

# Welcome to the Department of Biochemistry and Molecular Biophysics

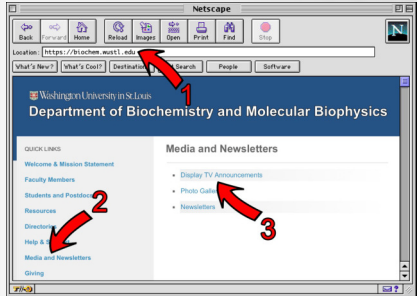


Washington University in St. Louis  
School of Medicine

<https://biochem.wustl.edu>

# View these slides online!

- 1) Go to **biochem.wustl.edu**
- 2) Click **Media and Newsletters**
- 3) Click **Display TV Announcements**



# April Publication



Jie Sun, **Weikai Li**, & Michael L. Gross

***Advances in mass spectrometry-based footprinting of membrane proteins***

Proteomics. 2022 Apr;22(8):e2100222. doi: 10.1002/pmic.202100222. (2022)

View online!  
[biochem.wustl.edu](https://biochem.wustl.edu)

**Department of Biochemistry and Molecular Biophysics**

 Washington University in St. Louis • School of Medicine

# WashU Research Storage



## Running low on storage?

WashU IT **Research Storage** is available to all **Faculty** members.

The first **5TB** of storage are provided at *no-cost* to you!

**NOW FASTER**

Visit for more information:  
**[BMBSupport.wustl.edu](http://BMBSupport.wustl.edu)**

**Department of Biochemistry and Molecular Biophysics**

 Washington University in St. Louis • School of Medicine

# Congratulations to Dr. Holehouse

March 16<sup>th</sup>, 2022 – **Alex Holehouse, PhD**, Assistant Professor of Biochemistry and Molecular Biophysics along with Dolf Weijer, PhD, Associate Professor in Laboratory of Biochemistry from Wageningen University and Research, and Hyun Lee, PhD, Assistant Professor of Biochemistry from University of Toronto, received a new three-year grant award from Human Frontier Science Program for their research entitled ***"Molecular determinants of evolutionary conservation in disordered protein regions"***.



Department of Biochemistry and Molecular Biophysics

 Washington University in St. Louis • School of Medicine

# March Publication



**Upasana L. Mallimadugula & Eric A. Galburt**

***Parallel path mechanisms lead to nonmonotonic force-velocity curves and an optimum load for molecular motor function***

Phys Rev E. 2022 Mar;105(3-1):034405. doi: 10.1103/PhysRevE.105.034405. (2022)

View online!  
[biochem.wustl.edu](https://biochem.wustl.edu)

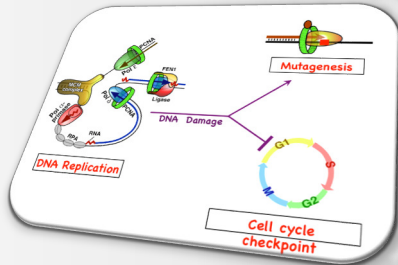
**Department of Biochemistry and Molecular Biophysics**

 Washington University in St. Louis • School of Medicine

# Spotlight on Research

The **Burgers Lab** studies DNA replication and DNA damage response in eukaryotic cells. Using yeast as a model organism, the lab integrates the biochemical analysis of DNA-protein interactions in purified model systems with the genetic analysis of targeted yeast mutants. Specific areas of interest are lagging strand DNA replication and Okazaki fragment maturation, damage induced mutagenesis, and DNA damage cell cycle checkpoints.

Right: DNA replication fork and Okazaki fragment maturation



See more research:  
[biochem.wustl.edu/spotlight](http://biochem.wustl.edu/spotlight)

Department of Biochemistry and Molecular Biophysics

Washington University in St. Louis • School of Medicine

# COVID-19



**For the latest updates on coronavirus (COVID-19), please visit here:**

**[coronavirus.wustl.edu](https://coronavirus.wustl.edu)**

**Don't forget to self-screen before coming into work!**

**[screening.wustl.edu](https://screening.wustl.edu)**

**Department of Biochemistry and Molecular Biophysics**



Washington University in St. Louis • School of Medicine





## The Modern Counseling Solution

Take the first step towards leading a healthy, happy life anywhere, anytime, any place.

