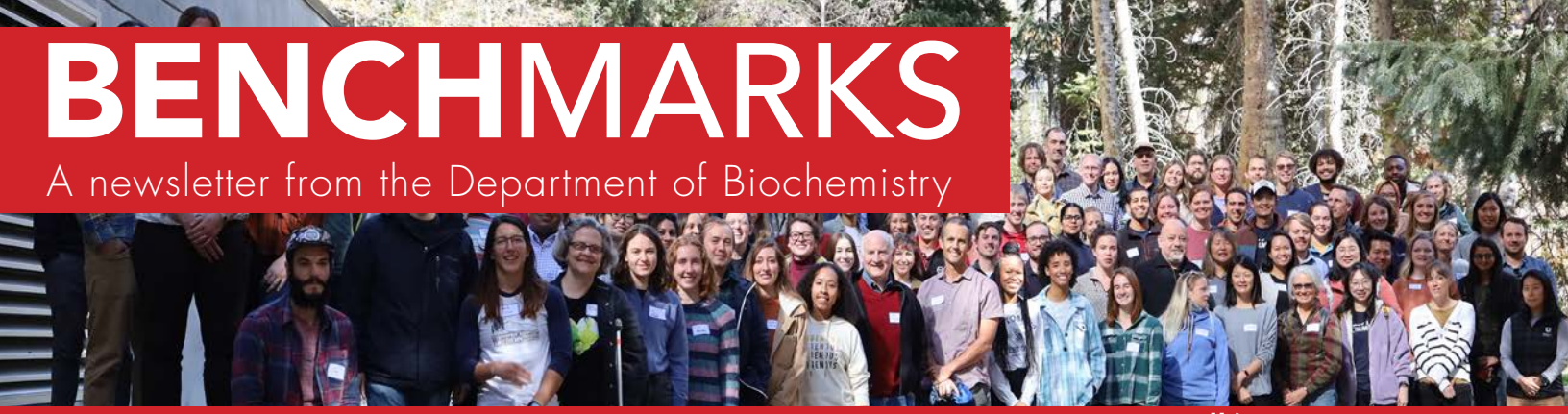
BENCHMARKS

A newsletter from the Department of Biochemistry



Fall/Winter 2022-2023

THE TIMES THEY ARE A-CHANGIN' Chair's Message from Wes Sundquist

Einstein famously observed that "The measure of intelligence is the ability to change". In that vein, we're currently putting our intelligence to the test by attempting to overhaul how we deliver graduate and medical education. These changes are undertaken with the goal of aligning the programs better with our understanding that education is most effective when it includes active participation, self-direction, and hands-on experience. Participatory learning is hardly a new concept – almost 2400 years ago Aristotle said: "For the things we have to learn before we can do them, we learn by doing them" - but the rationale for experiential learning is stronger than ever, as is the evidence that it produces better outcomes than strict didactic teaching.

This past fall, we rolled out new curricula for our Interdepartmental Graduate Programs in Biological Chemistry (BCP) and Molecular Biology (MBP). By all accounts they're both off to great starts. The new BCP and MBP curricula provide students with more opportunities to tailor their own educational paths by choosing from a broader range of topical "selectives" and advanced "electives" that provide deeper dives into different subdisciplines of biomedical research. To make room for these expanded choices, we have reduced our general course requirements. Nevertheless, each program has created a new "Foundations" course designed to help students master the fundamental content and capabilities required for success in biomedical research, while building skills in reading primary literature and asking the next question. Students prepare for class sessions by reading and watching recorded lectures, which frees up class time for small-group discussions of how this information can be applied to interpret data, solve scientific problems, and understand the primary literature. Not everything has changed, however, as we have retained our successful first year coursework in Research Ethics, Critical Thinking in Research, and Guided Proposal Preparation, as well as the year-end, proposal-based Capstone exam.

Students in the new Foundations of Molecular Biology course work together to create a model of protein regulation.

As always, Biochemistry department members are participating broadly and performing a number of important roles. Of particular note, our award-winning educator, Janet Lindsley, created and co-directed the new MBP Foundations course (with Scott Hale), which follows a team-based learning format. Students loved both the course and Janet, with 90% saying they would recommend the course to others and 96% saying they'd recommend Janet as an instructor. Other department faculty members who helped lead this course included Julia Brasch, Tim Formosa, Adam Hughes, and Minna Roh-Johnson. Importantly, several current Biochemistry graduate students and postdocs co-led the class, and Julio Fierro Morales, Bernard Scott, and Zach Wilson were all truly excellent in that role. Similarly, Biochemistry faculty members Greg Ducker and Paul Sigala helped lead the BCP Foundations course, and we were delighted when Paul was selected to receive the 2022 University of Utah Award for Leadership in Inclusive Excellence for his many outstanding contributions to inclusive training. Finally, many Biochemistry faculty members are leading focused selectives and electives in their particular areas of expertise. We're excited to learn how well these new curricula help train new biochemists, and how they evolve in response to feedback.

