

Biochemistry and Molecular Genetics

Chair Newsletter

Fall 2019

M Northwestern Medicine
Feinberg School of Medicine

Fall 2019

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ON THE COVER. A close-up view of DNA methylation.
Cover designed and created by Nicole Ethen, MS.

LETTER FROM THE CHAIR

As Fall is here, we are entertained and inspired with nature's newly adorned and colorful exterior designs. Fall also arrives with the announcement of the annual Nobel prize recognizing the scientific achievements of extraordinary individuals who have worked extremely hard to understand and explain in one way or another the mechanisms which underlie our natural world. Congratulations to Dr. Bill Kaelin, winner of this year's Nobel Prize in Physiology or Medicine, along with Peter J. Ratcliffe and Gregg L. Semenza. I share with you [the link to Dr. Kaelin's interview](#) upon hearing of his selection as a Nobel laureate. I hope you find inspiration for your scientific journey in his wise words.

I would like to thank Marc Mendillo and Clara Peek for organizing this year's annual BMG retreat. It is always a great opportunity to gather as a department to share with one another our accomplishments, our current studies, and our future plans. These moments reassure us, assist us, and inspire us. I wish to thank each of you in attendance for your participation. Congratulations to Srivastava and Celeste Rosencrance for the best poster award!

Please take time to look at the grants, awards and publications listed below from each lab, and reach out to congratulate your peers on their accomplishments. I am very proud of the progress we have made as a department.

We welcome two additional laboratories into our department this year. Dr. Feng Yu, the Duane and Susan Burnham Professor of Molecular Medicine, and Director for the Center for Cancer Genetics/Epigenetics, and Dr. Lu Wang, Assistant Professor.

Ali Shilatifard

Professor and Chairman



***“There are no shortcuts
as far as I’m concerned.”***

-William G. Kaelin

2019 Nobel Laureate

This month Northwestern University has been celebrating [150 years of women at the University](#). We would like to take this opportunity to highlight the women faculty in our department. It is important to recognize our women faculty colleagues in BMG and celebrate the fantastic science they are doing at Northwestern Medicine.

Dr. Elizabeth Bartom

Assistant Professor of Biochemistry and Molecular Genetics



Dr. Beth McNally

Professor of Medicine (Cardiology) and Biochemistry and Molecular Genetics



Dr. Amanda Muhs Saratis

Assistant Professor of Neurological Surgery and Biochemistry and Molecular Genetics



Dr. Clara Bien Peek

Assistant Professor of Biochemistry and Molecular Genetics and Medicine (Endocrinology)



Dr. Liming Li

Associate Professor of Biochemistry and Molecular Genetics

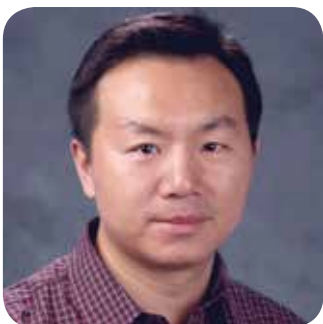


Dr. Jindan Yu

Professor of Medicine (Hematology and Oncology) and Biochemistry and Molecular Genetics

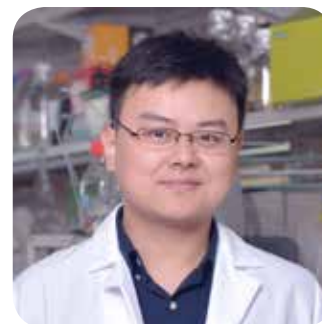


WELCOME NEW FACULTY



Dr. Feng Yue

Duane and Susan Burnham Professor of Molecular Medicine, Director for the Center for Cancer Genetics/Epigenetics