NexGen is a FREE and CONFIDENTIAL benefit provided by your university to help you overcome your personal challenges and emotional stressors. Now, you can start counseling requests via text message, live chat, or by using the NexGenEAP mobile app.

Counseling services include:



- Immediate Connection to a Mental Health Professional



- Mental health counseling for issues like depression, anxiety, grief, stress, and work related challenges



- Up to 6 sessions of counseling for each unique issue, every year
- Access to free in-person, telephonic, or video sessions with a counselor based on the challenge you are experiencing

Get Connected with a Mental Health Professional  
in more ways than ever before



Text or Call  
1.800.327.2255



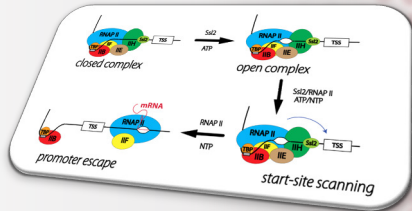
Live Chat Online at  
[www.nexgeneap.com](http://www.nexgeneap.com)



Use the NexGenEAP  
Mobile App

# Spotlight on Research

The **Galburt Lab** strives to understand the physical mechanisms of transcription initiation and other important DNA-protein interactions. More specifically, we use a variety of single-molecule and ensemble biophysical techniques including both optical and magnetic tweezers and fluorescent microscopy to investigate how the assembly of initiation complexes on gene promoters leads to DNA unwinding and transcription. Our work is currently focused on the mechanisms of basal transcription initiation in Eukaryotes and on factor-regulated transcription in *Mycobacterium tuberculosis*.



See more research:  
[biochem.wustl.edu/spotlight](http://biochem.wustl.edu/spotlight)

Department of Biochemistry and Molecular Biophysics

Washington University in St. Louis • School of Medicine

# BMB Support

**Computer not working?**

**Not getting email on your smartphone?**

**We are here to help with the many computing issues that may pop up in your day-to-day operations.**



**Support email: [support@biochem.wustl.edu](mailto:support@biochem.wustl.edu)**

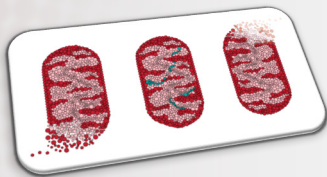
**Support website: [BMBSupport.wustl.edu](http://BMBSupport.wustl.edu)**

**Just send us an email or visit our website and click on \*Request Support\* to get help!**

**Department of Biochemistry and Molecular Biophysics**

 Washington University in St. Louis • School of Medicine

# Spotlight on Research



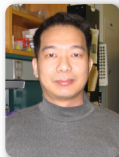
The **Niemi Lab** investigates how mitochondria are built, regulated, and maintained across physiological contexts. We blend biochemistry, systems biology, and physiology to understand mechanisms of mitochondrial regulation and how they influence metabolism and organellar function. Using insights gained from our molecular studies, we aim to understand how mitochondrial dysfunction contributes to mammalian pathophysiology, with the long-term goal of translating our discoveries into new therapeutic options to restore mitochondrial function in human disease.

See more research:  
[biochem.wustl.edu/spotlight](https://biochem.wustl.edu/spotlight)

**Department of Biochemistry and Molecular Biophysics**

 Washington University in St. Louis • School of Medicine

# March Publication



**Alexander G. Kozlov**, Xian Cheng, Hongshan Zhang, Min Kyung Shinn, **Elizabeth Weiland**, **Binh Nguyen**, Irina A. Shkel, Emily Zytkeiwicz, Ilya J. Finkelstein, M. Thomas Record Jr., & **Timothy M. Lohman**

***How Glutamate Promotes Liquid-liquid Phase Separation and DNA Binding Cooperativity of E. coli SSB Protein***

J Mol Biol. 2022 Mar 26;434(9):167562. doi: 10.1016/j.jmb.2022.167562. (2022)

View online!  
[biochem.wustl.edu](https://biochem.wustl.edu)

**Department of Biochemistry and Molecular Biophysics**  
Washington University in St. Louis • School of Medicine

# Back Up Your Stuff!

## Are your files backed up?

If you are not keeping your files on a network file server, running a local backup client, or utilizing cloud storage, then it is possible that your files are **not** backed up!