The season of change is upon us, and our medical school curriculum is poised to undergo an even more revolutionary overhaul starting this fall. The goal of this "MedEdMorphosis" effort is to transform medical education into a principle-guided, exceptional learning experience. Four central goals focus on achieving: 1) Anti-racism, diversity, equity, and inclusion, 2) Learning partnerships with providers and health systems, including in rural and underserved areas, 3) Value-driven, science-based, technology-enhanced, exceptional learning experiences, and 4) Flexible, mastery-based advancement to foster professional identity development and ensure readiness for successful careers. The changes are too numerous to detail here, but the guiding principles are similar to those driving our graduate curriculum transformations, including teamwork, continuous quality improvement, respecting and supporting individuals, thinking systematically, and embracing evidence, inquiry, and innovation. Medical students will now have meaningful clinical experiences much earlier, including through student-run clinics, interclass "houses", and integrated, longitudinal second year clerkships. They will also have greater ability to customize their own curricula, particularly in later years. Of particular relevance for us, medical students will be exposed to foundational science content in multiple different contexts, including through complex problem-based learning exercises, advanced integrated science courses, and individualized research projects. Once again, Biochemistry department faculty are helping to lead the way, with Janet Lindsley playing a particularly important role in her capacity as Assistant Dean of Curriculum for the School of Medicine. Tim Formosa is also helping us to reimagine both our

graduate and medical education programs, particularly how we're assessing student progress, and he was recently recognized for his outstanding efforts by selection as one of the five 2022 recipients of the University of Utah Distinguished Teaching Award (featured in our last Benchmarks Newsletter). Amy Hawkins is also playing important roles in creating and facilitating medical student learning opportunities. I would be lying if I didn't admit to some trepidation about how this will all work in practice, but we are clearly starting down the right path and are energized about reinventing medical education.

Physician-scientists bring unique perspectives and capabilities to biomedical research, and they play critical roles helping to bridge the basic and clinical research communities. The challenging dual MD/PhD degree is the traditional training path for physician-scientists, and Biochemistry proudly counts a number of successful MD/PhDs amongst our alumni. Nevertheless, despite heroic efforts from many students, faculty, and administrators over the past 30 years, we have never quite reached the pinnacle of obtaining an NIH-funded Medical Student Training Program (MSTP). That is, until this year's breakthrough when our Department faculty member, Michael Kay, who leads our MD/PhD Program, wrote an MSTP grant that was very highly scored and is expected to be awarded this spring. This prestigious award will fund student stipends and educational programs, put us on par with the very best MD/PhD programs in the country, and usher in a new level of excellence in MD/PhD training at the Spencer Fox Eccles School of Medicine.

We have no more important mission, nor greater privilege, than helping to educate new physicians and scientists for productive careers that bring them personal satisfaction, carry on our legacy, and advance public good. The ever-increasing pace of information acquisition and the need for a more diverse and adaptable biomedical workforce are forcing us rethink how we carry out our educational missions. Today's MD and PhD graduates will need to retool and reinvent themselves multiple times over during the course of their careers, and they can only do that effectively if they leave our programs able to direct their own continuing educations. I am convinced that the dramatic new changes in our PhD, MD, and MD/PhD programs are making great strides toward that goal.

2022 POSTDOCTORAL RISING STARS SYMPOSIUM IN BIOCHEMISTRY AND CELL BIOLOGY

Paul Sigala

2022 Postdoctoral Rising Star speakers and Bil Clemons (2nd from left), the 2022 James and Kathleen McCloskey Bioscience Endowed Lecturer. Photo credit: Paul Sigala

For the past decade, the Department of Biochemistry has organized an annual Rising Stars Symposium. At this event, we invite outstanding postdoctoral fellows from around the country doing exciting work at the broad interfaces of biochemistry and cellular biology to visit our campus and present their work in a 1-2-day symposium focused on them and their science. In most cases, these postdoctoral speakers are within 1-2 years of applying for faculty jobs. Their visit is a low-risk opportunity for them to test the waters, receive constructive feedback on their scientific story, refine their "pitch", and get to know our university community in a manner that builds relationships and exposes them to faculty searches and other scientific opportunities here at Utah. These annual symposia have been enormously successful, increasing our national exposure and resulting in the recruitment of >11 new faculty to the University of Utah, including multiple members of our department. This symposium was paused in 2020 due to the pandemic, but we were able to pivot to a successful virtual symposium in 2021.

