

BIOCHEMISTRY

@ IOWA

Fall 2019

MESSAGE FROM THE HEAD

Dear Friends of Iowa Biochemistry,

One of the ways in which biochemistry has changed over the years relates to data analysis.

When many of us were in graduate school, if there wasn't a several-fold change in something, our bosses were not particularly interested. Things we could measure accurately, such as second order rates of enzymatic catalysis, vary from the thousands to the tens of millions in units of $s^{-1}M^{-1}$ while things we could not measure with much precision, such as autoradiographic Western blot intensities, had dynamic ranges in the linear range of maybe one $\log_{(10)}$. Thus, we were generally trained not to get excited by 10% differences in magnitudes. Basically, our bosses would tell us that if we did not have a 2 to 5-fold effect size, we were merely in the weeds looking at noise.

Biologically important differences reveal themselves through phenotype. While in some cases, a system may be buffered and allow a great deal of variability without consequence, in other cases, effect sizes of a few percent can be life or death. In the innumerable cases in which important biological effects are mediated by small differences in rates, stabilities and gene expression, tools needed to be developed to quantify these differences.

Generally speaking, as effect sizes get smaller, we need more observations to measure them and we therefore need analysis tools to know whether we are in the weeds looking at noise or whether we have a reproducible effect.

Ten years ago, when we put out word that our faculty was ready to expand, we knew that we would evolve as a department but we did not know what new research and educational paths we would take. This year, thanks to the initiative of Miles Pufall, we will begin to offer BIOC 3310, Practical Data Science & Bioinformatics, to advanced undergraduates and graduate students. Our students will learn the language of coding and data analysis, be introduced to statistical methods that enable extraction of quantitative inferences from large numbers of observations, and learn to find and mine publicly available data to answer their own mechanistic questions.

I predict that I will not be the only faculty member who wants to take this course and that we will upgrade our students' training and our research programs very substantively by training in the use of big data.

Best,



CHARLES BRENNER, PHD
ROY J. CARVER CHAIR &
HEAD OF BIOCHEMISTRY

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FACULTY HONORS



Brandon Davies was selected as a **Junior Associate Editor of the Journal of Lipid Research**, one of four junior faculty members world-wide. Dr. Davies is part of the first cohort nominated by the journal's associate editors. Dr. Davies was chosen on the basis of his outstanding contributions to the field and

in anticipation of his future impact in lipid biochemistry and physiology. Dr. Davies was also the recipient of the Journal of Lipids Research Junior Investigator Award in 2017 and is currently serving on the Deuel Conference Board.



Pamela Geyer was elected to the **Board of Directors of the Genetics Society of America (GSA)**. Founded in 1931, the GSA is a professional scientific society for scientific researchers and educators in the field of genetics. Dr. Geyer is excited to join the board at this time of rapid paced discoveries in genetics. She brings to the board her long-

standing commitment to training and will continue advancing initiatives to ensure a vibrant, inclusive and diverse network of engaged geneticists. Dr. Geyer is a strong supporter of model organisms and their utility in providing platforms for scientific advances and looks forward to advocating for these communities. She will serve on the board until 2021.



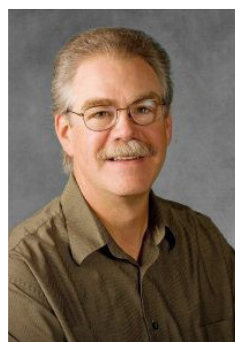
John Dagle was the recipient of the **Leonard Tow Humanism in Medicine Award** presented by the Arnold P. Gold Foundation. The Tow award recognizes those who demonstrate both clinical excellence and compassion in delivery of care and who show respect for patients, their families, and healthcare colleagues.



Madeline Shea was elected as a **Fellow of the American Association for the Advancement of Science**.

Dr. Shea was cited for her distinguished contributions to the field of biochemistry and biophysics, particularly in the role of calmodulin in signal transduction, and for the establishment of innovative educational programs. Dr. Shea is one of two scientists

from the University of Iowa and 416 total elected this year.



David Price received the **2018 Carver College of Medicine Collegiate Teaching Award**.

Since joining Biochemistry in 1989, Dr. Price has taught thousands of undergraduate and graduate students in core courses focused on Biochemistry and Molecular Biology. His teaching has extended to the laboratory, where he has trained a remarkable 125 individuals

whose research has been published in top ranked journals such as *Cell* and *Molecular Cell*.



