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Washington University in St. Louis
School of Medicine

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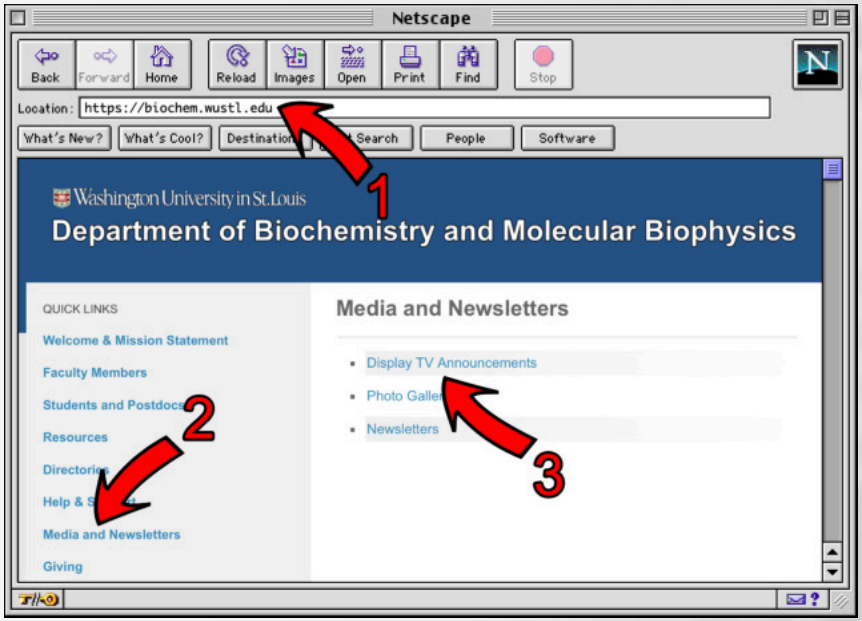
2) Click **Media and Newsletters**

3) Click **Display TV Announcements**



August Publication

Wenwen Gao, Yaqi Xu, Hongli Liu, Meng Gao, Qing Cao, Yiyi Wang, Longteng Cui, Rong Huang, Yan Shen, Sanqiang Li, Haiping Yang, Yixiang Chen, Chaokun Li, Haichuan Yu, **Weikai Li**, & Guomin Shen.

Characterization of missense mutations in the signal peptide and propeptide of FIX in hemophilia B by a cell-based assay

Blood Adv. 4(15):3659-3667. doi: 10.1182/bloodadvances.2020002520. (2020)

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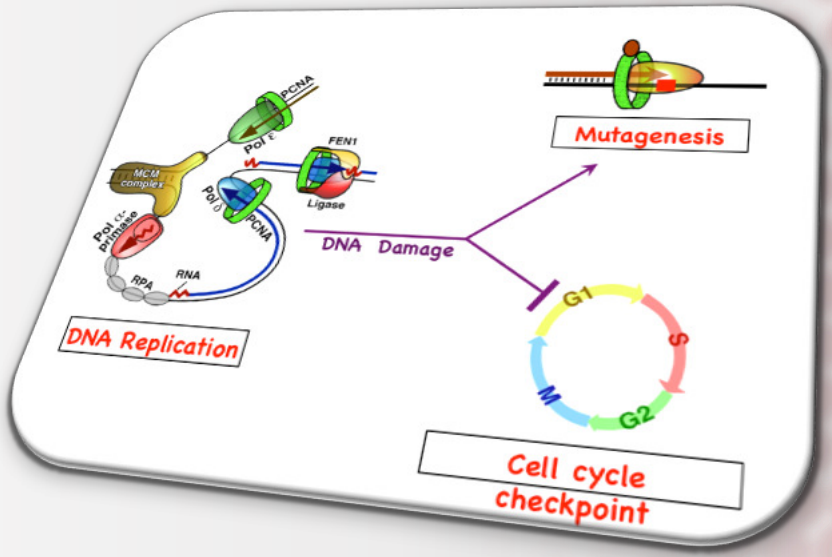
Spotlight on Research

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

Congratulations to **Dr. Jim Janetka**, whose promotion to Professor was officially approved on September 11, 2020.