This past September 29-30, we were thrilled to return to a 2-day, in-person 2022 Postdoctoral Rising Stars Symposium. This event featured four half-day sessions centered around cell biology and cancer, metabolism, chemical biology, and neurobiology tools. As in prior years, these sessions were jointly planned and hosted with the Departments of Oncological Sciences, Nutrition and Integrative Physiology, Medicinal Chemistry, Neurobiology, and the Diabetes and Metabolism Research Center. In addition to the outstanding science presented by the 23 highly accomplished postdocs at this year's event, we were particularly pleased with the diversity of speakers that included >60% females and 50% individuals from underrepresented backgrounds. As our department grows, it remains an important goal to diversify our faculty so that we can mentor our diverse graduate student body effectively. In alignment with this goal, we are excited that several of the speakers at this year's event will be interviewing for faculty positions at Utah in the coming year.

This symposium was held in conjunction with the James and Kathleen McCloskey Endowed Lecture, which featured distinguished Biochemistry alumnus Dr. Bil Clemons from Caltech as the keynote speaker (see accompanying article). Funding for this event was generously provided by the Burroughs Wellcome Fund, the Senior Vice President for Health Sciences Research Unit, and by the sponsoring departments above. We look forward to another exciting and successful Postdoctoral Rising Stars Symposium on Sept. 28-29, 2023!

Biochemistry's UGiving Day event is coming soon - March 28 and 29, 2023! Our goal is to raise at least $10,000 to establish an emergency support fund to help our trainees to cover unexpected expenses. These funds can make the difference between completing a graduate program or perhaps pausing career goals and aspirations. More details on UGiving Day will be forthcoming, and you can already donate to the starter fund!

BIL CLEMONS PRESENTS THE 2022 JAMES AND KATHLEEN MCCLOSKEY BIOSCIENCE ENDOWED LECTURE

Wes Sundquist

The James and Kathleen McCloskey Bioscience Endowed Lecture is an annual highlight for us. This year was no exception, as we were honored to hear from one of our own – Dr. William "Bil" M. Clemons, Jr. Bil was a graduate student with Venki Ramakrishnan in our department from 1995 – 2000. In 1999, they and their colleagues published the structure of the small subunit of the bacterial ribosome to great fanfare, with Bil as the first author. It was an amazing triumph, and it laid the initial foundation for Venki's 2009 Nobel Prize in Chemistry. After a very successful postdoc at Harvard, Bil started his own lab at Caltech in 2005, where he has been ever since. Important discoveries have continued to flow from his lab, and we were all delighted and proud when Bil was elected to the National Academy of Sciences last spring. Bil and Jim McCloskey knew one another well when Bil was a student here, and it was therefore especially meaningful that Kay McCloskey and her family were able to attend the lecture.

From left to right: Lydia McCloskey, Kay McCloskey, Bil Clemons, Gus McCloskey, Pam Crain, Wes Sundquist, and Chris Hill. Photo credit: Janet Iwasa.

Bil began his lecture by reminding us of the historic societal inequities that have unfairly impeded the progress and recognition of scientists of color, and pointed out that we each have a responsibility to help rectify those injustices. Importantly, such discrimination isn't just a problem that occurred in some distant place, but rather has been ubiquitous, including with tangible local examples. For example, most of us learned for the first time that the initial settlers of our valley by European Americans included slave owners. Bil's comments were an important reminder of the obligation that we all have to help ensure that the injustices of the past don't continue into the future, and that science advances as quickly and fairly as possible by taking advantage of our full talent pool.

Bil also described his laboratory's elegant structure/function studies of the cellular GET (guided entry of TA proteins) pathway. The GET pathway ensures that proteins with single transmembrane sequences located near their C-termini (called "tail-anchored" or TA proteins) traffic to the correct cellular organelle (typically the ER). This is a problem that requires a special dedicated system because, unlike proteins with N-terminal transmembrane helices, TA proteins cannot be made on ER-associated ribosomes and co-translationally inserted into the ER membrane. Bil reviewed several of his lab's important contributions in this area, including defining: 1) how the Get4-Get5 complex mediates the handover of TA substrates from the co-chaperone Sgt2 to the central targeting factor, Get3, and 2) how GET3 uses ATP binding, hydrolysis and release to drive dramatic conformational changes that allow it to bind, deliver, and release client proteins to the correct location. His lecture was a wonderful tour of this remarkable protein chaperoning system.