**Want to make sure your data is backed up?  
We provide several backup solutions.**

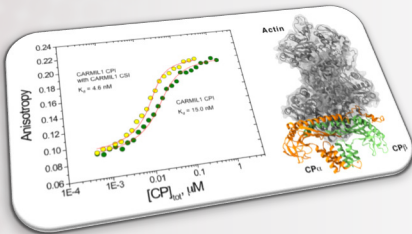
**[BMBSupport.wustl.edu/backups](http://BMBSupport.wustl.edu/backups)**



**Department of Biochemistry and Molecular Biophysics**

 Washington University in St. Louis • School of Medicine

# Spotlight on Research



The **Cooper Lab** is interested in how the actin filaments in cells assemble and how that assembly controls cell shape and movement. One focus is an actin-binding protein called "capping protein," which caps one end of the actin filament. Capping protein is in turn regulated by intrinsically disordered regions of the CARMIL family of proteins, which exhibit positive linkage in their binding interactions.

See more research:  
[biochem.wustl.edu/spotlight](http://biochem.wustl.edu/spotlight)

Department of Biochemistry and Molecular Biophysics

 Washington University in St. Louis • School of Medicine



**Are you paid **monthly**?**

**Please remember that your **time report** is  
**due by the 5th of each month.****



# Congratulations to Dr. Galburt



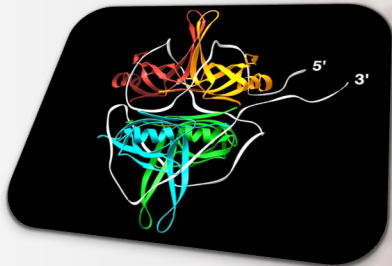
March 2<sup>nd</sup>, 2022 – **Eric Galburt, PhD**, Associate Professor in Biochemistry and Molecular Biophysics, received a new five-year MIRA grant award from National Institute of General Medical Sciences for his research entitled ***"Molecular Mechanisms of Transcription Initiation and DNA Repair"***.

**Department of Biochemistry and Molecular Biophysics**

 Washington University in St. Louis • School of Medicine


# Spotlight on Research

Research in the **Lohman Lab** focuses on obtaining a molecular understanding of the mechanisms of protein-nucleic acid interactions involved in DNA metabolism, in particular, DNA motor proteins (helicases/translocases) and single stranded DNA binding proteins. Thermodynamic, kinetic, structural and single molecule approaches are used to probe these interactions at the molecular level.



See more research:  
[biochem.wustl.edu/spotlight](http://biochem.wustl.edu/spotlight)

**Department of Biochemistry and Molecular Biophysics**

 Washington University in St. Louis • School of Medicine

# HAVING ISSUES AT WORK? WE'RE HERE TO HELP.

Contact any of the following for help

Jessica Kennedy – Title IX Director, [jwkennedy@wustl.edu](mailto:jwkennedy@wustl.edu), 314-935-3118

Jessica Kuchta-Miller – Staff/Postdoc/Graduate Student Ombuds, 314-379-8110

Karen O'Malley – Medical Student Ombuds, 314-660-2089

Jim Fehr – Faculty Ombuds, 314-660-2089

# BMB ID Self-Service



Your **BMB ID** is used for network files shares, remote VPN access, and BMB WiFi.

You can now change your BMB ID password, reset it if you have forgotten it, or even recover your BMB ID if you don't remember what it is!

Just visit:

**[bmbid.wustl.edu](http://bmbid.wustl.edu)**

**Department of Biochemistry and Molecular Biophysics**

 Washington University in St. Louis • School of Medicine

**Congratulations to Anna Damato for being selected as the  
2022 Ceil M. DeGutis Prize Fellow**



Anna Damato is a fifth-year PhD candidate in Neuroscience in the Department of Biology. Anna was nominated for this award by her thesis mentor, Dr. Erik Herzog, in whose lab she is connecting the bench to the bedside by investigating mechanisms of glioblastoma brain tumor circadian rhythms and how they impact the efficacy of chemotherapy. Anna uses real-time bioluminescence reporters of circadian gene expression to analyze the effects of timed treatment, with the goal of maximizing anti-tumor effects and minimizing side effects of chemotherapy in treating an otherwise dismal disease.

Visit [biochem.wustl.edu/news](https://biochem.wustl.edu/news) to read more!

