announced at the 2015 State of the Union address.

UCSF is committed to taking advantage of precision medicine approaches in advancing patient care worldwide and to that end has built out capabilities across multiple disciplines, such as advanced imaging, 'omics capabilities and computational capabilities along with robust and extensive Knowledge Networks (see figure). These resources are available to our faculty across the full range of indications and are being utilized in projects across our campuses. This brochure showcases examples of the key precision medicine institutes and projects our faculty are advancing.



If you would like to learn more, please visit us at: https://precisionmedicine.ucsf.edu For specific questions contact: precisionmedicine@ucsf.edu Join the conversation @UCSFPrecision

UCSF in the News

April 2022

Genomic Sequencing Is Changing Diagnosis, Treatment for Patients with Brain Cancer

UCSF study shows aggressive therapy is best for deadly tumor masquerading as lower-grade Glioma. Senior author David Solomon, MD, PhD, assistant professor in the UCSF Department of Pathology is also the principal investigator of the UCSF Glioblastoma Precision Medicine Program.





June 2022

A Brain Tumor Patient Celebrates Survival - How a 15-month Prognosis Became 22 Years and Counting

UCSF patient Cheryl Broyles was diagnosed with glioblastoma and her survival has been the result of luck, tumor location, and cutting-edge treatment and diagnostics. Analysis of a tumor specimen sequenced using the UCSF 500 Cancer Gene Panel identified two potential chemo drugs usually only used for melanoma. Those drugs were credited for keeping her tumors stable.

July 2022

Scientists Map Networks of Disease-Associated Immune Genes

Alex Marson, MD, PhD, director of the Gladstone-UCSF Institute of Genomic Immunology was the co-senior author of the study, published in Nature Genetics that describes the most detailed map yet of how complex networks of genes function together, with implications for developing immunotherapies and understanding autoimmune diseases.





December 2022

Gene Therapy Breakthrough Saved a Child from "Bubble Boy Disease"

The first person to receive gene-corrected stem cells for the most serious of primary immunodeficiencies, Artemis-SCID, was treated at UCSF by Mort Cowan, MD, and Jennifer Puck, MD and now lives the life of a normal and happy young child.

Key Centers and Institutes



Bakar Computational Health Sciences Institute

Advancing computational health sciences in research, practice and education — in support of Precision Medicine for all.





microbiome.ucsf.edu

The Benioff Center for Microbiome Research

Accelerating our understanding of how microbes promote health and prevent disease and leveraging this information to develop novel, effective treatment paradigms.



Center for Digital Health Innovation

Pairing UCSF expertise with healthcare and technology leaders to deliver on the promise of digital health technologies.

Comprehensive Cancer Center

cancer.ucsf.edu



pharm.ucsf.edu/transpers

Helen Diller Family Comprehensive Cancer Center

UCSF Helen Diller Family Comprehensive Cancer Center combines basic science, clinical research, epidemiology/cancer control and patient care from throughout the University of California, San Francisco system.

The Center for Translational and Policy Research on Precision Medicine (TRANSPERS)

TRANSPERS is the premier research organization for developing evidence-based information about the use of precision medicine - addressing key issues around the access, quality, and value of precision medicine that will help guide patients, healthcare providers, researchers, industry and policymakers on how it can be best applied to improve health.

Key Centers and Institutes



immunox.ucsf.edu

The Bakar ImmunoX Initiative

Integrating space, infrastructure, and technology through CoProjects for scientists to share ideas and data and advance hypotheses around research for the benefit of the broader immunology community.



mfprecision.ucsf.edu



nextgendiagnostics.ucsf.edu

The Center for Maternal-Fetal Precision Medicine

The Center for Maternal-Fetal Precision Medicine is developing research studies and clinical trials aimed at understanding, and ultimately curing, a host of fetal and congenital diseases.

Next-Generation Sequencing Diagnosis of Infectious Disease

Pioneers the development of novel technologies for diagnosing mysterious illnesses.



