

Welcome to the Department of Biochemistry and Molecular Biophysics

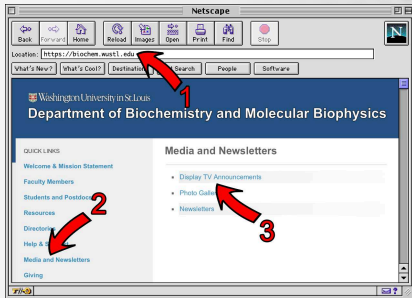


Washington University in St. Louis
School of Medicine

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- 3) Click **Display TV Announcements**



COVID-19



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Congratulations to Megan Cohan and Jonathan Lin for being selected as the 2020 Ceil M. DeGutis Prize Fellows

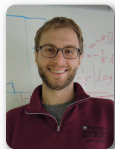
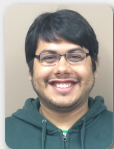


Ms. Megan Cohan is a Ph.D. Candidate in the lab of Dr. Rohit Pappu in the Biomedical Engineering Department at the McKelvey School of Engineering.



Dr. Jonathan Lin completed his Ph.D. thesis in the lab of Dr. Rajendra Apte in the Department of Ophthalmology and Visual Sciences.

April Publication



Brown C.A., Hu L., Sun Z., Patel M.P., **Singh S.**, **Porter J.R.**, Sankaran B., Prasad B.V.V., **Bowman G.R.**, & Palzkill T.

Antagonism between substitutions in β -lactamase explains a path not taken in the evolution of bacterial drug resistance.

J Biol Chem. pii: jbc.RA119.012489. doi: 10.1074/jbc.RA119.012489. (2020)

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Congratulations to Dr. Lohman



April 24th, 2020 – **Timothy M. Lohman, PhD**, Marvin A. Brennecke Professor of Biophysics and professor of biochemistry and molecular biophysics received a new five year MIRA grant award from National Institute of General Medical Sciences for his research entitled ***"Mechanisms of Helicases, Translocases and SSB Proteins involved in Genome Maintenance"***.

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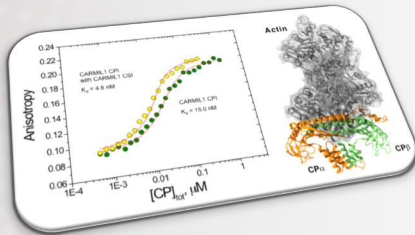
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Spotlight on Research



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

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March Publication



Holehouse A.S. & Sukenik S.

***Controlling Structural Bias in Intrinsically Disordered Proteins
Using Solution Space Scanning.***

J Chem Theory Comput. 16(3):1794-1805. doi: 10.1021/acs.jctc.9b00604. (2020)

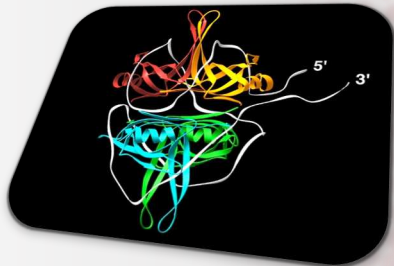
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Spotlight on Research

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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Are you paid **monthly?**

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



TEA TIME

for Faculty, Staff, Postdocs & Students

Tuesdays & Thursdays
3:00-4:00 pm

Biochemistry Break Room
201 McDonnell Sciences Building

Coffee, tea and cookies are served.

May Publication



Katarzyna Dubiel, Camille Henry, Lisanne M Spenkelink, **Alexander G Kozlov**, Elizabeth A Wood, Slobodan Jergic, Nicholas E Dixon, Antoine M van Oijen, Michael M Cox, **Timothy M Lohman**, Steven J Sandler, & James L Keck

Development of a Single-Stranded DNA-binding Protein Fluorescent Fusion Toolbox

Nucleic Acids Res. doi: 10.1093/nar/gkaa320. (2020)

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March Publication



Hohl M., Mojumdar A., **Hailemariam S.**, Kuryavyi V., Ghisays F., Sorenson K., Chang M., Taylor B.S., Patel D.J., **Burgers P.M.**, Cobb J.A., & Petrini J.H.J.

Modeling cancer genomic data in yeast reveals selection against ATM function during tumorigenesis.

PLoS Genet. 16(3):e1008422. doi: 10.1371/journal.pgen.1008422. (2020)

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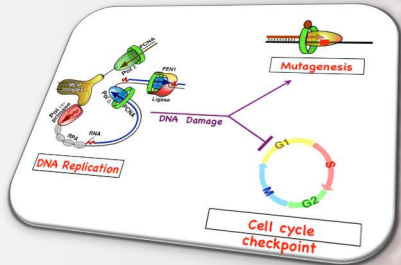
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Spotlight on Research

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

Contact any of the following for help

Jayma Mikes, Business Manager, jmikes@wustl.edu, 314-362-0262

John Cooper, Department Head, jcooper11@gmail.com, 314-362-3964

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

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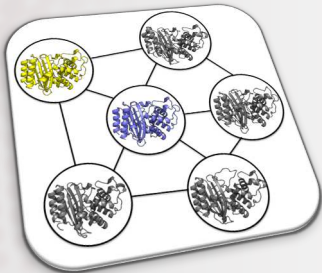
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Spotlight on Research



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

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May Publication



James W Janetka, Allen T Hopper, Ziping Yang, Jennifer Barks, Mary Savari Dhason, Qiuling Wang, & L David Sibley

Optimizing Pyrazolopyrimidine Inhibitors of Calcium Dependent Protein Kinase 1 for Treatment of Acute and Chronic Toxoplasmosis

J Med Chem. doi: 10.1021/acs.jmedchem.0c00419. (2020)

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a forum for new data, new ideas
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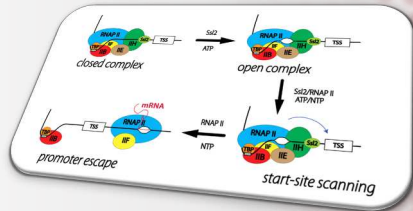
Holiday Schedule

Holiday	Day	Date Observed at WU
Martin Luther King, Jr.	Monday	January 20 th , 2020
Memorial Day	Monday	May 25 th , 2020
Independence Day	Friday	July 3rd, 2020
Labor Day	Monday	September 7 th , 2020
Thanksgiving Day	Thursday	November 26 th , 2020
Friday after Thanksgiving	Friday	November 27 th , 2020



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*.



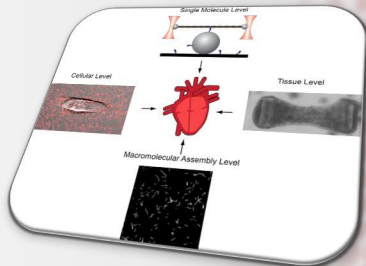
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Spotlight on Research

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:
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**Don't forget your
keys!**

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