# Congratulations

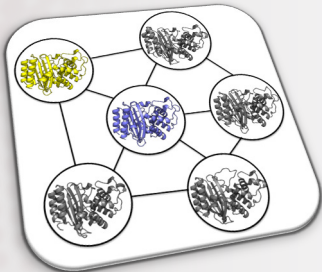


April 22<sup>nd</sup>, 2022 – **Andrea Soranno, PhD**, Assistant Professor of Biochemistry and Molecular Biophysics along with **Kathleen Hall, PhD**, Professor of Biochemistry and Molecular Biophysics and **Alex Holehouse, PhD**, Assistant Professor of Biochemistry and Molecular Biophysics have received a new five-year grant from National Institute of Allergy and Infectious Diseases for their research entitled "***A multipronged investigation of SARS-CoV-2 genome packaging***"

Department of Biochemistry and Molecular Biophysics

 Washington University in St. Louis • School of Medicine

# Spotlight on Research



The **Bowman Lab** seeks to understand the distribution of different structures a protein adopts and how this ensemble determines a protein's function. Examples of ongoing research projects include 1) understanding how mutations in the enzyme beta-lactamase change its specificity without changing the protein's crystal structure, 2) designing allosteric drugs, and 3) developing algorithms for quickly building models of the different structures a protein adopts.

See more research:

[biochem.wustl.edu/spotlight](http://biochem.wustl.edu/spotlight)

**Department of Biochemistry and Molecular Biophysics**

 Washington University in St. Louis • School of Medicine

# Holiday Schedule

Holiday	Day Observed	Date Observed at WashU
Martin Luther King Jr. Day	Monday	January 17 <sup>th</sup> , 2022
<b>Memorial Day</b>	<b>Monday</b>	<b>May 30<sup>th</sup>, 2022</b>
Independence Day	Monday	July 4 <sup>th</sup> , 2022
Labor Day	Monday	September 5 <sup>th</sup> , 2022
Thanksgiving Day	Thursday	November 24 <sup>th</sup> , 2022
Day after Thanksgiving	Friday	November 25 <sup>th</sup> , 2022





# COVID-19



**For the latest updates on coronavirus (COVID-19), please visit here:**

**[coronavirus.wustl.edu](https://coronavirus.wustl.edu)**

**Don't forget to self-screen before coming into work!**

**[screening.wustl.edu](https://screening.wustl.edu)**

**Department of Biochemistry and Molecular Biophysics**



Washington University in St. Louis • School of Medicine

# Congratulations to Dr. Janetka

March 1<sup>st</sup>, 2022 – **Jim Janetka, PhD**, Professor in Biochemistry and Molecular Biophysics and David Sibley, Professor in Molecular Microbiology received a new five-year grant R01 award from the National Institute of Allergy and Infectious Diseases (NIAID) of the NIH totaling 3.9 million dollars for their research entitled "***Optimizing CDPK1 inhibitors for chronic toxoplasmosis***".



**Department of Biochemistry and Molecular Biophysics**

 Washington University in St. Louis • School of Medicine

# BMB SCIENCE FRIDAYS

a forum for new data, new ideas  
and works in progress

**Science Fridays and Happy Hour:  
EVERY FRIDAY, starting at 4PM.**



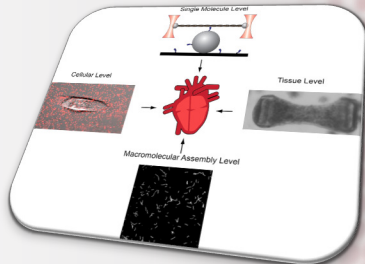
**Department of Biochemistry and Molecular Biophysics**



Washington University in St. Louis • School of Medicine

# Spotlight on Research

The **Greenberg Lab** focuses on how cytoskeletal motors function in both health and disease. Currently, the lab is studying mutations that cause familial cardiomyopathies, the leading cause of sudden cardiac death in people under 30 years old. The lab uses an array of biochemical, biophysical, and cell biological techniques to decipher how these mutations affect heart contraction from the level of single molecules to the level of engineered tissues. Insights into the disease pathogenesis will guide efforts to develop novel therapies.



See more research:  
[biochem.wustl.edu/spotlight](http://biochem.wustl.edu/spotlight)

**Department of Biochemistry and Molecular Biophysics**

 Washington University in St. Louis • School of Medicine

# Don't Forget!



**Please keep your lab  
locked if no one is in  
there when you leave.**

**Don't forget your  
keys!**

**Please remember to  
take OFF your gloves  
when leaving the lab.**

