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Washington University in St. Louis
School of Medicine

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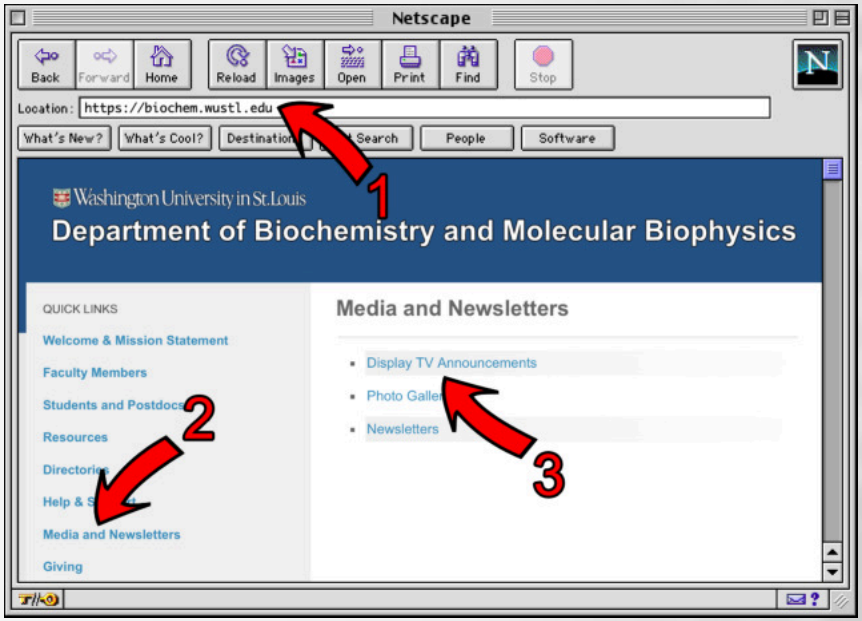
3) Click **Display TV Announcements**



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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Congratulations

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

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COVID-19

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screening.wustl.edu

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June Publication

Eliza A. Ruben, Prafull S. Gandhi, Zhiwei Chen, Sarah K. Koester, **Gregory T. DeKoster**, **Carl Frieden**, & Enrico Di Cera.

19 F NMR reveals the conformational properties of free thrombin and its zymogen precursor prethrombin-2

J Biol Chem. 295(24):8227-8235. doi: 10.1074/jbc.RA120.013419. (2020)

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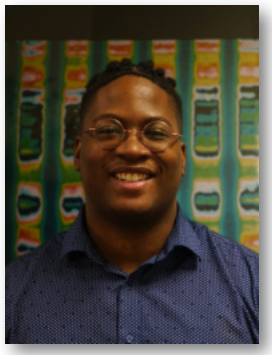
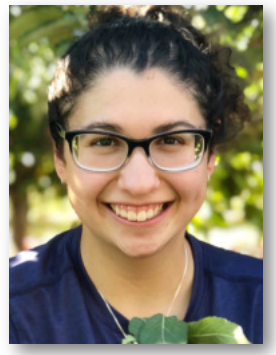
Congratulations to Jhullian Alston and Jasmine Cubuk for being selected for the 2020 MilliporeSigma Fellowship



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

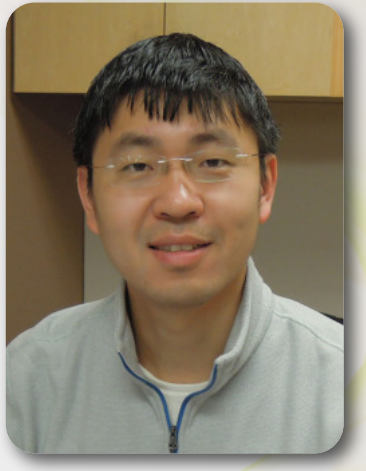


Jasmine is a fourth-year graduate student in the Biochemistry, Biophysics, and Structural Biology (BBSB) program. She is doing her PhD thesis work in the lab of Dr. Andrea Soranno.