PAUL SIGALA RECOGNIZED FOR LEADERSHIP IN INCLUSIVE EXCELLENCE

Shai-anne Nalder

I was first introduced to Dr. Paul Sigala through the Native American Research Internship (NARI) in the summer of 2017 when I began working as an intern in his lab. He was an incredible mentor who fostered my love for science and the first person who made me believe that science was something I could be successful in and pursue as a career. As a NARI intern, I came into Paul's laboratory having essentially no experience in biochemistry, and he personally took the time to walk me through basic lab techniques, explain scientific literature and critical thinking, and he continuously checked in with me to see how he could help me. I believe the support he showed during this time was seminal in the development of my confidence as a scientist, particularly as I come from an underrepresented background and haven't had as many scientific role models as others. I still remember calling him Dr. Sigala, and his insistence that I stop because he considered us colleagues. When my NARI internship concluded, Paul offered me a job working in his laboratory as a lab technician for the next two years while I prepared for graduate school.

I am now a third-year graduate student in Paul's laboratory and have seen that his support reaches far beyond individual members of his lab. Paul is passionately dedicated to enhancing diversity in science, and he displays this dedication through his involvement in recruiting for the Bioscience PhD program, serving as faculty co-advisor for the Utah SACNAS chapter, and serving as Director of Equity, Diversity, and Inclusion in the Biochemistry department.

Paul Sigala receiving the 2022 Leadership in Inclusive Excellence Award. From left to right: Mike Good, Paul Sigala, and José Rodríguez. Photo credit: Jeanette Ducut-Sigala.

Paul was recently awarded the 2022 University of Utah Leadership in Inclusive Excellence award. I really could not imagine a more fitting person for this award. Paul is routinely identifying ways to increase diversity and inclusivity within our community. While serving as Co-chair of Recruitment for the Bioscience PhD program, he advocated with other faculty, staff, and students for increasing the diversity of our PhD student body. The success of his efforts is exemplified in the incoming student demographics, with >30% of US domestic PhD students being from underrepresented backgrounds over the past five years. His dedication does not stop at increasing diversity. As co-chair of our SACNAS chapter, he has fostered and supported numerous student-led initatives to support underrepresented students. This effort has not gone unnoticed; our SACNAS chapter was recognized in 2022 as one of seven (out of 133) national chapters for the "Chapter of the Year" recognition. Furthermore, his efforts to expand cultural awareness, equity, and inclusion are shown through his organization of a department-wide discussion series centered around inequalities in science and the challenges diverse students face on their scientific journey. I recently joined this group in hopes of expanding the discussions into something actionable for the larger community, and Paul has been fully supportive of the ideas that I and others have expressed to expand our outreach. You might be thinking at this point, "Wow! Paul really has done so much for our students!" and you would be right. But his efforts do not stop at the student level. In the Fall of 2022 he was a lead organizer for the Rising Stars Postdoc Symposium with a goal to support the recruitment of diverse faculty. Additionally, he co-chaired the departmental faculty search committee and advocated for applicants to use part of their chalk talk to discuss their past contributions and future efforts to support equity, diversity, and inclusion.

I would like to thank Paul for taking a chance on me as an intern and helping to create a safe space for diversity, equity, and inclusion within our department, and congratulate him for his well-deserved recognition as a leader in inclusive excellence.

THE ARNOLD AND MABEL BECKMAN CENTER FOR CRYO-EM

Alina Guo, Onyeka Obidi, and Julia Brasch

Views of the Titan Krios installed at the Arnold and Mabel Beckman Center for Cryo-EM (Check out the video from which these images were taken).