Clinical & Translational Science Institute

ctsi.ucsf.edu

Clinical & Translational Science Institue

The Clinical & Translational Science Institute (CTSI) facilitates clinical and translational research to improve patient and community health – it provides infrastructure, services, and training to enable research to be conducted more efficiently and effectively, and in new ways.



braintumorcenter.ucsf.edu /research/glioblastoma-precision-medicine-program

UCSF Brain Tumor Center:

The UCSF Brain Tumor Center is one of the largest and most comprehensive programs for brain tumor treatment in the United States. It is dedicated to serving every aspect of the patient experience.



atomscience.org

Accelerating Therapeutics for Opportunities in Medicine (ATOM)

Public-private partnership between GSK, LLNL, FNLCR and UCSF combining high performance computing, diverse biological data, and emerging biotechnologies to create a new pre-competitive platform for drug discovery.



bios.ucsf.edu

UCSF Biobanking and Biospecimen Initiative (BIOS)

Facilitating precision medicine development by increasing the number, quality, and value of biospecimens available for research.



BRIDGE

Allows for configuration of new clinic specific dashboards making use of UCSF's existing data integrations and widgets.



ccmi.org

Cancer Cell Map Initiative

Studying complexes of biological molecules, including particular proteins mutated in cancer.



Clinical Cancer Genomics Laboratory

UCSF 500 Cancer Gene Panel to identify drivers within a patient's tumor and potential therapeutic targets.



epgp.org

Epilepsy Phenome/Genome Project

Identifying and studying the genes of epilepsy.



braintumorcenter.ucsf.edu /research/glioblastoma-precision-medicine-program

Glioblastoma Precision Medicine Program

Under this program, five cutting-edge projects explore bold avenues to potentially advance treatment for malignant glioma.



pretermbirth.ucsf.edu

Global Preterm Birth Initiative

Working to eliminate racial disparities in preterm birth and improve health outcomes for babies born too soon.



Health eHeart

Gathering more data about heart health from more people than any research study has done before utilizing digital technologies.

health-eheartstudy.org



informationcommons.ucsf.edu

Information Commons

A searchable and accessible repository of all UCSF clinical data and models, and related basic science & population data to enable new health insights to advance improved patient care.



precisionmedicine.ucsf.edu/building-knowledge-network

KNECT

New data management and computational platform to analyze brain function in patients with neurodegenerative conditions by combining datasets gathered by researchers of different disciplines.



rdo.ucsf.edu/marcus-program-precision-medicine-innovation-mppmi-overview-2022

Welcome to the Open MS BioScreen

A free tool by the University of California San Fr

Marcus Program in Precision Medicine

The Marcus Program in Precision Medicine Innovation (MPPMI) seeks to fuel innovation in precision medicine by fostering creative, high risk, high impact team science projects supporting the precision medicine

continuum.

MS Bioscreen

A data infrastructure platform that gathers all relevant MS data from different sources and visually represents the disease course of an individual with MS within the context of a large cohort of patients.



pophealth.ucsf.edu/population-health-data-initiative

SF CAN San Francisco Cancer Initiative

A community partnership to fight cancer.

www.sfcancer.org

Population Health Data Initiative (PHDI)

Supports efforts to provide data and other resources for population health, health equity, and health services research.

San Francisco Cancer Initiative

San Francisco Cancer Initiative (SF CAN) The San Francisco Cancer Initiative (SF CAN) is a collaborative effort to reduce cancer in San Francisco by engaging health care systems, government, community leaders, and residents.



SPOKE Knowledge Network

Database of databases that allow researchers to explore the interconnected pathways of gene and cellular behavior.



tracktbi.ucsf.edu

Transforming Research and Clinical Knowledge in TBI (TRACK-TBI)

To better understand and treat traumatic brain injury, UCSF is working with public-private partners to collect and analyze detailed and extensive clinical data from multiple sites across the brain injury spectrum.



spacehealth.ucsf.edu

UC Space Health

A UC-wide program, fosters discovery, education, and innovation to address the complex health and medical considerations of Human Spaceflight. The Spaceflight environment generates novel R+D directly transferable to terrestrial healthcare challenges and needs – especially in areas of precision health, remote sensing and distributed care.

PMWC Pioneer Awards







Congratulations to Lea Grinberg and Daniela Ushizima,

winners of the PMWC Pioneer Award for developing a new and reliable technique for diagnosing Alzheimer's disease and measuring the efficacy of experimental treatments. Lea Grinberg (left), Daniela Ushizima

Day One - Track 1

January 25

1:15 pm

"Future Modalities"



Nadav Ahituv, PhD, is a Professor in the Department of Bioengineering and Therapeutic Sciences and the Interim Director of the Institute for Human Genetics at the University of California, San Francisco. He received his PhD in human genetics from Tel-Aviv University working on hereditary hearing loss. His lab was one of the co-developers of massively parallel reporter assays (MPRAs) that allow for high-throughput functional characterization of gene regulatory elements and pioneered the use of gene regulatory elements as therapeutic targets.