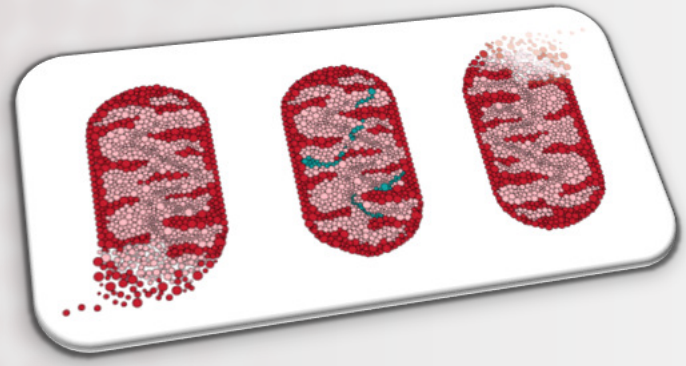
Visit **biochem.wustl.edu/news** to read more!

Congratulations to Dr. Zhang

July 10th, 2020 – **Rui Zhang, PhD**, assistant professor of biochemistry and molecular biophysics received a new five year grant award from the National Institute of General Medical Sciences for his research entitled ***"Structural and functional studies of axonemal microtubule inner proteins (MIPs)".***



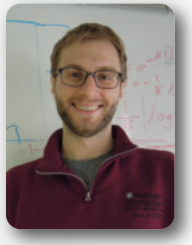
Spotlight on Research

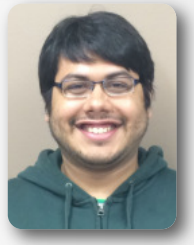


The **Niemi Lab** investigates how mitochondria are built, regulated, and maintained across physiological contexts. We blend biochemistry, systems biology, and physiology to understand mechanisms of mitochondrial regulation and how they influence metabolism and organellar function. Using insights gained 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.

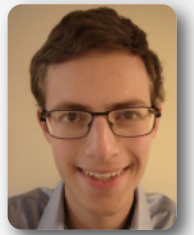
See more research:
biochem.wustl.edu/spotlight

June Publication






Maxwell I. Zimmerman, **Justin R. Porter**, **Michael D. Ward**, **Sukrit Singh**, **Neha Vithani**, **Artur Meller**, **Upasana L. Mallimadugula**, **Catherine E. Kuhn**, **Jonathan H. Borowsky**, Rafal P. Wiewiora, Matthew F. D. Hurley, Aoife M. Harbison, Carl A. Fogarty, Joseph E. Coffland, Elisa Fadda, Vincent A. Voelz, John D. Chodera, & **Gregory R. Bowman**

Citizen Scientists Create an Exascale Computer to Combat COVID-19

bioRxiv. 2020.06.27.175430. doi: 10.1101/2020.06.27.175430. (2020)

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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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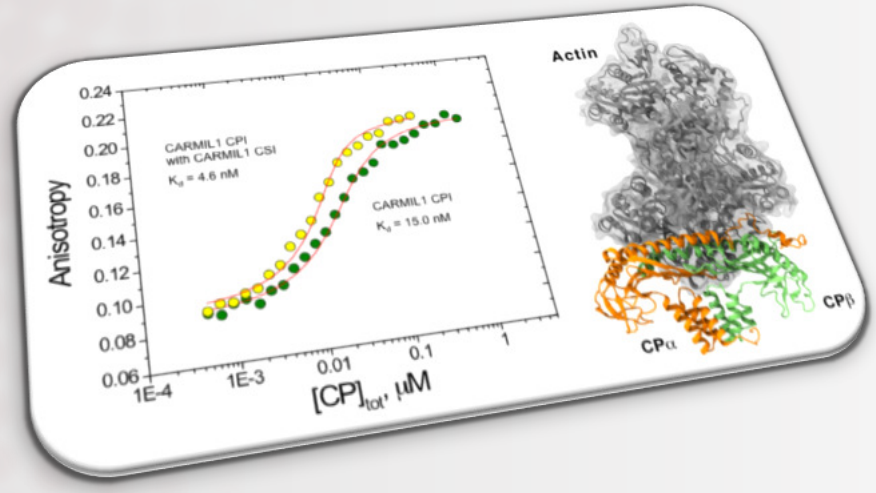
Spotlight on Research