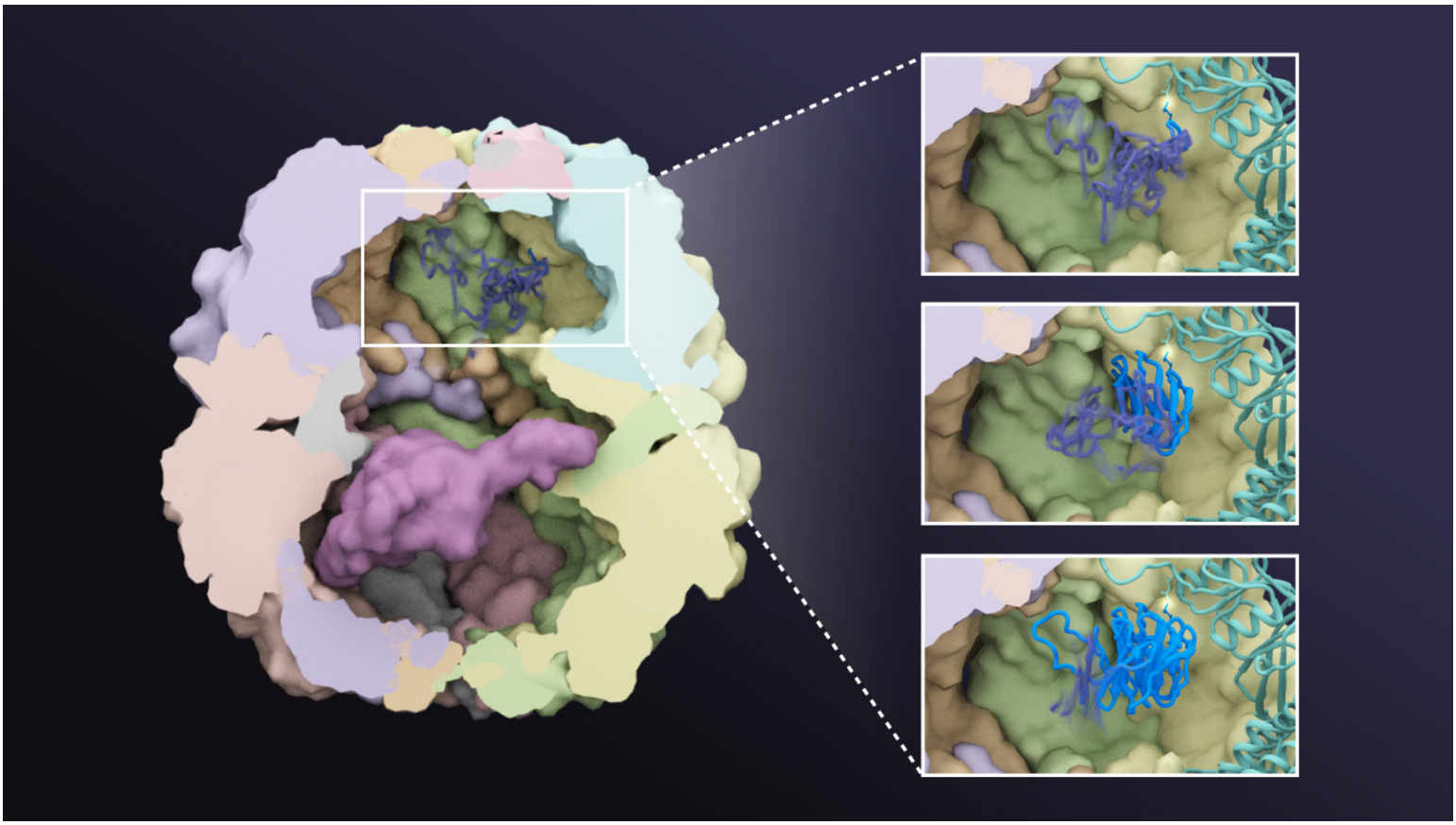
Cryogenic electron microscopy (cryo-EM) enables scientists to visualize macromolecular structures at high resolution, ultimately revealing how proteins and molecular machines function – often down to the position of atoms. Typically, images of hundreds of thousands of particles need to be collected on an electron microscope to produce these 3D reconstructions. Generous funding from the Beckman Foundation enabled us to obtain a state-of-the-art electron microscope, the Titan Krios, and establish the Arnold and Mabel Beckman Center for Cryo-EM at the University of Utah. Our user base has grown quickly to include users from labs across our campus, as well as universities across the state and country. Since installation in 2018, Utah investigators have published more than 20 papers describing novel and impactful structures. For example, in the Hill Lab, the Beckman Center has enabled researchers to determine the structure of a fast-acting snail insulin in complex with the insulin receptor, providing insights into the molecular basis for its unique properties that could ultimately lead to improved diabetes therapeutics. The Cao Lab visualized the interactions between diuretic drugs like bumetanide and their highly dynamic receptor protein, NKCC1, while the Shen lab was able to propose a model of how the segregase protein complex Cdc48 mechanistically functions in protein unfolding and degradation. Research performed in the Sundquist, Shen, and Hill labs has shed light on the structure of Vps4 AAA ATPases that act in the ESCRT-III pathway. The Brasch lab uses the Beckman Center's equipment to directly visualize protein complexes and their assemblies at neuronal synapses using cryo-electron tomography in vitro and in situ, which allows proteins to be studied in their native environment. We would also like to give the warmest welcome to Dr. Owen Pornillos and Dr. Barbie Ganser-Pornillos, who will be joining the Biochemistry Department as professor and associate research professor, respectively. Dr. Barbie Ganser-Pornillos will also join the director of the EM core at the University, Dr. David Belnap, as Facility Manager for the Beckman Center for Cryo-EM and we are looking forward to her further elevating the center's work.