Lori Wallrath was awarded a **2019 Summer Research Fellowship Outstanding Mentor in Basic Science Research from the Medical Student Research Conference Awards** where she was nominated by Joes L. Rios-Monterrosa, as well as a **2019 Mentoring Award from the University of Iowa Graduate College Summer Research**

Opportunities Program (SROP) for student advising and for her mentorship of undergraduate Misty Perez, from Whittier College. The UI Summer Research Opportunities program is the biggest in the BIG 10 and is designed to provide underrepresented undergraduate students with experience in research. During this program, students receive first-hand exposure to graduate school and faculty life.

FACULTY HONORS



Michael Schnieders is serving as **Harrington Faculty Fellow at UT Austin** for a sabbatical during the current academic year.

Dr. Schnieders is working in the lab of Prof. Pengyu Ren in the Department of Biomedical Engineering on advanced computational molecular biophysics algorithms, which are being applied to understand the genetic basis of deafness and rare renal diseases. These NIH funded projects are a collaboration with Dr. Richard J. Smith in the University of Iowa Department of Otolaryngology. Former Biochemistry PhD student Jacob Litman is also in Austin performing a postdoctoral fellowship under the joint mentorship of Ren and Schnieders. University of Iowa graduate students Rae Corrigan, Mallory Tollefson and Hernan Bernabe have also joined Schnieders in Austin to continue working toward completion of their dissertations.

RETREAT HIGHLIGHTS



Left to right
Top Row: Julio Sanchez, Chris Ball
Bottom Row: Colleen Caldwell, Shivangi Inamdar,
Margaret Ketterer, Rebecca Cupp.

The Biochemistry Department held its 10th Annual Scientific Retreat at the Old Capitol Center on August 24, 2019. Keynote speaker Professor Craig Kletzing delivered an energetic talk on the interactions between the Sun and the Earth. Dr. Kletzing has recently been awarded the largest ever research grant in University of Iowa history by NASA to study this connection between the Sun and the Earth and the auroras as well as other phenomena in space.

The retreat consisted of seven oral presentations and twenty-four posters from faculty, staff, and students.

Chris Ball (Price Lab) won the best oral presentation in the graduate student/post-doctoral category.

Colleen Caldwell (Maria Spies Lab) won first place and **Julio Sanchez** (Musselman Lab) took second place in the graduate student poster category.

Shivangi Inamdar (Baker Lab) won first place in the post-doctoral fellow poster category.

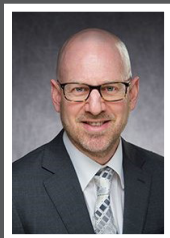
Rebecca Cupp (Geyer Lab) won first place and **Margaret Ketterer** (Wallrath Lab) won second place in the undergraduate/research intern/medical fellow/scientific professional category.

NEWLY AWARDED GRANTS



Sheila Baker

Elucidating the Molecular Pathogenesis of Cone Dystrophy with Supernormal Rod Response
Foundation Fighting Blindness
2019-2022

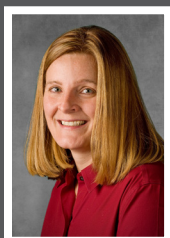


Charles Brenner

Multi-PI with Drs. Barry London, Kaikobad Irani
Evaluating NAD Supplementation as a Novel Treatment for Arrhythmias
National Institutes of Health R01
2019-2023

Testing NAD Precursors as Galactagogues
Bill & Melinda Gates Foundation with Hanna Stevens (Psychiatry)
2019-2020

Evaluating the Oral Bioavailability of NAD Boosters in the Brain
ChromaDex, Inc.
2019-2020



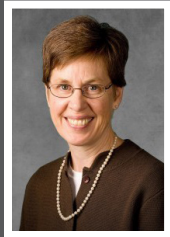
Kris DeMali

Cadherins and Cell Stiffening
National Institutes of Health R01 Equipment Supplement
2019-2020



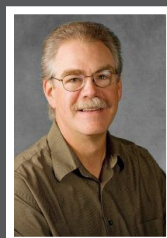
Adrian Elcock

Molecular Simulations of the Cell
National Institutes of Health R35 Equipment Supplement
2018-2019



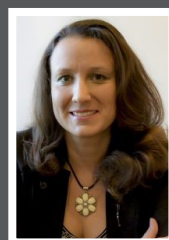
Pamela Geyer

The role of LEM Domain Proteins in Nuclear Function
National Institutes of Health R01, Competitive Renewal
2019-2023



