

# Welcome to the Department of Biochemistry and Molecular Biophysics

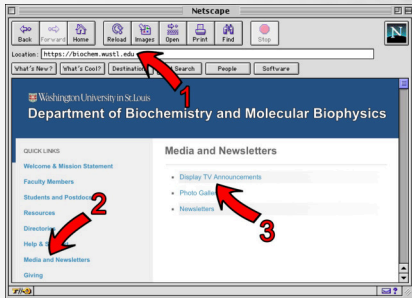


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School of Medicine

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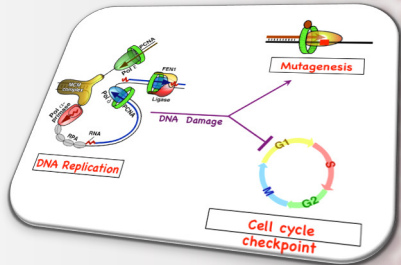
- 1) Go to [biochem.wustl.edu](https://biochem.wustl.edu)
- 2) Click **Media and Newsletters**
- 3) Click **Display TV Announcements**



# 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)

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# March Publication



**Michael J. Greenberg** & Jil C. Tardiff

***Complexity in genetic cardiomyopathies and new approaches for mechanism-based precision medicine***

J Gen Physiol. 2021 Mar 1;153(3):e202012662. doi: 10.1085/jgp.202012662. (2021)

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# Congratulations



April 15<sup>th</sup>, 2021 – **Linda J. Pike, PhD**, Professor of Biochemistry and Molecular Biophysics, along with **Alexander S. Holehouse, PhD**, Assistant Professor of Biochemistry and Molecular Biophysics, and Gary J. Patti, PhD, Professor of Chemistry and of Genetics and Medicine, received a new four year grant award from the National Institute of General Medical Sciences for their research entitled ***"Intrinsic Disorder and Agonist Bias in EGF Receptor Signaling"***.

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# January Publication



Rahul Tyagi, Christina A. Bulman, Fidelis Cho-Ngwa, Chelsea Fischer, Chris Marcellino, Michelle R. Arkin, James H. McKerrow, Case W. McNamara, **Matthew Mahoney**, Nancy Tricoche, Shabnam Jawahar, **James W. Janetka**, Sara Lustigman, Judy Sakanari, & Makedonka Mitreva

***An Integrated Approach to Identify New Anti-Filarial Leads to Treat River Blindness, a Neglected Tropical Disease***

Pathogens. 2021 Jan 14;10(1):71. doi: 10.3390/pathogens10010071. (2021)

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# 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)**

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# Congratulations to Dr. Barrick

February 2<sup>nd</sup>, 2021 - **Samantha Kirstin Barrick, PhD**, Postdoctoral Scholar in the department of Biochemistry and Molecular Biophysics, and the laboratory of Dr. Michael J. Greenberg, PhD, received a new three-year fellowship award from the National Institutes of Health, National Heart, Lung, and Blood Institute for her research entitled "***Multiscale investigation of cardiomyopathy-associated mutations in metavinculin***".



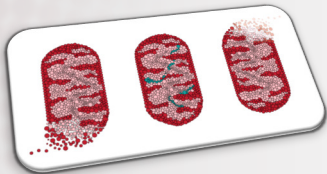
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# Spotlight on Research



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

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# 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)**

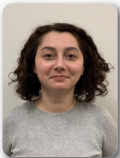
**Support website: [BMBSupport.wustl.edu](http://BMBSupport.wustl.edu)**

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

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# February Publication



**Kacey Mersch, Tugba N. Ozturk, Kunwoong Park, Hyun-Ho Lim, & Janice L. Robertson**

***Altering CLC stoichiometry by reducing non-polar side-chains at the dimerization interface***

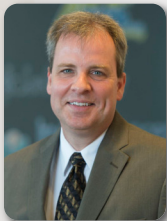
J Mol Biol. 2021 Feb 20;433(8):166886. doi: 10.1016/j.jmb.2021.166886. (2021)

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# Congratulations to Dr. Kinch



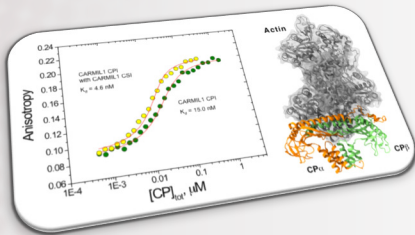
December 15<sup>th</sup>, 2020 - **Michael S Kinch, Ph.D.**, Associate Vice Chancellor, Director, Centers for Research Innovation in Biotechnology & Drug Discovery, and Professor of Biochemistry and Molecular Biophysics, received a new one-year grant award from Arnold Ventures for his research entitled "***CDEK: Clinical Data Experience Knowledge-base***".