Excitingly, in April 2023, we expect the arrival of a Focused Ion Beam milling instrument, the Aquilos 2, again sponsored by the Beckman Foundation. The new equipment will greatly enhance study of proteins in their cellular context by creating thin slices from samples usually too thick to image directly with an electron microscope. These thin sections are called lamellae and enable unprecedented insights into cells, viruses, tissues and animals which is the beginning of a new era of structural biology to explain molecular mechanisms and diseases. We are grateful to the Beckman Foundation for their continued support of our research, and look forward to exciting future discoveries from researchers in our department.

SAVE THE DATE!

Departmental Picnic: June 16, 5pm, Sugarhouse Park
Pace Lecture, given by James Chen: June 5, 4pm

RESEARCH HIGHLIGHT: SNAPSHOTS OF THE CCT CHAPERONE COMPLEX IN THE ACT OF FOLDING A CLIENT SUBSTRATE



Cryo-EM images were recorded of a G-protein substrate (G-beta5) encapsulated by the CCT chaperone complex. Image analysis revealed multiple snapshots that capture an ensemble of structures with the substrate (purple) progressing from unfolded to increasingly folded states (top to bottom, folded segments colored blue). This work reveals the folding trajectory of the substrate and establishes that CCT forms specific contacts with its substrates to facilitate protein folding.

Illustration created by Margot Riggi (Iwasa lab) depicting structures determined by Shuxin Wang, a graduate student in Peter Shen's lab, from data collected at the Arnold and Mabel Beckman Center for Cryo-EM.

STAFF HIGHLIGHT: MEET NICOLE REAMES

As the Executive Secretary of the Biochemistry Department, Nicole Reames juggles a myriad of responsibilities, including making travel arrangements, assisting with purchasing card transactions, providing building and key access, and scheduling for department members. As a "people person," she enjoys working with faculty, staff, and students and supporting them so that they can do their jobs well.

Prior to working in Biochemistry, Nicole worked at the University of Utah School of Business, the Davis Applied Technology College, and at Weber State. She also was a program manager for the Utah Health Department's WIC program, where she traveled throughout Utah to ensure that WIC participants could access the resources they needed.

Nicole grew up in Utah with 4 sisters and 2 brothers. Now, as a favorite aunt to 16 nieces and nephews between the ages of 1 and 21, Nicole enjoys going out on hikes, to the movies, and on fishing and hunting trips with her family. At home, Nicole enjoys quilting, and teaches classes in different shops in Utah as a master quilter.

A selection of quilts made by Nicole.

FACULTY HIGHLIGHT: MEET AKRAM ALIAN

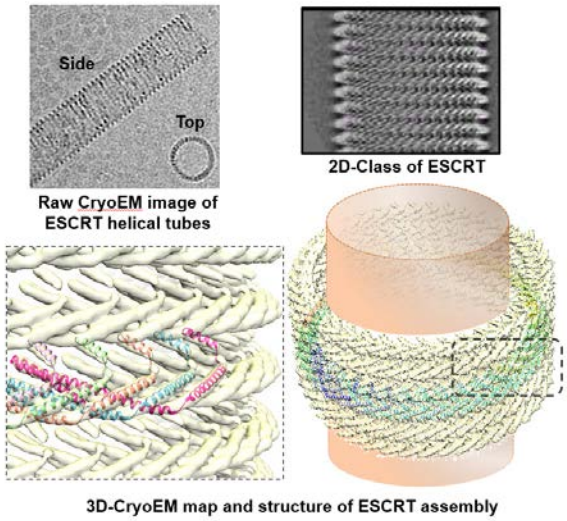
Akram Alian, a Research Associate Professor in the Sundquist lab, grew up in a small village in the suburbs of Jerusalem. Surrounded by the car-mechanics business of his family, he watched car engines being taken apart, repaired, and put back together. This experience has driven a life-long passion to understand the underlying mechanisms of how things work.

Akram attended the Jordanian University in Amman for his undergraduate studies. In his graduate research at the Medical School of the Hebrew University of Jerusalem, he studied the replication of HIV-1 virus. Fascinated by viral proteins, Akram joined the Stroud lab at the University of California, San Francisco for his postdoctoral training in structural biology using X-ray crystallography. He investigated HIV-1 proteins, nucleic acid modifying enzymes, and mechanisms of drug resistance.

Akram was recruited as an Assistant Professor by the Israel Institute of Technology, Technion, in Haifa, to establish infrastructure to support X-ray crystallography studies and to conduct his own research on the structural biology of HIV and related viruses.