David Price

Mechanisms Regulating Cytomegalovirus
US Department of Veterans Affairs, Iowa City Veterans Affairs Medical Center, VA Merit Award with Dr. Jeffery Meier (Internal Medicine)
2019-2020



Maria Spies

The Role of Human RAD52 Protein in Genome Stability
National Institutes of Health Multi-PI R01 with Dr. Anna Malkova (Biology) and Dr. Pietro Pichierri, Istituto Superiore di Sanita: Collaborators include Todd Washington and Ashley Spies
2019-2024

Assembly and Dynamics of Molecular Machines in Genome Maintenance
National Institutes of Health R35
2019-2024

Modulating Cancer Genetics for Immune Regulation and Breast Cancer Therapy
Department of Defense office of the Congressionally Directed Medical Research Programs
2018-2022

ISGC Collaboration: Analyzing Paleo-Enzymology Data of Homologous Genetic Recombination
Subaward with Iowa State University, Iowa Space Grant Consortium NASA
2018-2019

Regulation of Unwinding and Remodeling Activities in FeS-DNA Helicases
National Institutes of Health R01 Equipment Supplement
2018-2019

GRANTS, CONTINUED



Ashley Spies
Exploiting Enzyme Plasticity in Drug Discovery: Application to Glutamate Racemase
National Institutes of Health
R01 Equipment Supplement
2018-2019



Eric Taylor
Determination of PXL Compound Mitochondrial Pyruvate Carrier IC50 Values
POXEL
2019-2020

Fenoldopam to Prevent Renal Dysfunction in Indomethacin Treated Pre-term Infants
National Institutes of Health R21 with Dr. John Dagle (Pediatrics)
2018-2020



Eric Taylor (continued)
Cirius Therapeutics, Inc.
2019-2020

Lori Wallrath
Mechanisms of TMEM43 Muscle Diseases
The Undiagnosed Diseases Network (UDN), National Institutes of Health Common Fund, Subaward with Harvard Medical School
2019-2020



Todd Washington
Mechanisms of Damaged DNA Replication in Eukaryotes
National Institutes of Health
R01 Equipment Supplement
2018-2019

FACULTY PROMOTIONS AND UPDATES



Brandon Davies has been promoted to **Associate Professor of Biochemistry**. Dr. Davies began working in the Department as Assistant Professor in 2012. Dr. Davies received his PhD in Molecular and Cell Biology from University of California, Berkeley and completed a post doctoral fellowship in cardiology at the University of California, Los Angeles. The primary focus of the Davies laboratory is on regulation of triglyceride-rich lipoprotein metabolism and fatty acid partitioning.

The department had a bittersweet event on July 11th to honor **Catherine Musselman**, who was recruited here in August 2013 was promoted to Associate Professor of Biochemistry with tenure in July 2019, but has accepted a position at University of Colorado Denver, Anschutz Medical Campus as an Associate Professor of Biochemistry. We are sad to see her go, but remain enthusiastic supporters of her work on the structural and dynamic basis of chromatin modifications in gene regulation.



GRADUATE STUDENT NEWS



Colleen Caldwell (Maria Spies Laboratory) was co-first author of a paper featured on the cover of the February 2019 issue of *Nature Structural & Molecular Biology*. Entitled, “*Dynamics and selective remodeling of the DNA-binding domains of RPA*” the article was the product of a collaboration between

the laboratories of Professors Marc Wold, Maria Spies, and Edwin Antony (Marquette University). It describes biochemistry and single-molecule studies that characterized the conformational dynamics of individual domains of Replication Protein A (RPA). RPA binds to single-stranded DNA and is essential for the replication and repair of DNA. This paper shows that individual domains of RPA rapidly bind and dissociate from DNA and that these dynamic interactions are modulated when RPA interacts with partner proteins. These studies suggest that remodeling of the RPA complex directs the proper processing of different single-stranded DNA intermediates in the cell.



