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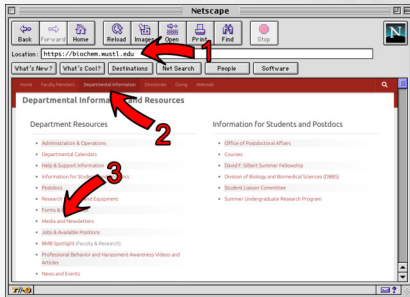


Washington University in St. Louis
School of Medicine

<https://biochem.wustl.edu>

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- 2) Click **Departmental Information**
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Congratulations to Dr. Niemi

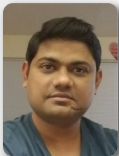


August 11th, 2023 – **Natalie M. Niemi, PhD**, Assistant Professor in the department of Biochemistry and Molecular Biophysics, received a new five-year MIRA grant award from National Institute of General Medical Sciences for her research entitled "***Delineating phosphorylation-mediated regulation of mitochondrial function***".

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March Publication



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

Allosteric effects of E. coli SSB and RecR proteins on RecO protein binding to DNA

Nucleic Acids Res. 2023 Mar 21;51(5):2284-2297. doi: 10.1093/nar/gkad084. (2023)

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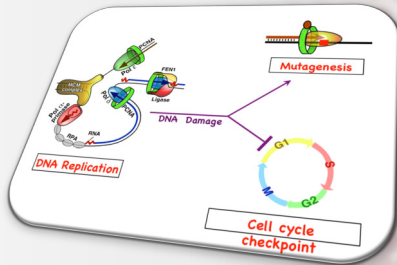
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Spotlight on Research

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:
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**Congratulations to Jerry Wei and Garrett Ginell for being selected for the
2022 MilliporeSigma Fellowship**



Lianjie "Jerry" Wei is a third-year graduate student in the Biochemistry, Biophysics, and Structural Biology (BBSB) program. He is currently working in the Laboratory of Dr. Natalie Niemi in the Department of Biochemistry and Molecular Biophysics to complete his Ph.D. studies. His research is focused on understanding how protein post-translational modifications regulate mitochondrial organellar homeostasis.

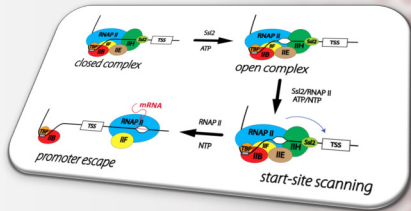


Garrett Ginell is a fourth-year graduate student in the Biochemistry, Biophysics, and Structural Biology (BBSB) program. He is completing his Ph.D. thesis work in the lab of Dr. Alex Holehouse (Department of Biochemistry and Molecular Biophysics), where he is applying and developing theoretical and computational methods to understand how chemical features encoded in intrinsically disordered proteins determine their propensity to interact with one another.

Visit biochem.wustl.edu/news to read more!

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*.



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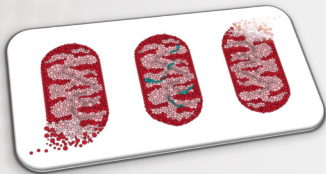
Support website: BMBSupport.wustl.edu

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

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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

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Congratulations to Dr. Niemi

August 11th, 2023 – **Natalie M. Niemi, PhD**, Assistant Professor in the department of Biochemistry and Molecular Biophysics, received a one-year grant award from the Washington University Digestive Disease Research Core Center (DDRCC), sponsored by the National Institutes of Health, National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK) for her research entitled "***Investigating mitochondrial protein phosphorylation in NAFLD and NASH***".



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July Publication



Evelyn Ploetz, Benjamin Ambrose, Anders Barth, Richard Börner, Felix Erichson, Achillefs N. Kapanidis, Harold D. Kim, Marcia Levitus, **Timothy M. Lohman**, Abhishek Mazumder, David S. Rueda, Fabio D. Steffen, Thorben Cordes, Steven W. Magennis, & Eitan Lerner

A new twist on PIFE: photoisomerisation-related fluorescence enhancement

ArXiv. 2023 Jul 10;arXiv:2302.12455v2. (2023)

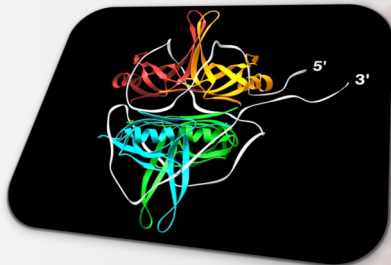
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Spotlight on Research

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:
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due by the 5th of each month.**

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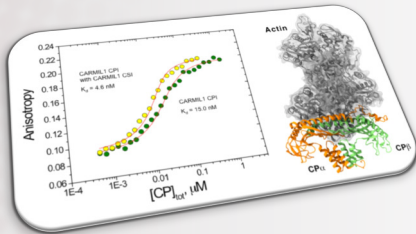
Jessica Kennedy – Title IX Director, jwkennedy@wustl.edu, 314-935-3118

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

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.

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December Publication



Zev J. Greenberg, Darlene Monlish, Luana Chiquetto Paracatu, Qian Dong, Michael P. Rettig, Nate Dee Roundy, Rofaida Gaballa, **Weikai Li**, Wei Yang, Cliff J. Luke, & Laura Schuettpelz

The tetraspanin CD53 protects stressed hematopoietic stem cells via promotion of DREAM complex- mediated quiescence

Blood. 2022 Dec 21;blood.2022016929. doi: 10.1182/blood.2022016929. (2022)

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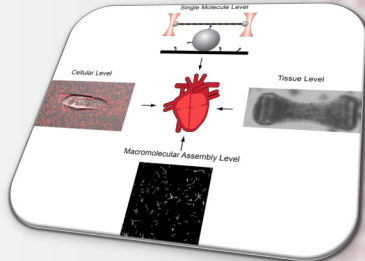
Holiday Schedule

Holiday	Day Observed	Date Observed at WashU
Independence Day	Tuesday	July 4 th , 2023
Labor Day	Monday	September 4th, 2023
Thanksgiving	Thursday	November 23 rd , 2023
Day after Thanksgiving	Friday	November 24 th , 2023
Christmas Eve	Friday	December 22 nd , 2023
Christmas Day	Monday	December 25 th , 2023




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

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Congratulations to Dr. Niemi



August 11th, 2023 – **Natalie M. Niemi, PhD**, Assistant Professor in the department of Biochemistry and Molecular Biophysics, received a new four-year grant award from Molecular and Cellular Biosciences Core Programs of the National Science Federation for her research entitled ***"The role of protein phosphorylation in the mitochondrial matrix in determining mitophagic selectivity"***.

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