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# 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)

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

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

# 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)

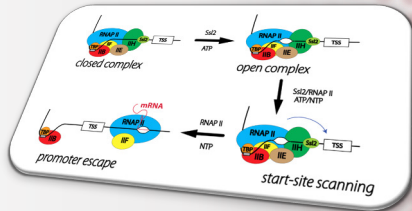


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# Spotlight on Research

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)

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# February Publication



**Alexander G. Kozlov & Timothy M. Lohman**

***Probing E. coli SSB Protein-DNA topology by reversing DNA backbone polarity***

Biophys J. 2021 Feb 23;S0006-3495(21)00164-8. doi: 10.1016/j.bpj.2021.02.025. (2021)

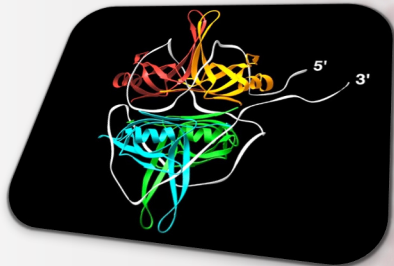
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# Spotlight on Research

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)

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

Contact any of the following for help

John Cooper, Department Head, [jcooper11@gmail.com](mailto:jcooper11@gmail.com), 314-362-3964

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

# Congratulations to Dr. Janetka

March 17<sup>th</sup>, 2021 – **Jim Janetka, PhD**, Professor of Biochemistry and Molecular Biophysics, along with Scott Hultgren, Helen L. Stoeber Professor of Molecular Microbiology, Michael Caparon, Professor of Molecular Microbiology, Peng Yuan, Associate Professor of Cell Biology and Physiology, and Ali Ellebedy, Associate Professor of Pathology and Immunology received a five-year U19 Research Program–Cooperative Agreement Award from the National Institutes of Health, National Institute of Allergy and Infectious Diseases entitled ***"Innovative Strategies to Combat Antibiotic-resistant Infections"***. Dr. Janetka is leader of the project scientific core named ***"Rational Design and Synthesis of Small Molecule Inhibitors Targeting Unique Pathogenic Mechanisms in Gram- and Gram+ Bacteria Important in UTI"***.



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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!

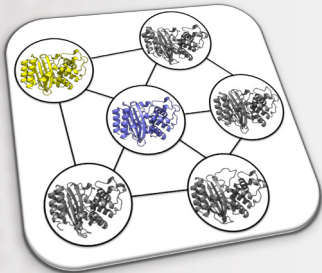
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# Spotlight on Research



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)

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# March Publication



Ming Cheng, Chunyang Guo, **Weikai Li**, & Michael L. Gross

***Free-Radical Membrane Protein Footprinting by Photolysis of Perfluoroisopropyl Iodide Partitioned to Detergent Micelle by Sonication***

Angew Chem Int Ed Engl. 2021 Mar 10. doi: 10.1002/anie.202014096. (2021)

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# Holiday Schedule

Holiday	Day	Date Observed at WU
Martin Luther King, Jr. Day	Monday	January 18 <sup>th</sup> , 2021
<b>Memorial Day</b>	<b>Monday</b>	<b>May 31<sup>st</sup>, 2021</b>
Independence Day	Monday	July 5 <sup>th</sup> , 2021
Labor Day	Monday	September 6 <sup>th</sup> , 2021
Thanksgiving	Thursday	November 25 <sup>th</sup> , 2021
Day after Thanksgiving	Friday	November 26 <sup>th</sup> , 2021



# BMB SCIENCE FRIDAYS

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

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



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# 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)**

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# Congratulations to Dr. Niemi



February 9<sup>th</sup>, 2021 – **Natalie M. Niemi, PhD**, Assistant Professor in the department of Biochemistry and Molecular Biophysics, received a one-year pilot and feasibility grant award from the Washington University Diabetes Research Center (DRC), sponsored by the National Institutes of Health, National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK) for her research entitled "***The role of the mitochondrial phosphatase Pptc7 in enabling metabolic flexibility***".

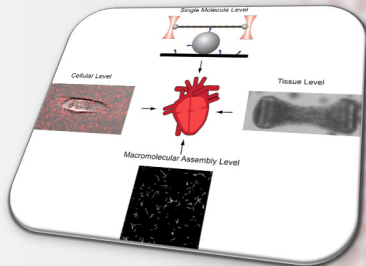
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# Spotlight on Research

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)

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# 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.**



# February Publication



**Michael D. Onken**, Carol M. Makepeace, Kevin M. Kaltenbronn, Joelle Choi, Leonel Hernandez-Aya, Katherine N. Weilbaecher, Kisha D. Piggott, P. Kumar Rao, Carla M. Yuede, Alethia J. Dixon, Patrick Osei-Owusu, **John A. Cooper**, & Kendall J. Blumer

***Targeting primary and metastatic uveal melanoma with a G protein inhibitor***

J Biol Chem. 2021 Feb 9;100403. doi: 10.1016/j.jbc.2021.100403. (2021)

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# Congratulations to Dr. Li

January 22<sup>nd</sup>, 2021 - **Weikai Li, PhD**, Associate Professor of Biochemistry and Molecular Biophysics, along with Michael L. Gross, PhD, Professor of Chemistry, Immunology, and Medicine, and Michael J. Greenberg, PhD, Assistant Professor of Biochemistry and Molecular Biophysics, received a new three-year grant award from American Heart Association for their research entitled "***Interdisciplinary structural studies of iron homeostasis in cardiovascular health***".



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# February Publication



Min Kyung Shinn, **Alexander G. Kozlov**, & **Timothy M. Lohman**

***Allosteric effects of SSB C-terminal tail on assembly of E. coli RecOR proteins***

Nucleic Acids Res. 2021 Feb 26;49(4):1987-2004. doi: 10.1093/nar/gkaa1291. (2021)

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# Congratulations to Dr. Janetka



March 18<sup>th</sup>, 2021 – **Jim Janetka, PhD**, Professor of Biochemistry and Molecular Biophysics, Makedonka Mitreva, Professor of Medicine and Genetics, and Raffi Aroian, Professor of Molecular Medicine at the University of Massachusetts Medical School have received a new multi-PI R01 award from the National Institutes of Health, National Institute of Allergy and Infectious Diseases entitled "***Development of small molecule inhibitors of metabolic enzymes as broad-spectrum anthelmintic drugs***".

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