Hannah Campbell (DeMali Laboratory), was selected as one of nine finalists for The University of Iowa’s Three Minute Thesis competition, which challenges graduate students to clearly and concisely articulate complex research to non-specialist audiences. Hannah was awarded

the People’s Choice Award, selected by audience ballot, for her presentation entitled, “*Cells that work together, stay together.*”



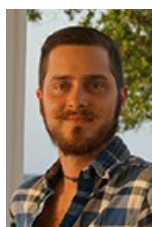
Lalita Oonthonpan (Taylor Laboratory), was first author of a paper published in *The Journal of Clinical Investigation Insight*. Her paper, entitled “*Two human patient mitochondrial pyruvate carrier mutations reveal distinct molecular mechanisms of dysfunction*” describes research

on the functions of mutant Mitochondrial Pyruvate Carrier (MPC) proteins.



Tyler Weaver, a co awardee (Musselman Laboratory) was awarded the 2019 Subramanian Award for best PhD thesis in the Department of Biochemistry. The Subramanian Award is made possible by a gift from Dr. Alap Subramanian, a 1964 PhD student from the department, who parlayed his training with the late

George Kalnitsky (and with Irving Klotz at Northwestern and both Bernard Davis and Herman Kalckar at Harvard Medical School), into a highly successful career at the Max-Planck-Institute. Dr. Weaver’s thesis was entitled “*Regulation of Polycomb repressive complexes by histone reader domains.*” Tyler received his PhD in May 2019 and is currently a post doc at the University of Kansas Medical Center with Dr. Bret Freudenthal, a product of the Washington laboratory.



Kyle Powers, a co awardee (Washington Laboratory) was also awarded the 2019 Subramanian Award for the best PhD thesis in the Department of Biochemistry. Dr. Powers’ thesis was entitled “*Structure and Function of the Disordered Tails in Translation Synthesis DNA polymerases.*” Kyle received his PhD

in December 2018 and is currently a post doc with Dr. Christiane Berger-Schaffitzel’s lab at the University of Bristol, United Kingdom.



Michael Hayes (Weeks Laboratory) received the 2019 Marion Dave Francis Innovator Award, which recognizes a PhD student whose research has demonstrated their singular personal initiative, creativity, and resulting continuous discovery.

His work will allow us to better understand what goes wrong when toxic aggregates are formed in diseases like Alzheimer’s or Huntington’s. His thesis work resulted in two first author publications, a *Biology Open* article published in 2016 and a second publication in *eLife* in 2018. Michael is currently a surgical resident at the University of Iowa.



RECENT GRADUATES

Tyler Weaver (Musselman Laboratory)

Spring 2019 PhD

Postdoctoral Researcher with Dr. Bret Freudenthal
University of Kansas Medical Center, Kansas City,
KS

Jacob Litman (Schnieders Laboratory)

Spring 2019 PhD

Postdoctoral Researcher with Dr. Michael
Schnieders
Biomedical Engineering Department, University of
Texas at Austin, Austin, TX

Young Joo Sun (Fuentes Laboratory)

Spring 2019 PhD

Postdoctoral Researcher with Dr. Vinit Mahajan
Stanford University Medical Center, Palo Alto, CA

Hannah Campbell (DeMali Laboratory)

Summer 2019 PhD

Scientific Applications Specialist
Integrated DNA Technologies, Coralville, IA

Lalita Oonthonpan (Taylor Laboratory)

Summer 2019 PhD

Scientist
Comet Therapeutics, Cambridge, MA

Wesley Lay (Elcock Laboratory)

Fall 2018 PhD

Bioinformatics Scientist
Immortagen Inc.

Arpit Sharma (Taylor Laboratory)

Fall 2018 PhD

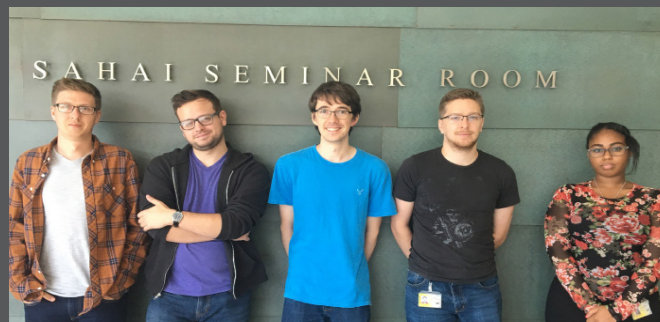
Postdoctoral Researcher with Dr. William Mair
Harvard School of Public Health, Boston, MA

Kyle Powers (Washington Laboratory)

Fall 2018 PhD

Postdoctoral Researcher with Dr. Christiane
Berger-Schaffitzel
University of Bristol, United Kingdom

NEW PHD CANDIDATES



Please welcome our latest group of graduate students!