2:15 pm

"Cellular Rejuvenation Programming"

Hana El-Samad, PhD, runs a research group that seeks to deliver insights into biological feedback control, unraveling evolutionary successful principles of feedback strategies that are most appropriate for the biological substrate and achieving understanding at the right depth and granularity for forward engineering them with predictable outcomes. Her goal at Altos Labs is to rationally reprogram cells to a state of health and resilience.



Day One - Track 2

9:00 am



"How can AI and Data Science Determine Which Patients should be Preemptively Tested?" (Chair)

Russ Cucina, MD, MS, is the Vice President, Health Informatics and Chief Health Information Officer for the UCSF Health System, and Professor of Medicine in the Division of Hospital Medicine. In addition to his clinical practice, he is responsible for the clinical executive leadership of UCSF's analytics, software, and information infrastructure to advance the missions of UCSF and its partners.

Day One - Track 2

January 25

9:00 am

"How can AI and Data Science Determine Which Patients should be Preemptively Tested?"



Lisa Kroon, PharmD, is a Professor and Chair of the Department of Clinical Pharmacy in the School of Pharmacy at the University of California in San Francisco. Dr. Kroon co-directs the UCSF Fontana Tobacco Treatment Center where she has been a smoking cessation provider for over 15 years. Her current research interests include evaluating the impact of pharmacist provider status and expanded scope of practice, diabetes therapeutics, tobacco cessation, and innovative pharmacy practice models.

10:00 am

"Establishing Genomics in the Clinic as a Routine Requires AI and Automation" (Chair)

Bani Tamraz, PhD, has a primary interest in identification of genetic determinants of drug response through modern methods aimed at addressing pharmacogenomics research and translating that information into new diagnostics and treatment strategies at point-of-care.



10:00 am



"Establishing Genomics in the Clinic as a Routine Requires AI and Automation"

Sergio Baranzini, PhD, directs a lab at UCSF, composed of experimental and computational researchers. His current work involves the genetics of MS susceptibility and progression, and molecular studies to identify different stages of the disease and differential response to treatment. His lab also performs in-vitro and in-vivo immunological studies to understand the pathogenesis of MS.

Day One - Track 2

January 25

11:00 am

"Representation and Equity in Genomic Data"



Malcolm John, MD, PhD, is the inaugural Medical Director of Health Equity for UCSF Health and Co-Chair of its Health Equity Council. He focuses on integrating health equity into the UCSF Health System and its Quality Improvement infrastructure to ensure all have a fair and just opportunity to reach optimal health through equitable access to care, clinical outcomes, and patient experiences. He launched the UCSF Black Health Initiative (BHI) to help UCSF be a better partner with the Black community to address COVID-19 and other disparities.

1:00 pm

"Overcoming Barriers to Bringing Multi-omic's into Clinical Practices" (Chair)

Russ Cucina, MD, MS, is the Vice President, Health Informatics and Chief Health Information Officer for the UCSF Health System, and Professor of Medicine in the Division of Hospital Medicine. In addition to his clinical practice, he is responsible for the clinical executive leadership of UCSF's analytics, software, and information infrastructure to advance the missions of UCSF and its partners.



Day One - Track 3

1:30 pm



"Novel Clinical Trial Designs"

Laura Esserman, MD, leads work that spans the spectrum from basic science to public policy issues, and the impact of both on the delivery of clinical care. She is recognized as a thought leader in cancer screening and over-diagnosis, as well as innovative clinical trial design. She led the creation of the University of California-wide Athena Breast Health Network, a learning system designed to integrate clinical care and research. In 2020 she got FDA approval for an I-SPY Covid trial, designed to rapidly screen and confirm high impact treatments to reduce mortality and time on ventilators.

Day One - Track 4

January 25

9:00 am

"How New Public-Private Collaboratives Can Catalyze Transformative Health Breakthroughs" (Chair)



Keith Yamamoto, PhD, as UCSF's first vice chancellor for Science Policy and Strategy, leads efforts to anticipate the needs of an increasingly dynamic biomedical research endeavor, and to position UCSF optimally, by influencing and shaping science policy at the state and national levels. He is an elected member of the National Academy of Sciences, the National Academy of Medicine, the American Academy of Arts and Sciences, and the American Academy of Microbiology, and President-Elect for the American Association for the Advancement of Science.

