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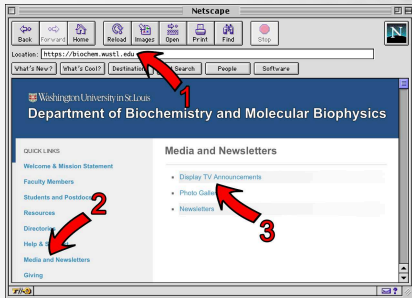


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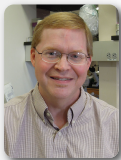
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- 3) Click **Display TV Announcements**



January Publication



Michael D. Onken, Kendall J. Blumer, & **John A. Cooper**

Uveal melanoma cells use ameboid and mesenchymal mechanisms of cell motility crossing the endothelium

Mol Biol Cell. 2021 Jan 6;mbcE20040241. doi: 10.1091/mbc.E20-04-0241. (2021)

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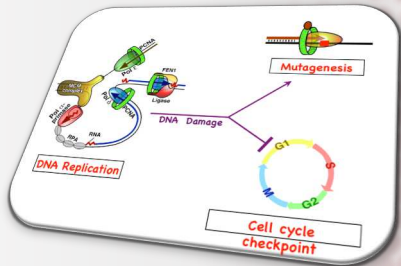
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Spotlight on Research

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

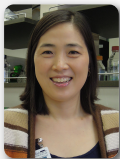


See more research:
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November Publication



Joanna Kim & John A. Cooper

Junctional Localization of Septin 2 Is Required for Organization of Junctional Proteins in Static Endothelial Monolayers

Arterioscler Thromb Vasc Biol. ATVBAHA120315472. doi: 10.1161/ATVBAHA.120.315472. (2020)

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COVID-19



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screening.wustl.edu

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December Publication



Vishnu C. Damalanka, Amarendar Reddy Maddirala, & James W. Janetka

Novel approaches to glycomimetic design: Development of small molecular weight lectin antagonists

Expert Opin Drug Discov. doi: 10.1080/17460441.2021.1857721. (2020)

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Congratulations to Dr. Holehouse



January 11th, 2021 – **Alex Holehouse, Ph.D.**, Assistant Professor of Biochemistry and Molecular Biophysics, received a new one-year grant award from Dewpoint Therapeutics for his research entitled "***Bioinformatic tools for the analysis of phase separating proteins***".

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January Publication



Wayne M. Barnes, Zhian Zhang, & Milko B. Kermekchiev

A Single Amino Acid Change to Taq DNA Polymerase Enables Faster PCR, Reverse Transcription and Strand-Displacement

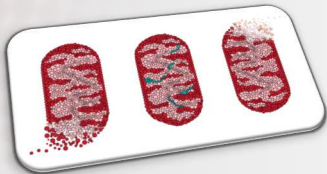
Front. Bioeng. Biotechnol., doi: 10.3389/fbioe.2020.553474(2021)

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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.

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November Publication



Adam L. Bailey, Oleksandr Dmytrenko, **Lina Greenberg**, Andrea L. Bredemeyer, Pan Ma, Jing Liu, Vinay Penna, Lulu Lai, Emma S. Winkler, Sanja Sviben, Erin Brooks, Ajith P. Nair, Kent A. Heck, Aniket S. Rali, Leo Simpson, Mehrdad Saririan, Dan Hobohm, **W. Tom Stump**, James A. Fitzpatrick, Xuping Xie, Pei-Yong Shi, J. Travis Hinson, Weng-Tein Gi, Constanze Schmidt, Florian Leuschner, Chieh-Yu Lin, Michael S. Diamond, **Michael J. Greenberg**, & Kory J. Lavine

SARS-CoV-2 Infects Human Engineered Heart Tissues and Models COVID-19 Myocarditis

bioRxiv. 2020 Nov 5;2020.11.04.364315. doi: 10.1101/2020.11.04.364315. (2020)

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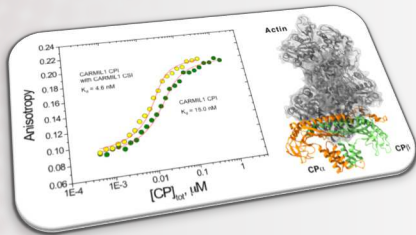
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Spotlight on Research



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.

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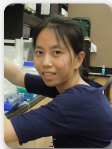
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November Publication



Shixuan Liu, Shuang Li, Guomin Shen, Narayanasami Sukumar, Andrzej M. Krezel, & Weikai Li

Structural basis of antagonizing the vitamin K catalytic cycle for anticoagulation

Science. 2020 Nov 5;eabc5667. doi: 10.1126/science.abc5667. (2020)

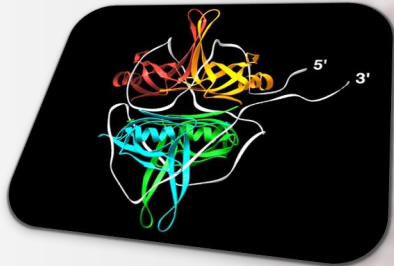
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Spotlight on Research

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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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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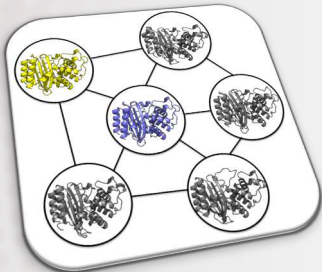
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Spotlight on Research



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.

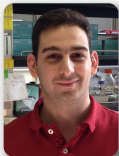
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November Publication



Elias A. Tannous, Luke A. Yates, Xiaodong Zhang, & **Peter M. Burgers**

Mechanism of auto-inhibition and activation of Mec1 ATR checkpoint kinase

Nat Struct Mol Biol. 2020 Nov 9. doi: 10.1038/s41594-020-00522-0. (2020)

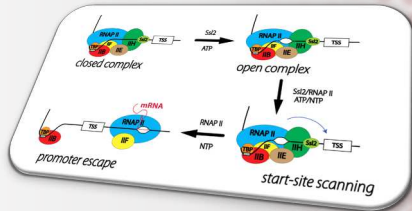
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Spotlight on Research

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*.



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a forum for new data, new ideas
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COVID-19



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Holiday Schedule

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



Congratulations to Dr. Li

January 22nd, 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***".

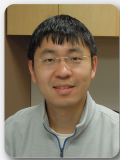
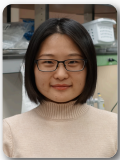


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December Publication



Miao Gui, **Meisheng Ma**, Erica Sze-Tu, **Xiangli Wang**, Fujiet Koh, Ellen D. Zhong, Bonnie Berger, Joseph H. Davis, Susan K. Dutcher, **Rui Zhang**, & Alan Brown

Structures of radial spokes and associated complexes important for ciliary motility

Nat Struct Mol Biol. 28(1):29-37. doi: 10.1038/s41594-020-00530-0. (2020)

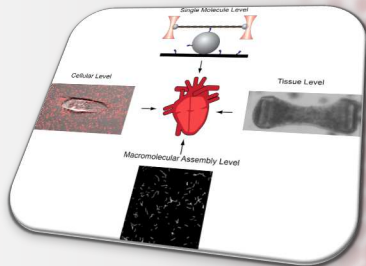
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Spotlight on Research

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!



**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.**



November Publication



Michael S. Kinch, Zachary Kraft, & Tyler Schwartz

Sources of innovation for new medicines: questions of sustainability

Drug Discov Today. S1359-6446(20)30443-8. doi: 10.1016/j.drudis.2020.10.026. (2020)

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