CONTENTS

3 Letter from the Chair
4 Department News
5–6 New Hires and New Faculty
7–8 Grants and Awards
8–14 Publications
15–16 Recent Events
“Above all, don’t fear difficult moments. The best comes from them.”
-Rita Levi-Montalcini

Rita Levi-Montalcini won the 1986 Nobel Prize in Physiology or Medicine jointly with colleague Stanley Cohen for the discovery of nerve growth factor.

Need I say more? Dr. Levi-Montalcini, in her quote above, reminds us not to shrink from difficult moments but to use them to grow stronger, and in academics, that can be related to improving professional communication, redesigning experiments, reaching out for help or new collaborations to address roadblocks, or the sometimes long and daunting experience of writing grants repeatedly until one is successful. Winston Churchill’s words may be cliché, but they still ring true, “Never give up, never give up, never give up.” As you will see here in the BMG Fall 2021 Newsletter, despite the challenges that continue to linger from 2020, the department continues to grow and to contribute significantly to our fields. We have welcomed four brilliant new faculty members, several faculty members have received generous grants, and published their notable work. Please take time to welcome the new BMG members and congratulate those on their recent accomplishments. I also wish to thank those of you who were able to join us at the Fall Retreat and especially those who presented. We are a growing and thriving department and each of your individual successes contribute to this success.

Ali Shilatifard
Professor and Chairman

Below please find many of the great accomplishments of our BMG colleagues from the past 8 months.
We would like to extend our thanks and congratulations to the following BMG members who are moving on in their careers:

Ann Hogan, PhD - Foltz Lab
successfully defended her dissertation.

Andrea Piunti, Postdoctoral Fellow - Shilatifard Lab
has accepted a tenure track faculty position as an Assistant Professor at University of Chicago.
NEW HIRES

Eichner Lab

CAROLINE MCGUIRE
Research Technician

AMBRYN MEEHAN
Temp

Foltz Lab

TIM DON MAGNO LOPEZ
Research Technician

PRANATHI VADLAMANI
DGP Graduate Student

Shilatifard Lab

SHEETAL GANESAN
Research Technician

BEN HOWARD
Research Technician

ERIN MCLAUGHLIN
Administrative Assistant

JACOB ZEIDNER
Research Technician

Singer Lab

CARLA REYES FLORES
DGP Graduate Student

Yue Lab

ZOE CHEN
Intern (MS in Biostatistics Student)
NEW FACULTY HIRES

DR. LILLIAN EICHNER
Assistant Professor of Biochemistry and Molecular Genetics

DR. SHANA KELLEY
Professor of Biomedical Engineering and Chemistry

DR. RULI GAO
Assistant Professor of Biochemistry and Molecular Genetics

DR. SHANNON LAUBERTH
Associate Professor of Biochemistry and Molecular Genetics
GRANTS AND AWARDS

Issam Ben-Sahra, Assistant Professor - Ben-Sahra Lab
has been awarded a NIH R01 grant for the “Control of RNA methylation by growth signals through the mTORC1 pathway”

Nav Chandel, Professor of Medicine - Chandel Lab
recognized as a highly cited researcher in 2021 by Clarivate. Recognized for exceptional research influence, demonstrated by the production of multiple highly-cited papers that rank in the top 1% by citations for field and year in the Web of Science

Jay Daniels, G3 MD/PhD Student - Choi Lab
receives the Ruth L. Kirschstein National Research Service Award (NRSA) F30 grant

Dan Foltz, Associate Professor - Foltz Lab
has been awarded the R01GM143638 grant Titled: “Histone chaperone networks for new and evicted histones” Issam Ben-Sahra, Col

Pranathi Vadlamani, DGP Graduate Student - Foltz Lab
appointed to the Cell and Molecular Basis of Disease Training Grant

Elizabeth McNally, Professor of Medicine - McNally Lab
Elected to the National Academy of Medicine

Marc Mendillo, Assistant Professor - Mendillo Lab
has received the Department of Defense (DoD) Breast Cancer Research Program (BCRP) Breakthrough Award: “Leveraging Systematic Chemical-Genetic Profiling as a Path to Expand Precision Medicine in Breast Cancer”