Nicholas Cronin, James McIntyre, Alexander Glebov-McCloud, Zachary Frevert, Diamond Jelani

15TH ANNUAL GENE F. LATA UNDERGRADUATE RESEARCH SYMPOSIUM



(Front row – left to right): Ariel Kopel, Samantha Mackin, Ashley Segura-Roman, Irini Petros (back row – left to right): Samuel Cole Kitzman, Derek Metzger, Andrew Henry, Lucas Maakestad, Sophia Vogeler

This year marks the fifteenth year for the Gene F. Lata Undergraduate Research Symposium. Eleven students presented at this year's program.

Jesse Cochran (Abel laboratory, Internal Medicine) presented on “*Sex Differences in the Response of C57BL/6 Mice to Ketogenic Diets.*” After graduation, Jesse plans to apply for MD/PhD programs for the 2020-21 cycle.

Andrew Henry (Henry laboratory, Molecular Physiology and Biophysics) presented on “*Influence of CFTR on Linoleic Acid Metabolism.*” After graduation, Andrew plans to seek employment for a year or two while preparing to apply to medical school.

Samuel (Cole) Kitzman (Geyer laboratory, Biochemistry) presented on “*Modeling a premature aging syndrome by a mutant form of Barrier-to-auto integration Factor (BAF) in Drosophila.*” After graduation, Cole plans to continue his work in Dr. Geyer's laboratory over the summer and attend medical school in Fall 2020.

Ariel Kopel (Baker laboratory, Biochemistry) presented on “*The Role of Synaptic Calcium Channels in Cone Photoreceptors.*” After graduation, Ariel plans to take a 1-2 gap year to work in a research laboratory and then apply to the Biochemistry PhD program.

Lucas Maakestad (Washington laboratory, Biochemistry) presented on “*Over expression and Purification of the Fork-Remodeling Enzyme Rad5.*” After graduation, Lucas plans to attend medical school at the University of Iowa

Samantha Mackin (DeMali laboratory, Biochemistry) presented on “*Identifying Mechanisms Coupling Cell Metabolism to Force Transmission.*” After graduation, Samantha plans to work as a research assistant in Dr. Perlman's lab at the University of Iowa.

Ian McElree (Wu lab, Biology) presented on “*Exploration of the *rosA* Oscillatory ERG Phenotype in *Drosophila.*” After graduation, Ian plans to attend a master's program in Medical Physiology in the fall.*

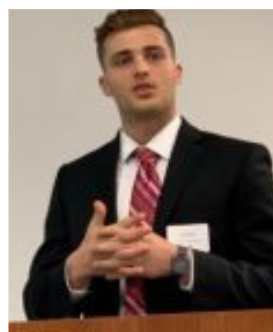
Derek Metzger (Davies laboratory, Biochemistry) presented on “*Functional Analysis of Human ANGPTL3 Mutants.*” After graduation, Derek plans to stay in Iowa City for a gap year while applying to medical schools. He will continue his employment at Mercy Hospital during that time and likely seek additional employment and spend more time volunteering.

Irini Petros (Weeks laboratory, Biochemistry) presented on “*Protein Aggregates in Different Sub nucleolar Compartments in *Xenopus laevis.*” After graduation, Irini plans to continue doing research in Dr. Weeks' lab as a post-bac and apply to medical school.*

Ashley Segura-Roman (Davies laboratory, Biochemistry) presented on “*Endothelial Lipase Regulation by ANGPTL3.*” After graduation, Ashley plans to enter the PhD program at UC Berkeley, Molecular and Cell Biology program.

Sophia Vogeler (Brenner laboratory, Biochemistry) presented on “*Evaluating the Efficacy of NAD Precursors in Treating Hyperphagia.*” After graduation, Sophia plans to take the patent bar exam and attend law school at the University of Minnesota.

