

Weekly Colloquium, Spring 2019

## **Problems in the Biology of Complex Diseases**

**(CMM, MCB, GENE, IMB, PCOL 595H)**

Friday, 9-10.50, Keating/Bio5 103

Human complex diseases (CD) such as asthma, cancer, cardiovascular and neurodegenerative diseases, are major biomedical challenges, because they are common but difficult to decipher. The complexity of these diseases is reflected by their phenotypic heterogeneity and likely results from intricate interactions among genetic, environmental and developmental factors that modify disease susceptibility and severity.

Understanding complex diseases is urgent, because these conditions impose a burden on our society. Yet, this goal cannot be achieved by isolated research disciplines. Rather, it requires a novel paradigm that successfully integrates basic and clinical research across multiple fields and translates mechanisms into phenotypes and phenotypes into treatments. This novel paradigm provides the underpinning for this Colloquium.

The Colloquium features speakers who are nationally and internationally renowned for their work on environmental biology, immunological and clinical phenotyping, microbiota, developmental biology, epigenetics, genetic epidemiology, population genetics, functional genomics of human and animal models. The theme and vision of the Colloquium are unique in that *the discussion focuses particularly on the biological components shared by ostensibly distinct complex diseases (for instance, asthma, neurodegenerative and cardiovascular diseases)*. The underlying assumption, supported by much emerging evidence, is that these shared components are features that define the mechanistic architecture of complex diseases as a group. The goal of the Colloquium is to provide a platform that will catalyze broad, expert discussions on these foundational topics, thereby fostering the emergence of a new experimental and conceptual paradigm in complex disease biology.

<b>WHEN</b>	<b>WHERE</b>	<b>WHO</b>	<b>WHAT</b>
Jan 11	BIO5 103, 9-11 am	Donata Vercelli (UA)	Introduction and Overview
Jan 18	BIO5 103, 9-11 am	Xingnan Li (UA)	Introduction to Complex Disease Genetics
Jan 25	BIO5 103, 9-11 am	Debbie Meyers (UA)	Life after GWAS
Feb 1	BIO5 103, 9-11 am	Eugene Bleecker (UA)	Pharmacogenetics
Feb 8	BIO5 103, 9-11 am	<b>Carole Ober (U. Chicago)</b>	Integrating -omics
Feb 15	BIO5 103, 9-11 am	<b>Jianfeng Xu (NorthShore U.)</b>	Cancer Genetics
Feb 22	BIO5 103, 9-11 am	Linda Restifo (UA)	Spectrum of neurogenetic disease
Mar 1	<u>BIO5 247, 9-11 am+</u>	Jared Churko (UA)	iPSC models of human complex diseases
Mar 8		<i>Spring Break</i>	<i>no class</i>
Mar 15	BIO5 103, 9-11 am	Casey Romanoski (UA)	The genetics of gene expression
Mar 22	BIO5 103, 9-11 am	<b>Jake Lusis (UCLA)</b>	Network approaches to complex disease genetics
Mar 29	BIO5 103, 9-11 am	Darren Cusanovich (UA)	Single cell approaches to gene regulation studies
Apr 5	BIO5 103, 9-11 am	Raina Maier (UA)	The environmental microbiome
Apr 12	BIO5 103, 9-11 am	<b>Susan Lynch (UCSF)</b>	The microbiome in human disease
Apr 19	BIO5 103, 9-11 am	<b>Greg Caporaso (NAU)</b>	The dynamic human microbiome
Apr 26	BIO5 103, 9-11 am	Donata Vercelli (UA)	Wrap-up

+note change of location

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For further information, please contact Donata Vercelli, MD, Colloquium Organizer ([donata@email.arizona.edu](mailto:donata@email.arizona.edu))