

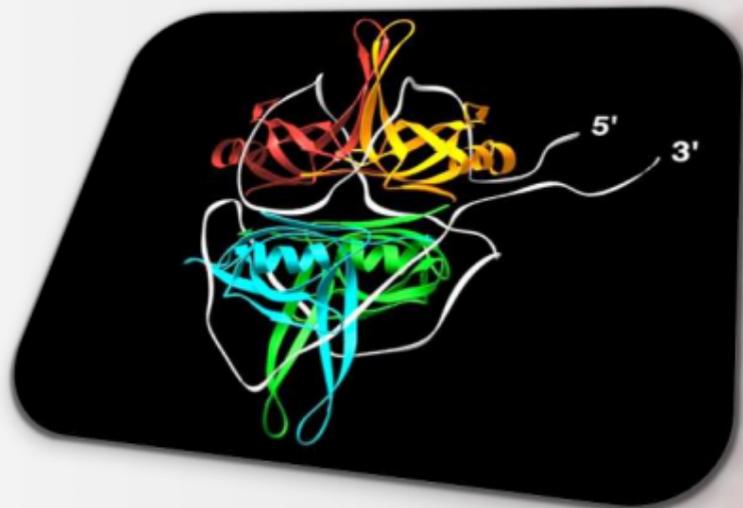
Welcome to the Department of Biochemistry and Molecular Biophysics



Washington University in St. Louis
School of Medicine

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

Department of Biochemistry and Molecular Biophysics

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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



Barrick S.K., Clippinger S.R., Greenberg L., & Greenberg M.J.

***Computational Tool to Study Perturbations in Muscle Regulation
and Its Application to Heart Disease.***

Biophys J. pii: S0006-3495(19)30379-0. doi: 10.1016/j.bpj.2019.05.002. (2019)

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Congratulations to Dr. Bowman

The Board of Trustees voted at their May 3rd, 2019 meeting to award tenure in the Department of Biochemistry and Molecular Biophysics to **Dr. Greg Bowman**.



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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.



April Publication



Damalanka V.C. & Janetka J.W.

Recent progress on inhibitors of the type II transmembrane serine proteases, hepsin, matriptase and matriptase-2.

Future Med Chem. doi: 10.4155/fmc-2018-0446. (2019)

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and works in progress

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

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March Publication



Tomko E.J. & Galburt E.A.

Single-molecule approach for studying RNAP II transcription initiation using magnetic tweezers.

Methods. pii: S1046-2023(18)30297-4. doi: 10.1016/j.ymeth.2019.03.010. (2019)

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Congratulations to Dr. Soranno



April 29th, 2019 – **Andrea Soranno, PhD**, Assistant Professor of Biochemistry and Molecular Biophysics received a new five year grant award from the National Institute on Aging for his research entitled ***"Conformational and functional analysis of Apolipoprotein E"***.

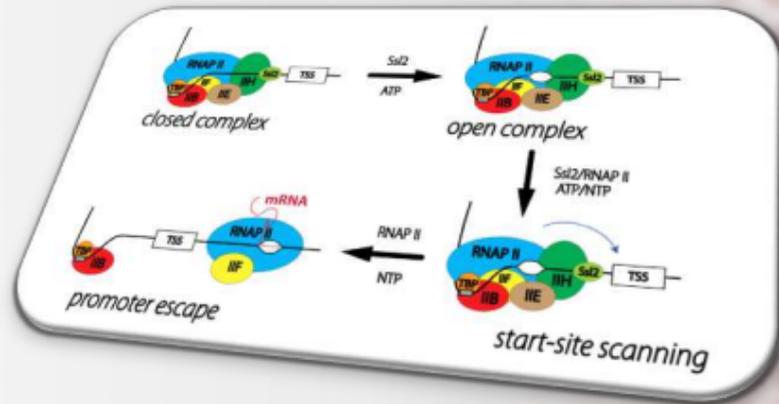
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Spotlight on Research

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*.