Since joining the Sundquist lab, Akram applies both his expertise in X-ray crystallography and revolutionary electron cryo-microscopy tools to structural biology problems. Specifically, Akram uses cryo-EM to solve high resolution structures of ESCRT pathway assemblies. As proteins that drive membrane binding and fission, the ESCRT protein family plays critical roles in the cell and is involved in diverse processes including cell abscission and nuclear membrane reformation. ESCRTs are also exploited by enveloped viruses, such as HIV-1, to facilitate their budding and release from infected cells. The ESCRT complexes that Akram works with form large helical assemblies that wrap around, constrict and drive fission of membrane bilayers.

In his free time, Akram likes to read, bike and hike with his wife Rawan, two daughters Juwayriah (15) and Atika (13), and two sons Qudama (10) and Qaswarh (6). The family truly appreciates and enjoys the beautiful landscape of Utah.

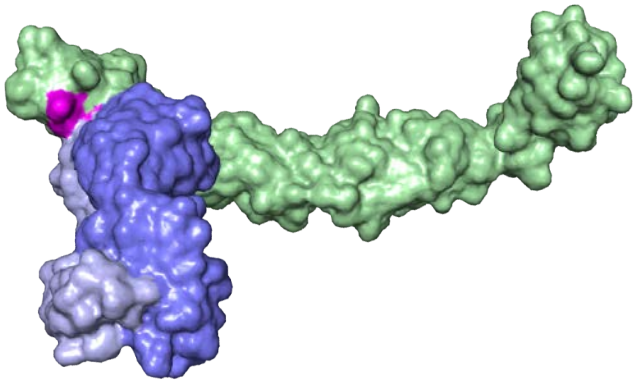


FACULTY HIGHLIGHT: MEET OLIVER HARRISON

Oliver Harrison, a Research Assistant Professor working with Julia Brasch, grew up in a small town in Northern England called Maltby. By high school, Oliver found himself gravitating towards chemistry and biology as favored subjects in school, and settled on Biochemistry as his major while attending Durham University. At Durham, his first research experience focused on interactions between plants and insects, and specifically on the black vine weevil, a pest that feeds on tomatoes and other garden plants. Having enjoyed this lab experience (which Oliver likened to being on Star Trek, where everyone was delightfully civil to one another), Oliver decided to apply for graduate school, and was accepted to a program at the Babraham Institute at the University of Cambridge. Working with Peter Kilshaw, Oliver studied the interactions of classical cadherins, and used a mutational approach to determine the mechanism by which they bind to one another.

Oliver's graduate work whetted his interest in the mechanisms of cell-cell adhesion and learning structural biology techniques. After joining the lab of Lawrence Shapiro at Columbia University as a postdoctoral fellow, Oliver used X-ray crystallography to determine the structures of numerous adhesive proteins, including classical and desmosomal cadherins and nectins. Since arriving at the University of Utah, Oliver works with Julia Brasch and her lab members to study the organization of the desmosome and other cell-cell junctions using X-ray crystallography and electron cryo-tomography techniques. He has also become interested in understanding the role of adhesive proteins in autoimmune diseases, and is currently focused on Pemphigus disease, a blistering disease that is caused by self-antibodies against desmosomal cadherins.

Outside of work, Oliver's two kids, ages 1 and 4, keep him busy. He and his family are big fans of the Tracy Aviary in Liberty Park, and they are looking forward to hiking in Utah as the kids get older.



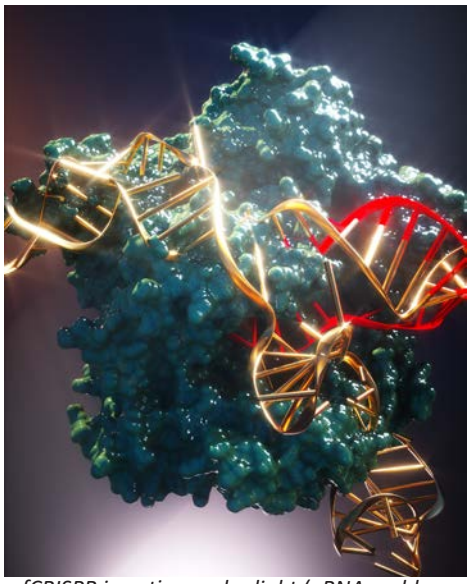
Fab fragment of a human autoantibody from pemphigus disease (blue) bound to its desmosomal cadherin antigen (green). This autoantibody occludes a functional site on the cadherin involved in cell adhesion (magenta).

FACULTY HIGHLIGHT: MEET YANG LIU

Yang Liu is the newest Assistant Professor in the Biochemistry Department, having joined in the fall of 2022. Yang grew up in Changsha, a large city in Hunan province in south-central China. As a child of two scientists and university faculty, Yang was always encouraged to become a scientist. Yang had different ideas, however, and opted to study mechanical engineering and automobile design for his undergraduate studies at Hunan University. He was fascinated, however, by the first chemistry class he took in his freshman year. To his parents' surprise, Yang switched his major to chemistry by his sophomore year. He also started working in Yan He's lab, where Yang first learned about single-molecule imaging. This research experience convinced Yang to apply to graduate schools.