9:45 am "Moving Sequencing into the Clinical Setting" (Chair)

Charles Chiu, MD, PhD, is a professor at UCSF, Director of the UCSF-Abbott Viral Diagnostics and Discovery Center (VDDC), and Associate Director of the UCSF Clinical Microbiology Laboratory. Chiu currently leads a translational research laboratory focused on clinical metagenomic sequencing assay development for infectious diseases and genomic investigation and surveillance of emerging pathogens, including the SARS-CoV-2 coronavirus.



1:00 pm

"How will Cheap Genome Sequencing Impact Genomic Medicine"



Aleksandar Rajkovic, MD, PhD, serves as the Medical Director and Chief of the Center for Genetic and Genomic Medicine (CGGM) that organizes, coordinates and oversees Clinical Genetics and Genomics Services across the UCSF Health System. His research interests lie in basic and translational medical sciences in reproductive and population genetics. His current work focuses on implementing precision medicine tools across UCSF and evaluating their clinical significance and validity.

Day Two - Track 2

January 26

9:00 am

"Real World Evidence Data" (Track Chair)



Courtney McFall has worked at UCSF as a senior project and program manager for 14 years, where she strategically develops, plans and implements precision medicine projects and programs. Courtney works closely with Keith Yamamoto to manage UCSF's presence at the Precision Medicine World Conference, from strategic development, track and session planning, speaker preparation, logistics, communications and our physical presence. She has a background is biological sciences, neuroscience and pediatrics. Courtney is also a rare disease patient and advocate.

9:00 am

"Real World Evidence Data" (Track Chair)

Ben Rubin, PhD, advances precision medicine across UCSF and with external partners by developing new strategic directions, long- and short-range plans, and innovative initiatives. Prior to this position, Ben led business development efforts for UCSF's Bakar Computational Health Sciences Institute (BCSHI) and served as a Science Officer for the California Initiative to Advance Precision Medicine (CIAPM). His work in precision medicine is informed by prior experiences as a basic neuroscience researcher and children's health policy analyst and advocate.



9:00 am

"Clinical Studies Using RWD"



Sanket Dhruva, MD, uses health services research methods to understand and strengthen the evidence base for the safe and effective use of drugs and medical devices, with the goal of improving the quality of care and clinical outcomes for patients.. As a cardiologist, Dr. Dhruva cares for patients at the San Francisco Veterans Affairs Medical Center. Dr. Dhruva earned his MD degree and completed internal medicine residency at UCSF.

Day Two - Track 2

January 26

9:45 am

"Beyond the EHR: Acquisition of RWD Types to Enable Precision Medicine" (Chair)



Riley Bove, MD, is a digital health innovator within the neurosciences at UCSF. Her NIH, DOD and NSF funded work focuses on delivering precision medicine tools to the point of care, where their efficacy can be tested.

11:00 am

"Data Linkage, Harmonization, and Quality" (Chair)

Vivek Rudrapatna, MD, PhD, is a physician and a clinical data scientist. His research group works on developing new methods for analyzing electronic health records and other large datasets to uncover real-world evidence on treatment effects. Vivek is a practicing gastroenterologist and specializes in the treatment of patients with Inflammatory Bowel Disease (IBD). As a clinician, a researcher, and a patient, he is interested in the study of precision medicine as it pertains to this patient population.



11:00 am

"Data Linkage, Harmonization, and Quality"



Rohit Vashish, PhD, research includes developing methods to manage and quality control large-scale electronic health record data, and generate real-world evidence in the light of causal inference and machine learning to help inform medical and regulatory decision-making in healthcare.

Day Two - Track 2

January 26

11:00 am

"Data Linkage, Harmonization, and Quality"



Mindy Hebert-Derouen, PhD, MPH, ongoing research efforts are focused on cancer prevention and control and address inequities in cancer outcomes due to multi-level determinants, especially structural and social determinants of health. She has expertise pooling and harmonizing complex multi-level data from disparate sources, including contextual-level data and data from electronic health records, and designing analyses that use multi-level data to study cancer inequities.

1:00 pm "Using RWE to Uncover and Address Health Disparities"

Robert A. Hiatt, MD, PhD, is Professor and former Chair of the Department of Epidemiology and Biostatistics at UCSF, and the Associate Director for Population Sciences at the UCSF Helen Diller Family Comprehensive Cancer Center. His research interests include cancer epidemiology, especially breast cancer, cancer prevention and screening, health services and outcomes research, the social determinants of cancer, and environmental exposures in early life development related to cancer. He is Principal Investigator of the NIH All of Us Precision Medicine Initiative at UCSF.