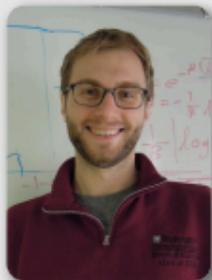


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March Publication



**Porter J.R., Moeder K.E., Sibbald C.A., Zimmerman M.I., Hart K.M.,
Greenberg M.J., & Bowman G.R.**

***Cooperative Changes in Solvent Exposure Identify Cryptic Pockets,
Switches, and Allosteric Coupling.***

Biophys J. 116(5):818-830. doi: 10.1016/j.bpj.2018.11.3144. (2019)

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Holiday Schedule

Holiday	Day	Date Observed at WU
Martin Luther King, Jr. Day	Monday	January 21 st , 2019
Memorial Day	Monday	May 27 th , 2019
Independence Day	Thursday	July 4th, 2019
Labor Day	Monday	September 2 nd , 2019
Thanksgiving Day	Thursday	November 28 th , 2019
Friday after Thanksgiving	Friday	November 29 th , 2019

May Publication



Heitmeier M.R., Hresko R.C., Edwards R.L., **Prinsen M.J.**, **Ilagan M.X.G.**,
Odom John A.R., & Hruz P.W.

Identification of druggable small molecule antagonists of the Plasmodium falciparum hexose transporter PfHT and assessment of ligand access to the glucose permeation pathway via FLAG-mediated protein engineering.

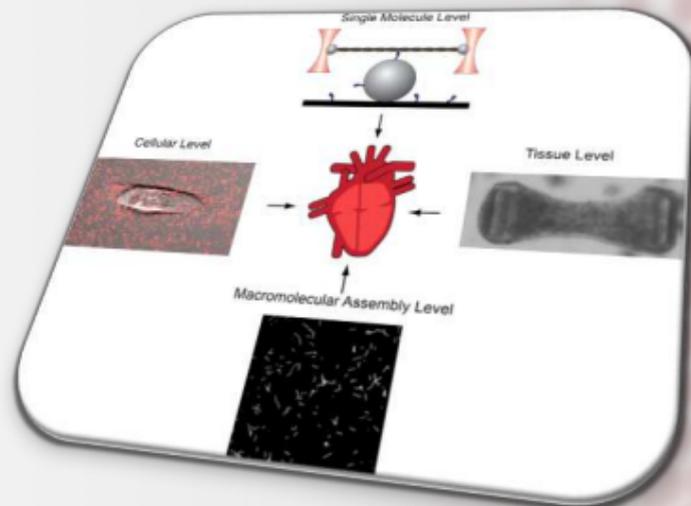
PLoS One. 14(5):e0216457. doi: 10.1371/journal.pone.0216457. eCollection 2019. (2019)

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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

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Are you paid **monthly?**

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

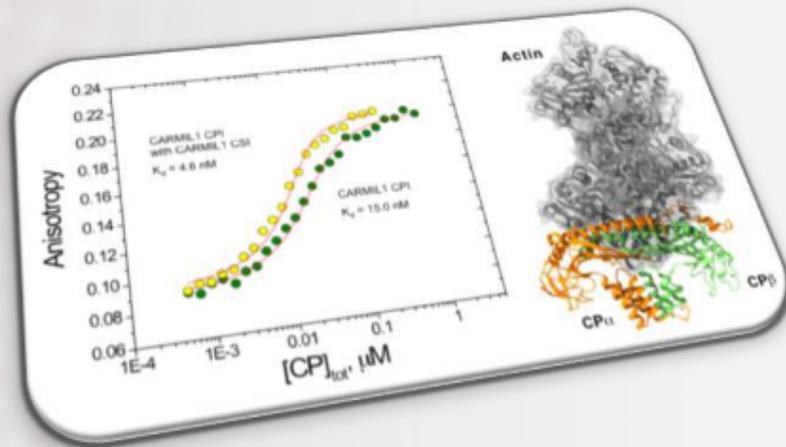
**Congratulations to Josh Rackers for being selected as the
2019 Ceil M. DeGutis Prize Fellow.**



Josh is a graduate student in the Computational & Molecular Biophysics program. He is doing his PhD thesis work in the lab of Dr. Jay Ponder. As a graduate student, Josh has developed a novel physics-based model for simulating biomolecules, won multiple fellowships, and contributed to major software projects. He will defend his thesis, entitled, "A Physics-Based Intermolecular Potential for Biomolecular Simulation" on April 26th, 2019.