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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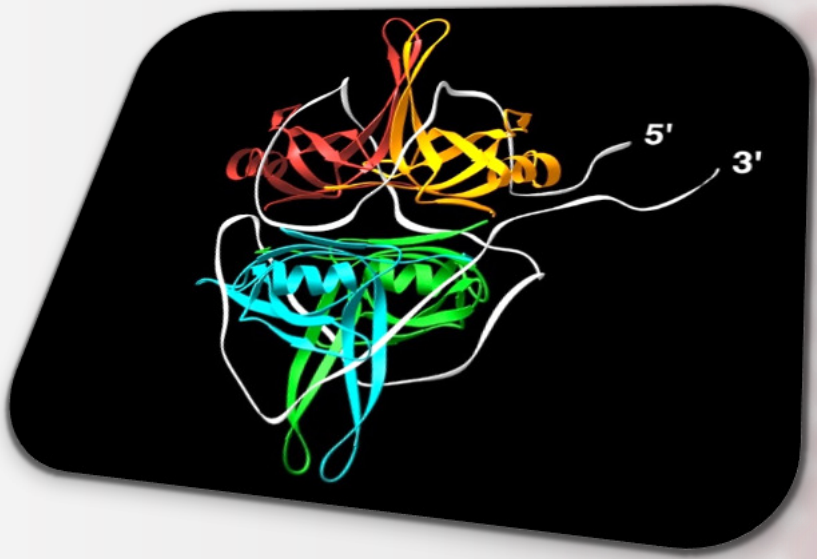
Spotlight on Research

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

July Publication

Rachel Bezalel-Buch, Young K. Cheun, Upasana Roy, Orlando D. Schärer, & **Peter M. Burgers**

Bypass of DNA interstrand crosslinks by a Rev1-DNA polymerase ζ complex

Nucleic Acids Res. gkaa580. doi: 10.1093/nar/gkaa580. (2020)

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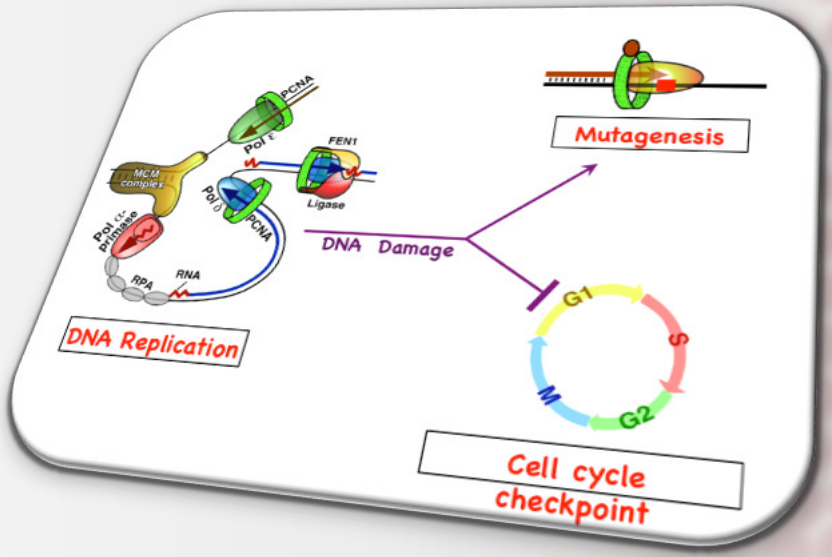
Congratulations to Dr. Frieden

August 21st, 2020 – **Carl Frieden, PhD**, Professor of Biochemistry and Molecular Biophysics, received a new one year grant award from BrightFocus Foundation for his research entitled ***"Understanding apoE"***.