David Amici, G2 MD/PhD Student - Mendillo Lab
has been awarded the NCI Ruth L. Kirchstein National Research service F30 grant

Luisa Morales-Nebreda, Postdoctoral Fellow (now Instructor of Medicine) - Mendillo Lab
has been awarded the K08 grant entitled “Mechanisms of regulatory T-cell mediated endothelial repair following viral pneumonia in aged hosts”

Ben Singer, Assistant Professor - Singer Lab
named the Lawrence Hicks Professor of Pulmonary Medicine

Ben Singer, Assistant Professor - Singer Lab
as Project Leader of Project 4, entitled “Epigenetic modifiers of regulatory T cell function following viral pneumonia has been awarded in their division’s new P01 award from NHLBI, entitled “Mechanisms of recovery from viral pneumonia”
Feng Yue, Associate Professor - Yue Lab

has been awarded the WashU-Northwestern Genomic Variation and Function Data and Administrative Coordinating Center (MPI with Dr. Ting Wang from Washington University), 2021
NATIONAL HUMAN GENOME RESEARCH INSTITUTE, $1,010,610

Feng Yue, Associate Professor - Yue Lab

will be serving as the co-chair for the Steering Committee of the IGVF consortium. In total, NIH awarded $185 million to 30 institutes to study how genetic variants can cause different types of human diseases

Feng Yue, Associate Professor - Yue Lab

has been appointed as a charter member for the NIH Genomics, Computational Biology and Technology Study Section for a three-years term

Feng Yue, Associate Professor - Yue Lab

Duane and Susan Burnham Professor of Molecular Medicine honored at Investiture Ceremony.

PUBLICATIONS

BEN-SAHRA LABORATORY


mTORC1 stimulates cell growth through SAM synthesis and m6A mRNA-dependent control of protein synthesis

This article is feature on the cover of the journal

Molecular Cell, 05/2021

KELLEHER LABORATORY

Aoi Y, Takahashi YH, Shah AP, Iwanaszko M, Rendleman EJ, Khan NH, Cho BK, Goo YA, Ganesan S, Kelleher NL, Shilatifard A

SPT5 stabilization of promoter-proximal RNA polymerase II
MENDILLO LABORATORY

Amici DR, Pinal-Fernandez I, Christopher-Stine L, Mammen AL, Mendillo ML

A network of core and subtype-specific gene expression programs in myositis

Acta Neuropathol, 11/2021

SHILATIFARD LABORATORY


A trivalent nucleosome interaction by PHP/BRWD2 is disrupted in neurodevelopmental disorders and cancer

Genes & Development, Accepted 11/2021


UBR7 acts as a histone chaperone for post-nucleosomal histone H3

The EMBO Journal, 11/2021


Integrator enforces the fidelity of transcriptional termination at protein-coding genes

Science Advances, 11/2021

Aoi Y, Takahashi YH, Shah AP, Iwanaszko M, Rendleman EJ, Khan NH, Cho BK, Goo YA, Ganesan S, Kelleher NL, Shilatifard A

SPT5 stabilization of promoter-proximal RNA polymerase II

Molecular Cell, 11/2021

Dietary palmitic acid promotes a prometastatic memory via Schwann cells

Nature, 11/2021


TOP2B Enzymatic Activity on Promoters and Introns Modulates Multiple Oncogenes in Human Gliomas

Clinical Cancer Research, 10/2021


A ChIP-exo screen of 887 Protein Capture Reagents Program transcription factor antibodies in human cells

Genome Research, 09/2021


Therapeutic targeting of transcriptional elongation in diffuse intrinsic pontine glioma

Neuro-Oncology, 08/2021

Wang J, Huang TY, Hou Y, Bartom E, Lu X, Shilatifard A, Yue F, Saratsis A

Epigenomic landscape and 3D genome structure in pediatric high-grade glioma

Science Advances, 06/2021
PUBLICATIONS, CONT.