Dr. Lu Wang

Assistant Professor



TIFFANY GE

Egan Lab
DGP Graduate Student



QI YU

Egan Lab
Bioinformatics
Scientist



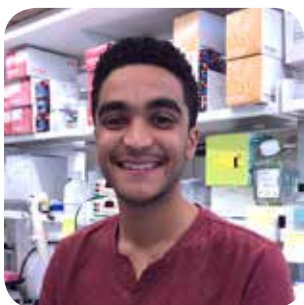
DAVID AMICI

Mendillo Lab
MSTP Student



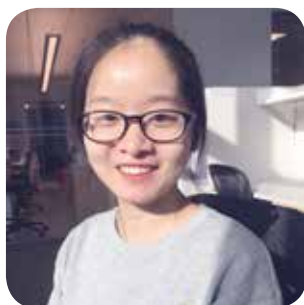
DAN ANSEL

Mendillo Lab
Research Technician



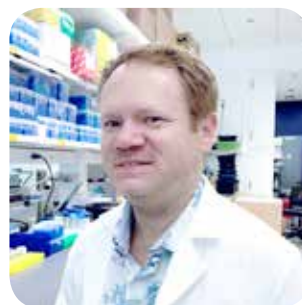
JASEN JACKSON

Mendillo Lab
Research Technician



CUIJUAN HAN

Ntziachristos Lab
Postdoctoral Fellow



ADAM LORCH

Ntziachristos Lab
Research Associate



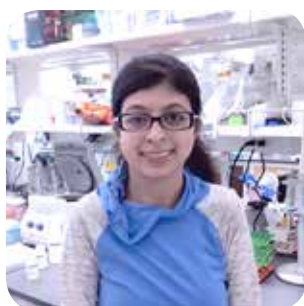
SHARON TAM

Peek Lab
DGP Graduate Student



**MARIAM
ARDEHALI**

Shilatifard Lab
Research Technician



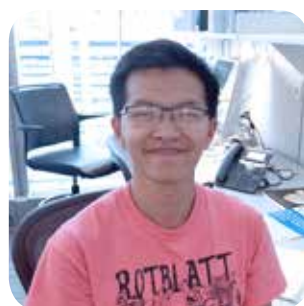
BENISH BAQAI

Shilatifard Lab
Research Technician



NICOLE ETHEN

Shilatifard Lab
Medical Illustrator/
Animator



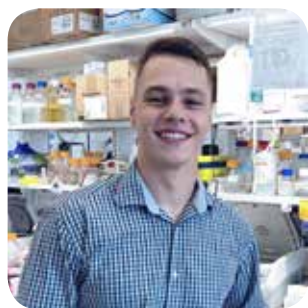
PHUOC HUYNH

Shilatifard Lab
Research Technician



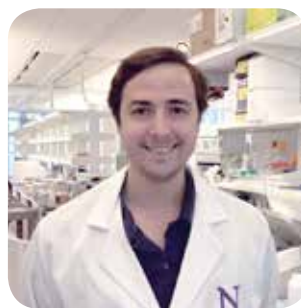
DAVID JOHNSON

Shilatifard Lab
Research Technician



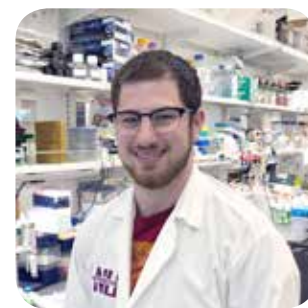
ALEX KAZMER

Shilatifard Lab
Research Technician



BRIAN SANDS

Shilatifard Lab
Research Technician



OLIVER VICKMAN

Shilatifard Lab
Research Technician



**MANUEL ACOSTA
TORRES**

Singer Lab
MD/PhD Grad Student



**AILEEN
SZCZEPANSKI**

Wang Lab
Research Technician



LOURDES BREA

Yu Lab
Graduate Student



VIRIYA KEO

Yu Lab
Graduate Student



EZINNE MONG

Yu Lab
Postdoctoral Fellow



FANG WANG

Yu Lab
Postdoctoral Fellow

Dr. Elizabeth Bartom - Bartom Lab

has been awarded the Driskill Graduate Program 2019 Dean's Teaching Award for her work teaching data science.

Dr. Elodie Villa - Ben-Sahra Lab

has been awarded a two-year postdoctoral fellowship from the Tuberous Sclerosis Alliance Foundation.

Tiffany Ge - Eagen Lab

was recently appointed to the CMBD Training Grant.

Blanca Gutierrez - Ntziachristos Lab

has received support from The Graduate School (TGS).