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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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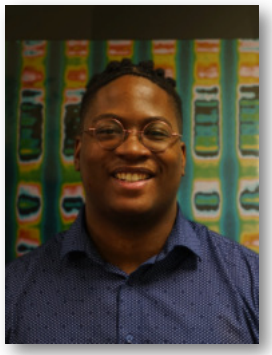
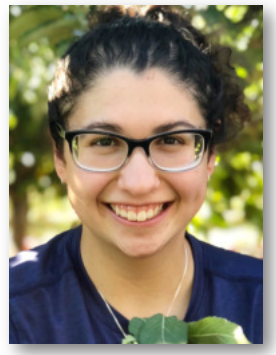
Congratulations to Jhullian Alston and Jasmine Cubuk for being selected for the 2020 MilliporeSigma Fellowship



Jhullian Alston (JJ) is a fourth-year graduate student in the Biochemistry, Biophysics, and Structural Biology (BBSB) program. He is completing his Ph.D. thesis work jointly between the labs of Dr. Andrea Soranno and Dr. Alex Holehouse



Jasmine is a fourth-year graduate student in the Biochemistry, Biophysics, and Structural Biology (BBSB) program. She is doing her PhD thesis work in the lab of Dr. Andrea Soranno.

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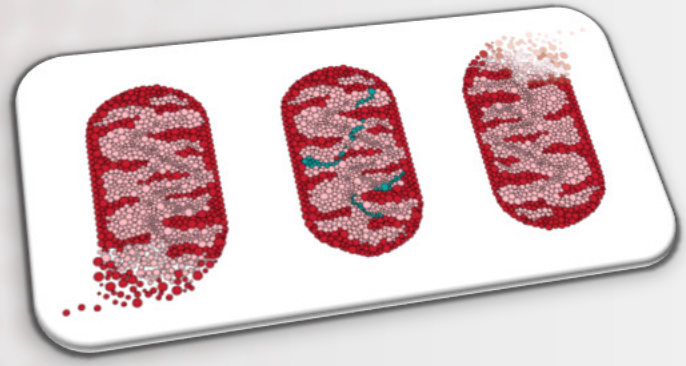
Spotlight on Research



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

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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Support website: BMBSupport.wustl.edu

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August Publication

Weikai Li, Russell E. Bishop, & Filippo Mancia.

Integral Membrane Enzymes (2020)

J Mol Biol. 432(18):4943-4945. doi: 10.1016/j.jmb.2020.07.022. (2020)

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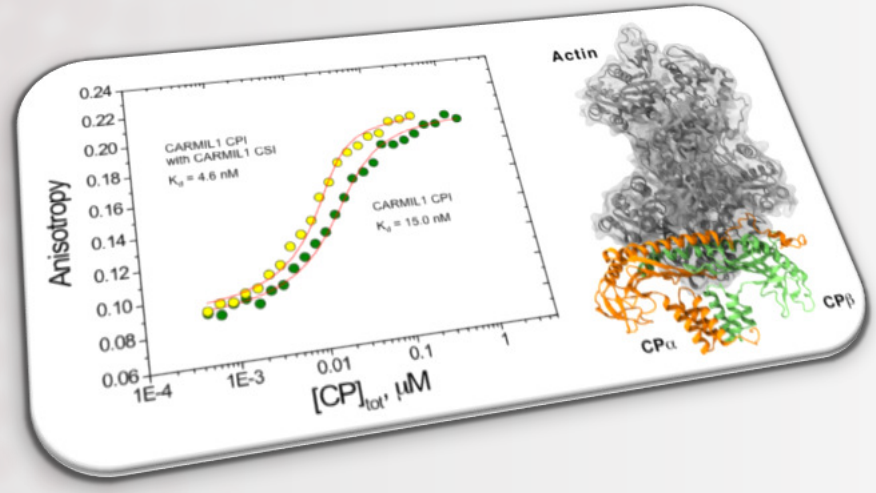
Spotlight on Research



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

Are you paid monthly?

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

August Publication

Mathivanan Chinnaraj, David A. Barrios, **Carl Frieden**, Tomasz Heyduk, Robert Flaumenhaft, & Nicola Pozzi.