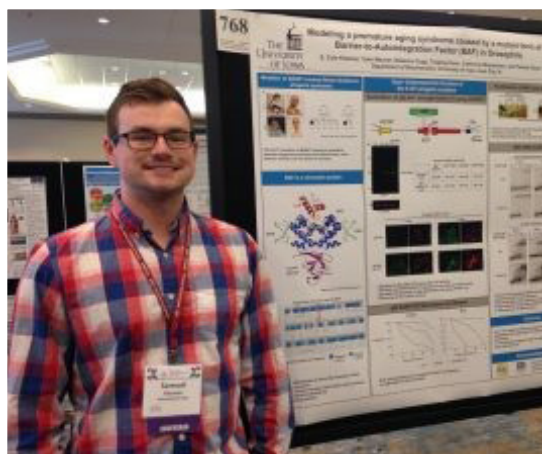
The symposium also included the presentation of two undergraduate awards made possible by a gift from Alap Subramanian. **Derek Metzger** (Davies laboratory, Biochemistry) received the H.G. Wittmann Scholar Award and **Sophia Vogeler** (Brenner laboratory, Biochemistry) received the H.G. Khorana Scholar Award. These awards recognize their exceptional understanding of biochemistry and its value to society.



(Left) Ian McElree, (right) Jesse Cochran



UNDERGRADUATE SPOTLIGHT



Pictured above: Cole Kitzman

Cole Kitzman (Geyer laboratory), a Biochemistry and Pre-Medicine major, received the **Ishan Jain Travel award**. This award is presented to an undergraduate student performing research in a lab associated with the Cell and Developmental Biology Program at the University of Iowa. Cole used these funds to travel to the 60th Annual Drosophila Research Conference March 27-31 in Dallas, TX and present a poster entitled, *“Modeling a premature aging syndrome caused by a mutant form of Barrier-to-Autointegration Factor (BAF) in Drosophila”*.

Guowei Qi, (Schnieders lab) a Biochemistry student, has been named a **2019 Goldwater Scholar**. Guowei is currently researching protein side optimization. Guowei is a member of the University of Iowa Honors Program, the Presidential Scholar community, UI Student Government, and the UI Environmental Coalition. He has also recently served on the 2018 CLAS Dean Search Committee and is an Iowa Center for Research by Undergraduates (ICRU) Ambassador.

Samantha Makin (DeMali lab) and **Ian McElree** (Wu lab, Biology) are undergraduates in the Department of Biology. They have been awarded **2019 Montgomery Biochemistry Scholar’s Prizes** for their outstanding research accomplishments and excellent presentations at the Lata Symposium.

Ashley Segura-Roman (Davies lab) was named the recipient of the **Joseph E. and Ursil I. Callen Prize** for an outstanding senior in the College of Liberal Arts and Sciences for the academic year 2019-2020. The award is given to a University of Iowa senior in the College of Liberal Arts and Sciences who shows a high academic record and evidence of school and/or civic leadership.

Kinsey Gudenkauf (Shaws laboratory, Chemistry), **Jade Miller** (Maria Spies laboratory), and **Francesca Spencer** (Weeks Laboratory) were awarded **2019 Rex Montgomery Scholarship Awards** for their outstanding academic record and commitment to research.

BIOCHEMISTRY DEPARTMENT OUTREACH

FUTURE IN BIOMEDICINE

[Fostering Undergraduate Talent - Uniting Research and Education]

The 11th annual FUTURE (Fostering Undergraduate Talent - Uniting Research and Education) in Biomedicine program, directed by Madeline Shea, was held in 2019. FUTURE develops research and learning partnerships with professors from primarily undergraduate Iowa colleges. Pairs of faculty and students from throughout the state join in the Carver College of Medicine to conduct research and learn about opportunities from biomedical training, and professional careers.

In 2019 the FUTURE program brought seven Faculty Fellows and nine student research assistants to collaborate with the UI faculty.

Professor Lori Wallrath and prior FUTURE Fellows Gary Coombs from Waldorf University and Laura Hecker from Clarke University talked about their research consortium, and the Iowa Laminopathy Summit that Dr. Wallrath organized in the spring of 2019 to share new findings from all three laboratories. Professor Maria Spies hosted Senior Fellow Ali Tabei from the University of Northern Iowa and his student Mary Sutton for the summer. Drs. Tabei and Spies were awarded a collaborative grant from the Iowa Space Grant Consortium recently.