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

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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BMB Support

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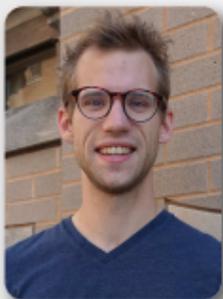


Support email: support@biochem.wustl.edu

Support website: BMBSupport.wustl.edu

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

May Publication



Jensen D., Manzano A.R., Rammohan J., Stallings C.L., & Galburt E.A.

CarD and RbpA modify the kinetics of initial transcription and slow promoter escape of the Mycobacterium tuberculosis RNA polymerase.

Nucleic Acids Res. pii: gkz449. doi: 10.1093/nar/gkz449. (2019)

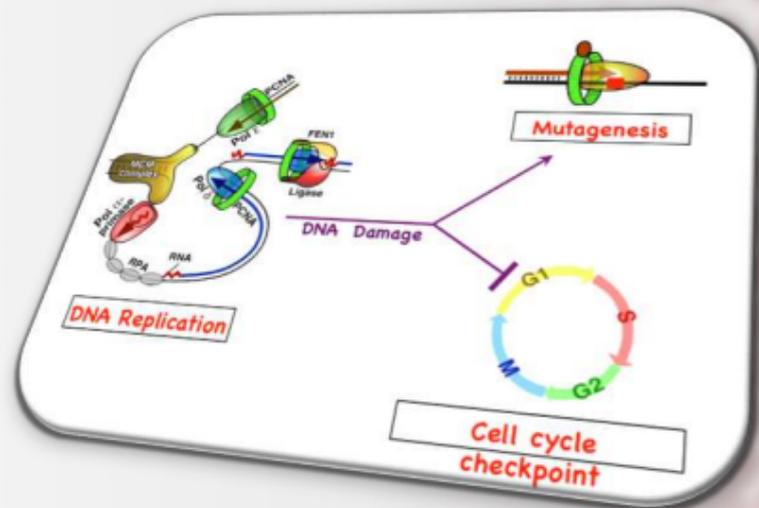
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Spotlight on Research

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

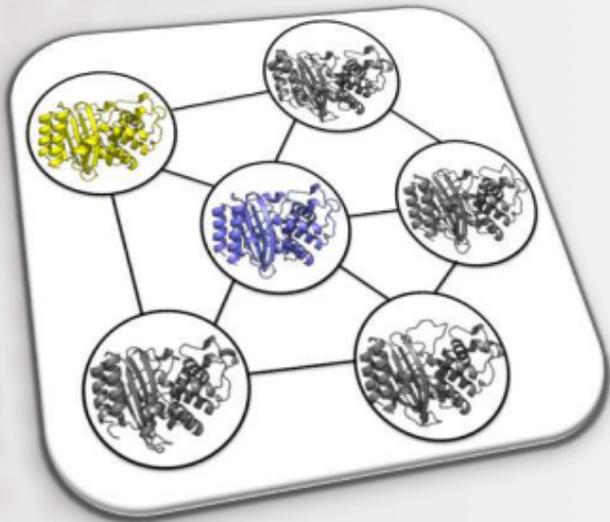
Jessica Kennedy – Title IX Director, jwkennedy@wustl.edu, 314-935-3118

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

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



Hailemariam S., Kumar S., & **Burgers P.M.**

Activation of Tel1^{ATM} kinase requires Rad50 ATPase and long nucleosome-free DNA, but no DNA ends.

Biol Chem. pii: jbc.RA119.008410. doi: 10.1074/jbc.RA119.008410. (2019)

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