

# Biochemistry and Molecular Genetics

CHAIR NEWSLETTER

\\ SUMMER 2020

# Summer 2020

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Cover design by Nicole Ethen, MS.



## LETTER FROM THE CHAIR

*“Hibernating so to say is a good time to reflect as well (as) a good time to ask yourself important questions and to personally evaluate your goals, check your own scientific progress, and to refresh your plans to implement them.”*

-Ali Shilatifard  
Winter Newsletter 2020



Little did I know when I wrote the BMG 2020 Winter newsletter sent out on the cusp of March, that we would be hibernating for at least 5 months! I hope that you and your families and lab members have all remained healthy. 2020 to date has presented itself as a time to try to see clearly. We must address not only our personal priorities of family and work life in the light of COVID-19, but also just as challenging, we must address systemic racism and social injustices. All of these topics should be approached with open minds and a commitment to making a difference through hard work, kind actions and fairness. I am always reminded by the inspiring words that I would see on my walk past the St. Louis Cathedral which said, “If you want peace, work for justice.”

I would like to especially thank everyone who came in during the quarantine period to keep the critical functions of the department and our

labs moving forward and to thank our colleagues for their contributions in setting up the department allowing us all to get back to work. Unfortunately, many of our in-person activities for this fall including our seminar series and the BMG departmental retreat have been cancelled, but please do participate in the departmental virtual seminars to remain engaged in the departmental discussions and ongoing research. There is a plethora of great news and new discoveries from our department included in this newsletter. Keep up the great work! The best is yet to be for BMG.

**Ali Shilatifard**  
Professor and Chairman

## GRANTS AND AWARDS

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**Amanda Saratsis**, *Assistant Professor* - Saratsis Lab  
is a recipient of the 2019 Hartwell Individual Biomedical Research Award.

**Elodie Villa**, *Postdoctoral Fellow* - Ben-Sahra Lab  
has been awarded the Servier Institute Prize.

**Clara Peek**, *Assistant Professor* - Peek Lab  
has been awarded an R01 from the NIDDK (1R01DK123358) to start July 2020.

**Panos Ntziachristos**, *Assistant Professor* - Ntziachristos Lab  
has been awarded an NIH-NCI R01 (1R01CA248770-01) for “Therapeutic targeting of demethylation-deubiquitination axis in acute leukemia.”

**Benjamin Singer**, *Assistant Professor* - Singer Lab  
received the Carol Basbaum Award for outstanding scientific achievement, mentorship, and leadership from the American Thoracic Society.

## DEPARTMENTAL NEWS

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∞ We would like to extend our thanks and congratulations to the following BMG members who are moving on to new positions in their careers:




**Christie Sze**, *Graduate Student* - Shilatifard Lab  
has graduated and is now a Senior Consultant at Guidehouse.



**Kai Cao**, *Postdoctoral Fellow* - Shilatifard Lab  
has accepted a faculty position at Case Western Reserve University.



**Alex Willis**, *Research Technician* - Foltz Lab  
is joining the Driskill Graduate Program at Northwestern.

∞ Take a moment to read this story about Dr. Amanda Saratsis’s international collaborations with clinicians and researchers that aim to advance research and techniques for treating pediatric gliomas.  [Read more](#)



## NEW BMG MEMBERS

### Shilatifard Lab



**NABIHA KHAN**  
Research Technician



**SIDDHANT SHARMA**  
Research Technician



**KATE JUNKINS**  
Summer Research  
Intern

### Foltz/Kelleher Lab



**ALEX LEE**  
Graduate Student

### Eagen Lab



**CELESTE  
ROSENCRANCE**  
Graduate Student



**JINGXIAO ZHANG**  
Bioinformatics  
Scientist

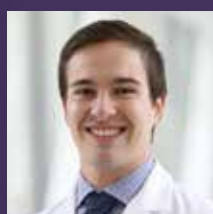


**GRANT  
ZIMMERMAN**  
Research Technician

### Singer Lab



**TONY JOUDI, MD**  
Postdoctoral Fellow



**MANUEL TORRES  
ACOSTA**  
Graduate Student

## PUBLICATIONS

### BEN-SAHRA LABORATORY



Ali ES\*, Sahu U\*, Villa E, O'Hara BP, Gao P, Beaudet C, Wood AW, Asara JM, Ben-Sahra I

\*These authors contributed equally

**ERK2 Phosphorylates PFAS to Mediate Posttranslational Control of *De Novo* Purine Synthesis**

*Molecular Cell*, 06/2020

 [Read more](#)

### CHANDEL LABORATORY



Martínez-Reyes I, Cardona LR, Kong H, Vasan K, McElroy GS, Werner M, Kihshen H, Reczek CR, Weinberg SE, Gao P, Steinert EM, Piseaux R, Budinger GRS, Chandel NS

**Mitochondrial ubiquinol oxidation is necessary for tumour growth**

*Nature*, 07/2020

 [Read more](#)



McElroy GS, Reczek CR, Reyfman PA, Mithal DS, Horbinski CM, Chandel NS

**NAD<sup>+</sup> Regeneration Rescues Lifespan, but Not Ataxia, in a Mouse Model of Brain Mitochondrial Complex I Dysfunction**

*Cell Metabolism*, 06/2020

 [Read more](#)



Vasan K, Werner M, Chandel NS

**Mitochondrial Metabolism as a Target for Cancer Therapy**

*Cell Metabolism*, 07/2020

 [Read more](#)

### EAGEN LABORATORY



Rosencrance CD, Ammouri HA, Yu Q, Ge T, Rendleman EJ, Marshal SA, Eagen KP

**Chromatin Hyperacetylation Impacts Chromosome Folding by Forming a Nuclear Subcompartment**

*Molecular Cell*, 04/2020

 [Read more](#)