Dr. Leon Platanias - Platanias Labs

has been awarded an RO1 (R01NS113352) to support research on SLFN5: A Novel Therapeutic Target for Glioblastoma. This proposal will define mechanisms by which SLFN5, a member the unique group of Schlafen proteins, promotes glioblastoma malignancy by suppressing the Type I IFN signaling response.

Dr. Leon Platanias - Platanias Lab

has been awarded an RO1 (R01NS113425) to support the Development of Novel MNK Inhibitors for Treating Glioblastoma. This proposal will define mechanisms by which MNK kinases promote glioblastoma growth and develop novel agents to target them.

Kaixiang Cao - Shilatifard Lab

has been awarded an NIH K99/RO0 (HD094906) to study: Exploring Novel Regulatory Mechanisms Underlying Enhancer Activation and Cell Fate Transition

Dr. Andrea Piunti - Shilatifard Lab

has been awarded an NIH K99/RO0 (CA234434) to study: A Molecular Informed Therapy for Diffuse Intrinsic Pontine Gliomas (DIPG).

Dr. Ryan Rickels - Shilatifard Lab

accepted a postdoctoral fellowship at Duke University.

Christie Sze - Shilatifard Lab

has been awarded the eight annual Driskill Scholar Award.

Dr. Benjamin Singer - Singer Lab

has been awarded an R01 to study: Mechanisms of regulatory T cell-mediated recovery from severe influenza A virus infection.

Dr. Luisa Morales-Nebreda - Singer Lab

has been awarded an F32 to study: Determinants of age-related regulatory T cell function during influenza A virus-induced lung injury.

BMG RETREAT BEST POSTER WINNERS

Shashank Srivastava, PhD
Foltz Lab



Celeste Rosencrance
Eagen Lab

BARTOM LABORATORY



Zhao Z, Wang L, Bartom E, Marshall S, Rendleman E, Ryan C, Shilati A, Savas J, Chandel N, Shilatifard A.

β -Catenin/Tcf7/2-dependent transcriptional regulation of GLUT1 gene expression by Zic family proteins in colon cancer.

 [Read more](#)

Science Advances, 07/2019



Rollins MG, Jha S, Bartom ET, Walsh D.

RACK1 evolved species-specific multifunctionality in translational control through sequence plasticity within a loop domain.

 [Read more](#)

Journal of Cell Science, 06/2019



Qi J, Esfahani DR, Huang T, Ozark P, Bartom E, Hashizume R, Bonner ER, An S, Horbinski CM, James CD, Saratsis AM.

Tenascin-C expression contributes to pediatric brainstem glioma tumor phenotype and represents a novel biomarker of disease.

 [Read more](#)

Acta Neuropathologica Communications, 05/2019



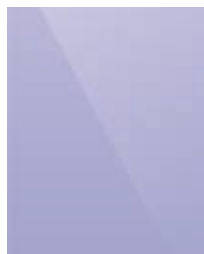
Pooter, RF D, Dias S, Chowdhury M, Bartom ET, Okoreeh MK, Sigvardsson M, Kee BL.

Cutting edge: Lymphomyeloid-primed progenitor cell fates are controlled by the transcription factor TAL1.

 [Read more](#)

Journal of Immunology, 05/2019

FREEMAN LABORATORY



Smith KP, Focia PJ, Chakravarthy S, Landahl EC, Klosowiak JL, Rice SE, Freymann DM.

Structural assembly of the human Miro1/2 GTPases based on the crystal structure of the N-terminal GTPase domain.

 [Read more](#)

Preprint, 08/2019

NTZIACHRISTOS LABORATORY



Rawat R, Starczynowski DT, Ntziachristos P.

Nuclear deubiquitination in the spotlight: the multifaceted nature of USP7 biology in disease.

 [Read more](#)

Current Opinions in Cell Biology, 06/2019

SHILATIFARD LABORATORY



Zhao Z, Wang L, Bartom E, Marshall S, Rendleman E, Ryan C, Shilati A, Savas J, Chandel N, Shilatifard A.

β -Catenin/Tcf7l2-dependent transcriptional regulation of GLUT1 gene expression by Zic family proteins in colon cancer.