Bioorthogonal Chemistry Enables Single-Molecule FRET Measurements of Catalytically Active Protein Disulfide Isomerase

Chembiochem. doi: 10.1002/cbic.202000537. (2020)

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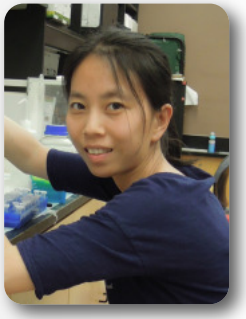
November Publication



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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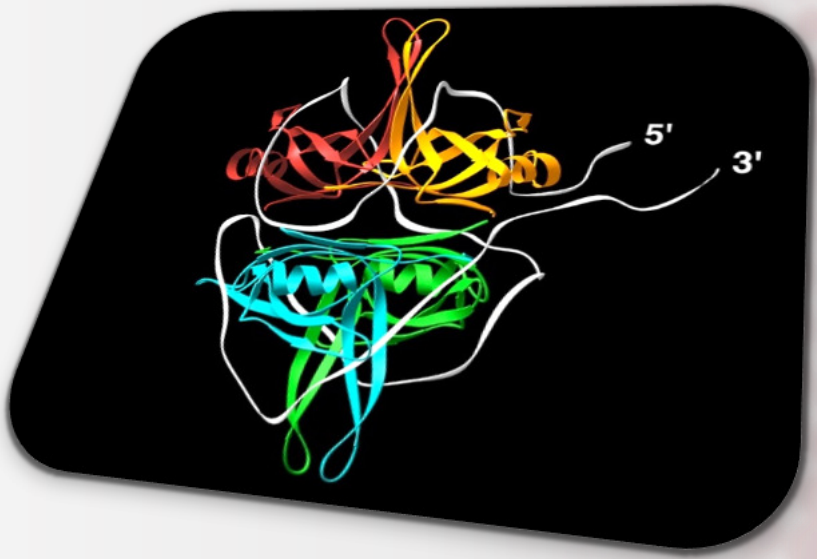
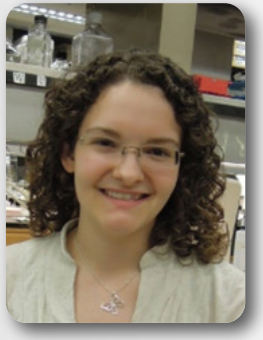
Spotlight on Research

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:
biochem.wustl.edu/spotlight

September Publication



Melanie A. Sparks, **Peter M. Burgers**, & **Roberto Galletto**.

Pif1, RPA and FEN1 modulate the ability of DNA polymerase δ to overcome protein barriers during DNA synthesis

Biol Chem. jbc.RA120.015699. doi: 10.1074/jbc.RA120.015699. (2020)

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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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September Publication

Kory J. Lavine & **Michael J. Greenberg**.

Beyond genomics-technological advances improving the molecular characterization and precision treatment of heart failure

Heart Fail Rev. doi: 10.1007/s10741-020-10021-5. (2020)

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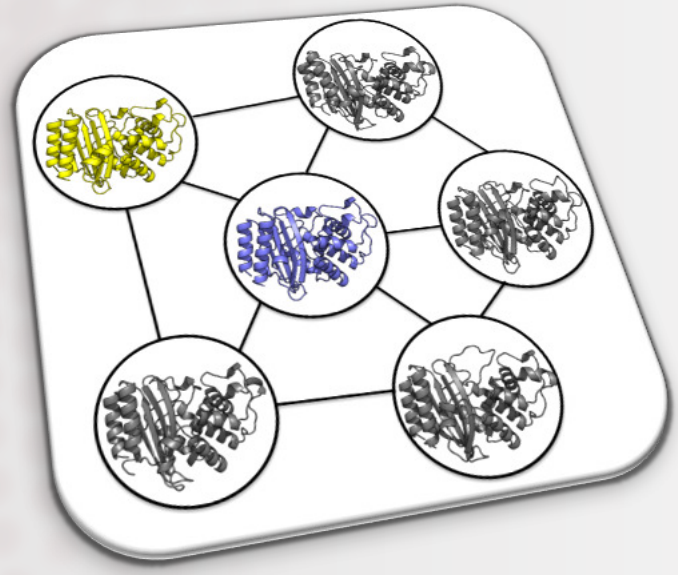
Spotlight on Research



The **Bowman Lab** seeks to understand the distribution of different structures a protein adopts and how this ensemble determines a proteins 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:
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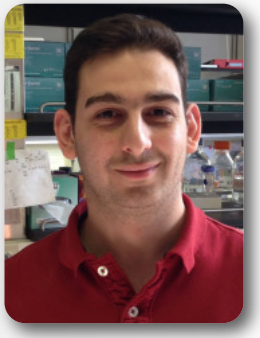
November Publication