2:15 pm

"Fireside Chat" (Chair)



Vivek Rudrapatna, MD, PhD, is a physician and a clinical data scientist. His research group works on developing new methods for analyzing electronic health records and other large datasets to uncover real-world evidence on treatment effects. Vivek is a practicing gastroenterologist and specializes in the treatment of patients with Inflammatory Bowel Disease (IBD). As a clinician, a researcher, and a patient, he is interested in the study of precision medicine as it pertains to this patient population.

Day Two - Track 2

January 26

2:15 pm





Atul Butte, MD, PhD, is the Priscilla Chan and Mark Zuckerberg Distinguished Professor and Director of the Bakar Computational Health Sciences Institute at UCSF, and is also the Chief Data Scientist for the entire University of California Health System, the tenth largest by revenue in the United States, with 20 health professional schools, 6 academic health centers, and 10 hospitals. Dr. Butte is an inventor on 24 patents and has authored over 200 publications, with research repeatedly featured in the New York Times and Wall Street Journal.

Day Two - Track 3

9:30 am

"Chronic Diseases in Women"

Marina Sirota, PhD, is an Associate Professor at the Bakar Computational Health Sciences Institute at UCSF. Prior to that she was a Senior Research Scientist at Pfizer after getting her PhD in Biomedical Informatics at Stanford. Her research interests lie in developing computational integrative methods and applying these approaches in the context of disease diagnostics and therapeutics.



10:00 am

"Stem Cells, Preimplantation and Prenatal Genetics"



Teresa Sparks, MD, is a physician who specializes in Maternal-Fetal Medicine and Clinical Genetics. Her clinical time is spent performing prenatal ultrasounds, developing strategies for genetic evaluations of fetal anomalies, counseling families about the management of fetal anomalies, and caring for pregnant individuals who are diagnosed with a genetic disease themselves. Dr. Sparks research focuses on applying genomic sequencing, functional studies, and fetal phenotyping to discover genetic diseases underlying non-immune hydrops fetalis.

Day Two - Track 3

January 26

11:00 am

"Precision Health for Mothers and Babiess"



Aleksandar Rajkovic, MD, PhD, serves as the Medical Director and Chief of the Center for Genetic and Genomic Medicine (CGGM) that organizes, coordinates and oversees Clinical Genetics and Genomics Services across the UCSF Health System. His research interests lie in basic and translational medical sciences in reproductive and population genetics. His current work focuses on implementing precision medicine tools across UCSF and evaluating their clinical significance and validity.

1:00 pm

"Precision Health for Mothers and Babies: Components of Pregnancy Health"

Marina Sirota, PhD, is an Associate Professor at the Bakar Computational Health Sciences Institute at UCSF. Prior to that she was a Senior Research Scientist at Pfizer after getting her PhD in Biomedical Informatics at Stanford. Her research interests lie in developing computational integrative methods and applying these approaches in the context of disease diagnostics and therapeutics.



2:15 pm

"Reproductive Aging" (Chair)



Aleksandar Rajkovic, MD, PhD, serves as the Medical Director and Chief of the Center for Genetic and Genomic Medicine (CGGM) that organizes, coordinates and oversees Clinical Genetics and Genomics Services across the UCSF Health System. His research interests lie in basic and translational medical sciences in reproductive and population genetics. His current work focuses on implementing precision medicine tools across UCSF and evaluating their clinical significance and validity.

Day Two - Track 3

2:15 pm

January 26

"Reproductive Aging"



Diana Laird, PhD, directs the Laboratory of Germline Development, Fitness, and Aging. Her basic research program is motivated by solving infertility, reproductive aging, and understanding the effects of prenatal exposures to endocrine-disrupting chemicals and psychosocial stressors. She is involved in the intersection between science and society as deputy director of the UCSF P30 EaRTH Center (Environmental Research and Translation for Health).

Day Two - Track 4

2:30 pm

"Liquid Biopsy for Early Cancer Detection"

Kathryn A. Phillips, PhD, founded the UCSF Center for Translational and Policy Research on Precision Medicine over a decade ago. Kathryn is the Editor-in-Chief of Health Affairs Scholar; serves on the editorial boards for Health Affairs, Value in Health, JAMA Internal Medicine; is a member of the National Academy of Medicine Roundtable on Genomics; has served on the Board of Directors for GenomeCanada and as an advisor to FDA and CDC; and is a member of ICER's evidence review committee.