Spotlight on Research

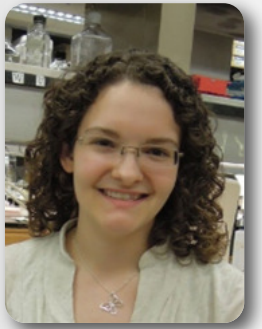
The **Burgers Lab** studies DNA replication and DNA damage response in eukaryotic cells. Using yeast as a model organism, the lab integrates the biochemical analysis of DNA-protein interactions in purified model systems with the genetic analysis of targeted yeast mutants. Specific areas of interest are 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:
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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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

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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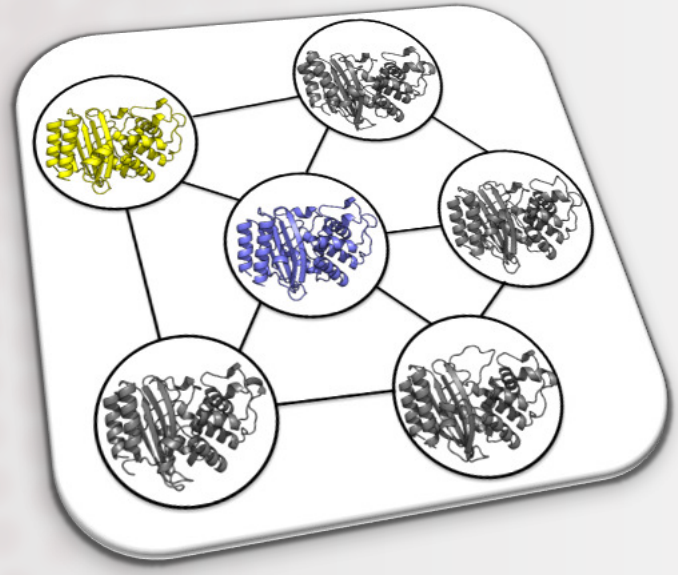
Dr. Bowman Featured in The Source

June 25th, 2020 - The work by **Dr. Greg Bowman** on the *Folding@home* project and COVID-19 research was recently featured in *The Source*.

You can visit
biochem.wustl.edu/news
for a link to the article!

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:
biochem.wustl.edu/spotlight

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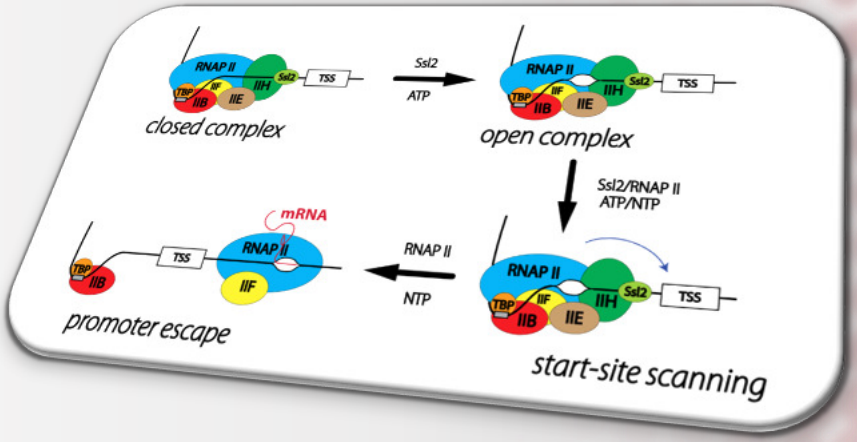
Spotlight on Research

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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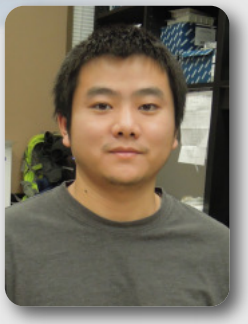
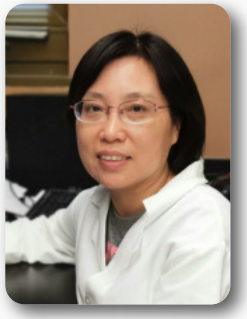
Holiday Schedule

Holiday	Day	Date Observed at WU
Independence Day	Friday	July 3rd, 2020
Labor Day	Monday	September 7th, 2020
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