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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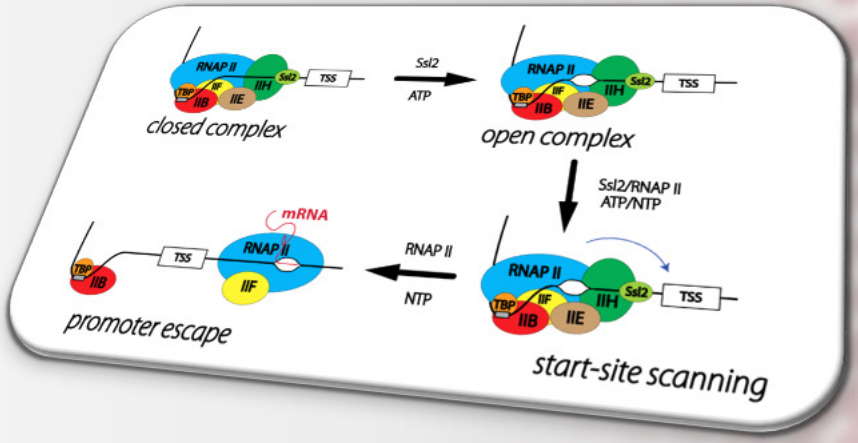
Spotlight on Research

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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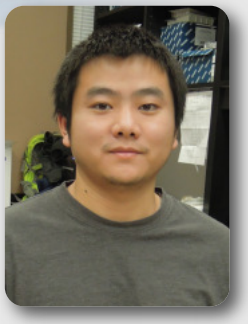
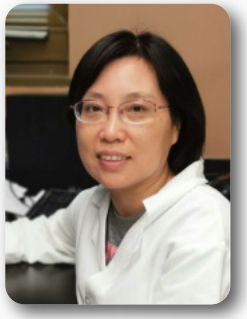
Holiday Schedule

Holiday	Day	Date Observed at WU
Thanksgiving Day	Thursday	November 26th, 2020
Day after Thanksgiving	Friday	November 27th, 2020
Christmas Eve	**Thursday**	**December 24th, 2020**
Christmas Day	**Friday**	**December 25th, 2020**
New Year's Eve	Thursday	Thursday, December 31st, 2020
New Year's Day	Friday	Friday, January 1st, 2021

August Publication





Yihu Yang, Xiaoran Roger Liu, Zev J. Greenberg, Fengbo Zhou, **Peng He**, **Lingling Fan**, **Shixuan Liu**, Guomin Shen, Takeshi Egawa, Michael L. Gross, Laura G. Schuettpelz, & **Weikai Li**

Open conformation of tetraspanins shapes interaction partner networks on cell membranes

EMBO J (2020) e105246. doi: 10.15252/embj.2020105246. (2020)

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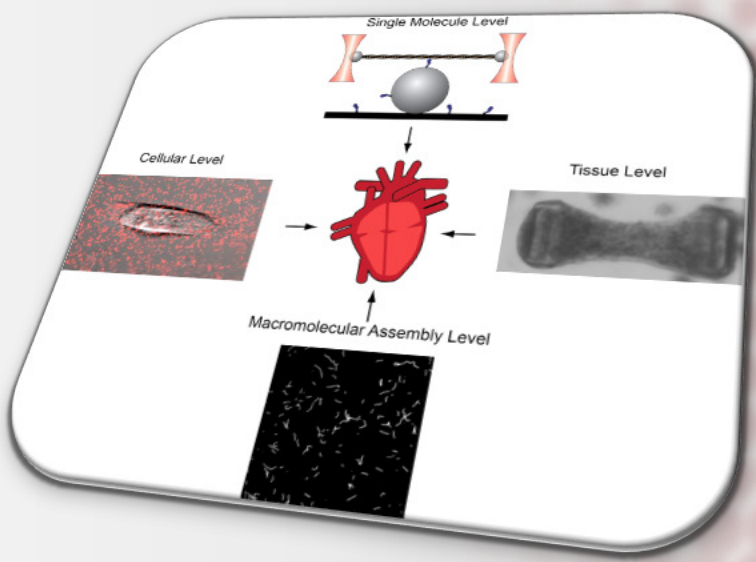
Spotlight on Research

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.



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