3:30 pm

"Liquid Biopsy for Minimal Residual Disease"



Laura J. van 't Veer, PhD, Professor of Laboratory Medicine, is the Program Leader of the UCSF Helen Diller Family Comprehensive Cancer Center Breast Oncology Program (BOP), Director of Applied Genomics with the UCSF Helen Diller Family Comprehensive Cancer Center, and UCSF-Site Principal Investigator of the Athena Breast Health Network. Dr. van 't Veer's research focuses on personalized medicine, to advance patient management based on knowledge of the genetic make-up of the tumor as well as the genetic make-up of the patient.

Day Three - Track 1

January 27

11:45 am



"Implementation of PGx at UCSF"

Bani Tamraz, PhD, has a primary interest in identification of genetic determinants of drug response through modern methods aimed at addressing pharmacogenomics research and translating that information into new diagnostics and treatment strategies at point-of-care.

3:30 pm

"Diversity, Equity, and Inclusion in Pharmacogenomics Implementation"

Kathy Giacomini, PhD, is a world-renowned pharmacologist with many years of research experience focused on transporter biology and pharmacogenomics. Her research is focused on influx transporters, particularly influx transporters involved in drug disposition and targeting. She has been recognized by many awards and is an elected member of the National Academy of Medicine. In 2023, she was appointed dean of the UCSF School of Pharmacy.



Day Three - Track 3

2:15 pm

"Identifying Relationships Between Disparate Data Sets to Monitor and Control Pathogen Outbreak" (Chair)



Charles Chiu, MD, PhD, is a professor at UCSF, Director of the UCSF-Abbott Viral Diagnostics and Discovery Center (VDDC), and Associate Director of the UCSF Clinical Microbiology Laboratory. Chiu currently leads a translational research laboratory focused on clinical metagenomic sequencing assay development for infectious diseases and genomic investigation and surveillance of emerging pathogens, including the SARS-CoV-2 coronavirus.

Day Three - Track 4

9:15 am

"Pattern Recognition and Content Quantification in Early-stage Disease Diagnosis" (Chair)



Dani Ushizima, PhD, is a computer scientist focused on Computer Vision and Machine Learning algorithms to characterize materials toward self-driving labs. Her research has impacted projects that depend on experimental data coming from instruments reliant on x-ray, electron, confocal, and other light-matter interactions. Currently, Ushizima leads research projects in the Center for Advanced Mathematics for Energy Related Applications (CAMERA). Jointly with Lea Grinberg's lab, she has developed a new technique for diagnosing Alzheimer's disease and supporting measurement of the efficacy of experimental treatments.

9:15 am

"Pattern Recognition and Content Quantification in Early-stage Disease Diagnosis"

Lea Tenenholz Grinberg, MD, PhD, is a neuropathologist specializing in brain aging, most notably, Alzheimer's diseases. The Grinberg Lab investigates factors influencing clinical expression of Alzheimer's pathology and other tauopathies to lead to better diagnostic tools and therapeutic targets that minimize clinical decline in AD by following up on Dr. Grinberg's initial discoveries of brainstem vulnerability in Alzheimer's disease. Her discoveries had changed the understanding on the basis of sleep disturbances in these diseases.



1:30 pm

"Al in Radiology & Pathology Applications (Clinical Research)"



Pratik Mukherjee, MD, PhD, is a board-certified clinical neuroradiologist whose research has centered on technical development and basic and clinical neuroscience applications of methods for mapping tissue microstructure, connectivity and function in the human brain. He has special experience in standardizing structural MRI, dMRI, and fMRI pulse sequences and scan protocols for large-scale multi-site projects and managing the resulting Big Data using cutting-edge informatics platforms and machine learning analytics, which is essential for the clinical translation of new imaging technology.

Day Three - Showcase

January 27

3:00 pm

"Pharmacogenomics (PGx)"



Mikhail Zastrozhin, MD, PhD, MPH, made significant and widely recognized contributions to the study of pharmacoepidemiology and the development of personalized medicine at the international level, including the study of the complex mutual influence of omics biomarkers as well as their influence on individual drug responses. With more than a decade of academic, clinical, and research experience in these fields, he has exceptional publications and citations record. His work has had a substantial and enduring impact on personalized medicine.