 [Read more](#)

Science Advances, 07/2019



Piunti A, Smith ER, Morgan MAJ, Ugarenko M, Khaltyan N, Helmin KA, Ryan CA, Murray DC, Rickels RA, Yilmaz BD, Rendleman EJ, Savas JN, Singer BD, Bulun SE, Shilatifard A.

CATACOMB: An endogenous inducible gene that antagonizes H3K27 methylation activity of Polycomb repressive complex 2 via an H3K27M-like mechanism.

 [Read more](#)  [Watch Video](#)

Science Advances, 07/2019

SINGER LABORATORY

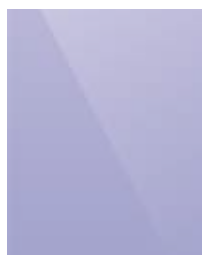


Reyfan PA, Walter JM, Joshi N, Anekalla KR, McQuattie-Pimentel AC, Chiu S, Fernandez R, Akbarpour M, Chen CI, Ren Z, Verma R, Abdala-Valencia H, Nam K, Chi M, Han S, Gonzalez-Gonzalez FJ, Soberanes S, Watanabe S, Williams KJN, Flozak AS, Nicholson TT, Morgan VK, Winter DR, Hinchcliff M, Hrusch CL, Guzy RD, Bonham CA, Sperling AI, Bag R, Hamanaka RB, Mutlu GM, Yeldandi AV, Marshall SA, Shilatifard A, Amaral LAN, Perlman H, Sznajder JI, Argento AC, Gillespie CT, Dematte J, Jain M, Singer BD, Ridge KM, Lam AP, Bharat A, Bhorade SM, Gottardi CJ, Budinger GRS, Misharin AV

Single-cell transcriptomic analysis of human lung provides insights into the pathobiology of pulmonary fibrosis.

 [Read more](#)

American Journal of Respiratory and Critical Care Medicine, 06/2019



Qi C, Hountras P, Pickens CO, Walter JM, Kruser JM, Singer BD, Seed P, Green SJ, Wunderink RG
Detection of respiratory pathogens in clinical samples using metagenomic shot-gun sequencing.

 [Read more](#)

Journal of Medical Microbiology, 07/2019



Piunti A, Smith ER, Morgan MAJ, Ugarenko M, Khaltyan N, Helmin KA, Ryan CA, Murray DC, Rickels RA, Yilmaz BD, Rendleman EJ, Savas JN, Singer BD, Bulun SE, Shilatifard A.

CATACOMB: An endogenous inducible gene that antagonizes H3K27 methylation activity of Polycomb repressive complex 2 via an H3K27M-like mechanism.

 [Read more](#)

 [Watch Video](#)

Science Advances, 07/2019



Singer BD and Chandel NS

Immunometabolism of pro-repair cells.

 [Read more](#)

Journal of Clinical Investigation, 05/2019



Tighe RM, Redente EF, Yu YR, Herold S, Sperling AI, Curtis JL, Duggan R, Swaminathan S, Nakano H, Zacharias WJ, Janssen WJ, Freeman CM, Brinkman RR, Singer BD, Jakubzick CV, Misharin AV on behalf of the ATS Assembly on Allergy Immunology and Inflammation

Improving the quality and reproducibility of flow cytometry in the lung: an official American Thoracic Society workshop report.

 [Read more](#)

American Journal of Respiratory Cell and Molecular Biology, 08/2019



Singer BD.

A practical guide to the measurement and analysis of DNA methylation.

 [Read more](#)

American Journal of Respiratory Cell and Molecular Biology, 10/2019

YU LABORATORY



Xu B, Song B, Lu X, Kim J, Hu M, Zhao JC, Yu J.

Altered chromatin recruitment by FOXA1 mutations promotes androgen independence and prostate cancer progression.

 [Read more](#)

Cell Research, 09/2019

UPCOMING EVENTS

NOVEMBER 15, 2019

2nd Annual Simpson Querrey Center for
Epigenetics Symposium
“Epigenetics, Metabolism, and Human Disease”

**Simpson Querrey Center for
Epigenetics**
303 East Superior Street
Simpson Querrey, 7th Floor
Chicago, IL 60611

For additional information, please contact our office at:
sqe@northwestern.edu or **312-503-5217**