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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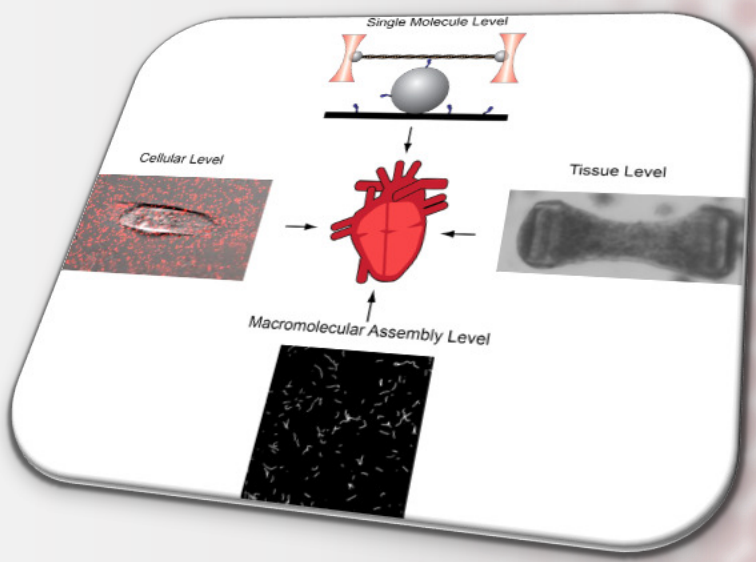
Spotlight on Research

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.



See more research:
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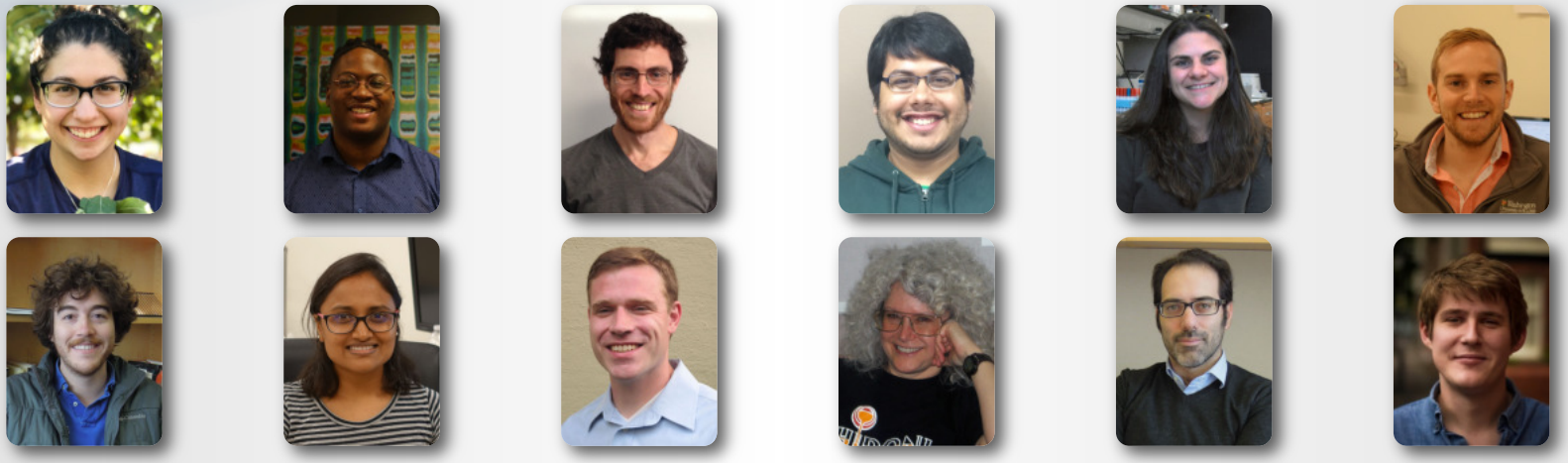
Don’t forget your keys!

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

June Publication



Jasmine Cubuk, **Jhullian J. Alston**, **J. Jeremías Incicco**, **Sukrit Singh**, **Melissa D. Stuchell-Brereton**, **Michael D. Ward**, **Maxwell I. Zimmerman**, **Neha Vithani**, Daniel Griffith, Jason A. Wagoner, **Gregory R. Bowman**, **Kathleen B. Hall**, **Andrea Soranno**, & **Alex S. Holehouse**.

The SARS-CoV-2 nucleocapsid protein is dynamic, disordered, and phase separates with RNA

bioRxiv. 2020.06.17.158121. doi: 10.1101/2020.06.17.158121. (2020)

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