**SHILATIFARD LABORATORY**


*Crosstalk between nonclassical monocytes and alveolar macrophages mediates transplant ischemia-reperfusion injury through classical monocyte recruitment*

*JCI Insight, 03/2021*  
[Read more](#)


*Epigenetic reprogramming of host and viral genes by Human Cytomegalovirus infection in Kasumi-3 myeloid progenitor cells at early times post-infection*

*J Virol, 03/2021*  
[Read more](#)

**SINGER LABORATORY**


*Age-related Differences in the Nasal Mucosal Immune Response to SARS-CoV-2*

*American Journal of Respiratory Cell and Molecular Biology, 11/2021*  
[Read more](#)


*Bacterial Superinfection Pneumonia in Patients Mechanically Ventilated for COVID-19 Pneumonia*

*American Journal of Respiratory and Critical Care Medicine, 10/2021*  
[Read more](#)

Zhao Z, Szczepanski AP, Tsuboyama N, Abdala-Valencia H, Goo YA, Singer BD, Bartom ET, Yue F, Wang L

*PAX9 Determines Epigenetic State Transition and Cell Fate in Cancer*

*Cancer Research, 09/2021*  
[Read more](#)
PUBLICATIONS, CONT.

SINGER LABORATORY


Technology dictates algorithms: recent developments in read alignment

Genome Biology, 08/2021

Budinger GRS, Misharin AV, Ridge KM, Singer BD, Wunderink RG

Distinctive features of severe SARS-CoV-2 pneumonia

Journal of Clinical Investigation, 07/2021

Chotirmall SH, Leither LM, Çoruh B, Chan LLY, Joudi AM, Brown SM, Singer BD, Seam N

Update in COVID-19 2020

American Journal of Respiratory and Critical Care Medicine, 06/2021


mTORC1 stimulates cell growth through SAM synthesis and m6A mRNA-dependent control of protein synthesis

This article is feature on the cover of the journal

Molecular Cell, 05/2021

WANG LABORATORY


TOP2B Enzymatic Activity on Promoters and Introns Modulates Multiple Oncogenes in Human Gliomas

Clinical Cancer Research, 10/2021
WANG LABORATORY

Zhao Z, Szczepanski AP, Tsuboyama N, Abdala-Valencia H, Goo YA, Singer BD, Bartom ET, Yue F, Wang L

PAX9 Determines Epigenetic State Transition and Cell Fate in Cancer

Cancer Research, 09/2021

Wang L, Birch NW, Zhao Z, Nestler CM, Kazmer A, Shilati A, Blake A, Ozark PA, Rendleman EJ, Zha D, Ryan CA, Morgan MA, Shilatifard A

Epigenetic targeted therapy of stabilized BAP1 in ASXL1 gain-of-function mutated leukemia

Nature Cancer, 05/2021

YUE LABORATORY

Song F, Xu J, Dixon J, Yue F

Analysis of Hi-C Data for Discovery of Structural Variations in Cancer

Print: Methods Molecular Biology, 2022
Online: 08/2021


Fast alignment and preprocessing of chromatin profiles with Chromap

Nature Communications, 11/2021

Zhao Z, Szczepanski AP, Tsuboyama N, Abdala-Valencia H, Goo YA, Singer BD, Bartom ET, Yue F, Wang L

PAX9 Determines Epigenetic State Transition and Cell Fate in Cancer

Cancer Research, 09/2021
YUE LABORATORY

Wang J, Huang TY, Hou Y, Bartom E, Lu X, Shilatifard A, Yue F, Saratsis A

Epigenomic landscape and 3D genome structure in pediatric high-grade glioma

Science Advances, 06/2021  
Read more


HP1α is a chromatin crosslinker that controls nuclear and mitotic chromosome mechanics

eLife, 06/2021  
Read more

Wang X, Xu J, Zhang B, Hou Y, Song F, Lyu H, Yue F

Genome-wide detection of enhancer-hijacking events from chromatin interaction data in rearranged genomes

Nature Methods, 06/2021  
Read more
BMG Retreat 2021