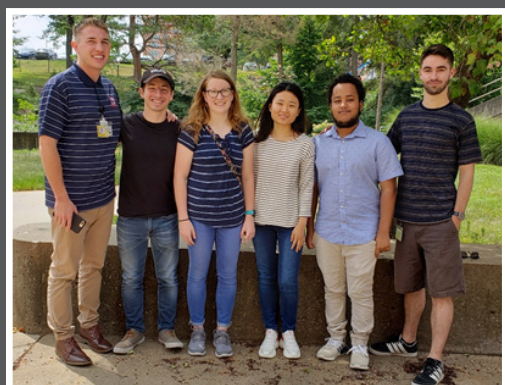
2019 FUTURE program participants



Alumnus Keith Bryan (Rubenstein laboratory PhD, now a scientist at IDT) talked to participants about their career paths in the private sector at this year's FUTURE event

BSURF

[Biochemistry Summer Undergraduate Research Fellowship]



From L to R: Landen Broadhead, Mike Thomas, Rachel Rethwisch, Ji Hyeon Cha, Imad Isehak, Andrew Sullivan. Not shown: Martin Yepes

BSURF, directed by **Peter Rubenstein**, is an opportunity for undergraduate students outside the University of Iowa to gain hands-on experience in an active research laboratory under the direction of an established scientist. Four BSURF students conducted research in Biochemistry labs this summer and presented their research at the Summer Undergraduate Research Conference, sponsored by the Graduate College. Landen Broadhead from Southern Utah University worked with **Brandon Davies**, Imad Isehak from Minnesota State University-Mankato worked with **Madeline Shea**, Rachel Rethwisch from Coe College worked with **Sheila Baker**, and Martin Yepes with St. Mary's College of Maryland worked with **Maria Spies**. Also joining in the BSURF activities were two students from Butler University, Mike Thomas and Ji Hyeon Cha, who were summer research interns with **Miles Pufall's** NSF CAREER grant. Another summer student who participated in BSURF-related activities is Andrew Sullivan from St. Olaf College, who worked with **Lokesh Gakhar**.

ALUMNI ACCOMPLISHMENTS



Juanita Lima was featured on the University of North Carolina at Chapel Hill (UNC) home page. The article entitled, "*Inspiring the Next Generation-Women in STEM*" describes the research that women are performing at UNC and how they are inspiring the

next generation of researchers. Juanita graduated from the University of Iowa Biochemistry undergraduate program in 1999 and performed research in the laboratory of Dr. Lori Wallrath. Juanita is currently researching cell cycle control in cancer in the laboratory of Dr. Jean Cook at the University of North Carolina. She was also recently awarded a prestigious HHMI Gilliam Fellowship.



Liskin Swint-Kruse, a PhD graduate with Dr. Andrew Robertson, has been named Chair of Biochemistry and Molecular Biology at the University of Kansas Medical Center (KUMC) where she had been serving as Interim Chair since last fall. Executive

Vice Chancellor at KUMC, Dr. Robert D. Simari, wrote "Over the past eight months, her leadership in both the department and the school of medicine has been commendable. In addition to her many leadership roles, Dr. Swint-Kruse remains actively engaged in teaching in the ACE curriculum. She maintains a successful and well-funded research program focusing on ways to improve genomics-based diagnoses for personalized medicine.



Bryan Allen, a MD, PhD graduate from Dr. Daniel Weeks lab, was selected as the recipient of the J.W. Osborne Award presented by the Radiation Research Society.

Dr. Bryan Allen is currently an Associate Professor and physician scientist in the Department of Radiation Oncology at the University of Iowa Hospitals and Clinics. The J.W. Osborne Award honors an RRS member who has made a critical contribution to the understanding of normal tissue radiation responses.



Lacy Barton, a PhD graduate from Dr., Pamela Geyer's Lab, has been recently featured in a video produced by the Damon Runyon Cancer Research Foundation. This video highlights women in science and Dr. Barton's current

research. She is currently a Damon Runyon Postdoctoral Fellow at the Skirball Institute at the New York University School of Medicine.



Dr. Arpit Sharma, a PhD graduate with Dr. Eric Taylor, is the first author on a paper published in *eLife*. The paper is entitled, "*Impaired skeletal muscle mitochondrial pyruvate uptake rewires glucose metabolism to drive whole-body leanness.*"

This manuscript explains how muscle-specific Mitochondrial Pyruvate Carrier (MPC) deletion in mice drives increased Cori cycling and fatty-acid oxidation that contribute to increased energy expenditure. This increased energy expenditure leads to strikingly decreased fat mass with complete muscle mass and strength retention in mice. These findings raise the possibility that modulating skeletal muscle pyruvate metabolism in obese and type 2 diabetes patients may aid fat mass loss and improvement of whole-body insulin sensitivity.

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