## NTZIACHRISTOS LABORATORY



Fang C, Rao S, Crispino JD, Ntziachristos P

**Determinants and role of chromatin organization in acute leukemia**

*Leukemia*, 07/2020

 [Read more](#)



Zhou Y, Han C, Wang E, Lorch AH, Serafin V, Cho BK, Gutierrez-Diaz BT, Calvo J, Fang C, Khodadadi-Jamayran A, Tabaglio T, Marier C, Kuchmiy A, Sun L, Yacu G, Filip SK, Jin Q, Takahashi Y, Amici DR, Rendleman EJ, Rawat R, Bresolin S, Paganin M, Zhang C, Li H, Kandela I, Politanska Y, Abdala-Valencia H, Mendillo ML, Zhu P, Palhais B, Van Vlierberghe P, Taghon T, Aifantis I, Goo YA, Guccione E, Heguy A, Tsigos A, Wee KB, Mishra RK, Pflumio F, Accordi B, Basso G, Ntziachristos P

**Posttranslational regulation of the exon skipping machinery controls aberrant splicing in leukemia**

*Cancer Discovery*, 05/2020

 [Read more](#)



Kloetgen A, Thandapani P, Ntziachristos P, Ghebrechristos Y, Nomikou S, Lazaris C, Chen X, Hu H, Bakogianni S, Wang J, Yi Fu, Boccalatte F, Zhong H, Paietta E, Trimarchi T, Zhu Y, Van Vlierberghe P, Inghirami GG, Lionnet T, Aifantis I, Tsigos A

**Three-dimensional chromatin landscapes in T cell acute lymphoblastic leukemia**

◀◀ This article is featured on the cover of the journal

*Nature Genetics*, 04/2020

 [Read more](#)

## PEEK LABORATORY



Peek CB

**Metabolic Implications of Circadian-HIF Crosstalk**

*Trends in Endocrinology and Metabolism*, 06/2020

 [Read more](#)

## SHILATIFARD LABORATORY



Aoi Y, Smith ER, Shah AP, Rendleman EJ, Marshall SA, Woodfin AR, Chen FX, Shiekhattar R, Shilatifard A

**NELF Regulates a Promoter-Proximal Step Distinct from RNA Pol II Pause-Release**

*Molecular Cell*, 04/2020

 [Read more](#)

## SHILATIFARD LABORATORY



Douillet D, Sze CC, Ryan C, Piunti A, Shah AP, Ugarenko M, Marshall SA, Rendleman EJ, Zha D, Helmin KA, Zhao Z, Cao K, Morgan MA, Singer BD, Bartom ET, Smith ER, Shilatifard A

**Uncoupling histone H3K4 trimethylation from developmental gene expression via an equilibrium of COMPASS, Polycomb and DNA methylation**

◀ This article is featured on the cover of the journal

*Nature Genetics*, 06/2020

 [Read more](#)

## SINGER LABORATORY



McGrath-Morrow SA, Ndeh R, Helmin KA, Khuder B, Rothblum-Oviatt C, Collaco JM, Wright J, Reyfman PA, Lederman HM, Singer BD

**DNA methylation and gene expression signatures are associated with ataxia-telangiectasia phenotype**

*Scientific Reports*, 05/2020

 [Read more](#)



Douillet D, Sze CC, Ryan C, Piunti A, Shah AP, Ugarenko M, Marshall SA, Rendleman EJ, Zha D, Helmin KA, Zhao Z, Cao K, Morgan MA, Singer BD, Bartom ET, Smith ER, Shilatifard A

**Uncoupling histone H3K4 trimethylation from developmental gene expression via an equilibrium of COMPASS, Polycomb and DNA methylation**

◀ This article is featured on the cover of the journal

*Nature Genetics*, 06/2020

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Prigge AD, Ma R, Coates BM, Singer BD, Ridge KM

**Age-dependent differences in T cell responses to influenza A virus**

*American Journal of Respiratory Cell and Molecular Biology*, 07/2020

 [Read more](#)

## WANG LABORATORY



Szczepanski AP, Zhao Z, Sosnowski T, Goo YA, Bartom ET, Wang L

**ASXL3 bridges BRD4 to BAP1 complex and governs enhancer activity in small cell lung cancer**

*Genome Medicine*, 07/2020

 [Read more](#)




YUE LABORATORY



Salameh TJ, Wang X, Song F, Zhang B, Wright SM, Khunsriraksakul C, Yue F


**A supervised learning framework for chromatin loop detection in genome-wide contact maps.**

*Nature Communications*, 07/2020  [Read more](#)



Zhang J, Lee D, Dhiman V, Jiang P, Xu J, McGillivray P, Yang H, Liu J, Meyerson W, Clarke D, Gu M, Li S, Lou S, Xu J, Lochovsky L, Ung M, Ma L, Yu S, Cao Q, Harmanci A, Yan KK, Sethi A, Gürsoy G, Schoenberg MR, Rozowsky J, Warrell J, Emani P, Yang YT, Galeev T, Kong X, Liu S, Li X, Krishnan J, Feng Y, Rivera-Mulia JC, Adrian J, Broach JR, Bolt M, Moran J, Fitzgerald D, Dileep V, Liu T, Mei S, Sasaki T, Trevilla-Garcia C, Wang S, Wang Y, Zang C, Wang D, Klein RJ, Snyder M, Gilbert DM, Yip K, Cheng C, Yue F, Liu XS, White KP, Gerstein M

**An integrative ENCODE resource for cancer genomics**

*Nature Communications*, 07/2020  [Read more](#)



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