Before joining the graduate program at Emory University, Yang had never lived outside his hometown of Changsha. Joining the lab of Khalid Salaita, whose lab studies mechanical forces on cell signaling, Yang says that he was "not the best student to start with" and spent much time in his first two years traveling and exploring the US. The consistent support of his advisor and eventual lab successes motivated Yang to focus on his graduate school work, eventually culminating in multiple first-author papers. By the end of graduate school, Yang was enjoying his work so much that he had to be convinced to leave. After exploring different options, Yang joined Taekjip (TJ) Ha's lab at Johns Hopkins University. Working with TJ and Bin Wu (also at Johns Hopkins), Yang became interested in developing tools to study molecular processes inside living cells. To study DNA repair processes, Yang developed a technique called very fast CRISPR (vfCRISPR) that triggers Cas9 cleavage activity within a few seconds and allows the observation of double-stranded DNA break repair in living cells.

The Liu lab is broadly interested in studying nucleic acid biology and developing new tools to study these in cells. Yang is excited about developing collaborations across campus and exploring new areas, including immunology and immunity. In his free time, Yang enjoys rock climbing (primarily indoors), and heading outdoors to hike, camp, and backpack. This winter, he's taking advantage of the snow to practice his skiing skills.



vfCRISPR in action under light (gRNA, gold; DNA, red).

HONORS, GRADUATIONS, AND TRANSITIONS

MAJOR FACULTY AWARDS & RECOGNITIONS

Tim Formosa received the University of Utah Distinguished Teaching Award

Helena Safavi-Hemami received a grant from the Juvenile Diabetes Research Foundation.

Dipayan Chaudhuri and **Erhu Cao** received an NIH R01 grant.

Katsu Funai (UU Department of Nutrition and Integrated Physiology) became an Adjunct Associate Professor in our Department.

Tyler Starr participated in a successful NIH P01 grant application, together with colleagues in Seattle.

Janet Iwasa received a new NSF grant, together with colleagues in our Biology Department.

Biochemistry faculty celebrated a transformative $2.5M grant from the Beckman Foundation by creating a video that explains the recent advances and accomplishments in cryo-electron microscopy at the University of Utah.

Michael Kay received a Pandemic Antiviral Discovery grant from the Good Ventures Foundation.

Karen Hilgendorf received a prestigious V Foundation research grant.

Danny Chou, a former department faculty member, was selected for the Young Investigator Award by the American Peptide Society.

Paul Sigala received University of Utah's 2022 Inclusive Excellence Faculty Award.

Tyler Starr received a Damon Runyon-Dale F. Frey Award for Breakthrough Scientists.

Matt Miller was selected to participate in the University of Utah "Vitae" event which recognizes research excellence across University of Utah Health.

MAJOR GRADUATE STUDENT & POSTDOC AWARDS

Adedeji Aderounmu (Deji), a graduate student in the Bass lab, was awarded a prize for his poster "Investigating the Evolution of Dicer's Helicase Function" at the RNA Society Meeting.

Marci Robins, a graduate student in the Kay lab, was awarded an NIH F31 fellowship.

Sam Scherer, a graduate student in the Kay lab, was awarded a slot on the PITCH Chemical Biology T32 training grant.

Sarah Hansen, a postdoc in the Bass lab, was awarded a postdoctoral position on the Microbial Pathogenesis Training Grant and a travel award from the RNA Society.

Alina Guo, a graduate student in the Brasch lab, won the John H. Weis Memorial Graduate Student Travel Award.

Jesse Velasco (Ducker lab) and **Kylie Jacobs** (Hughes lab) were awarded slots on the Metabolism T32 training grant.

GRADUATIONS & TRANSITIONS

The following students completed their degrees since the last publication of the newsletter in Summer 2022: Jake Winter (Rutter lab, PhD 2022), Jordan Berg (Rutter lab, PhD 2022), Peng Wei (Rutter lab, PhD 2022), Yeyun Ouyang (Rutter lab, PhD 2022), Helen Donelick (Bass and Shen labs, PhD 2022), Judah Evangelista (Kay lab, PhD 2022), Zach Cruz (Kay lab, PhD 2022), and Rolande Meudom (Kay lab, PhD 2022).

Best wishes to Janet Shaw and Costa Georgopoulos, whom were awarded emeritus status in the fall of 2022.

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HEALTH
UNIVERSITY OF UTAH

Department photo from the 2022 Biochemistry Annual Retreat held at Snowbird in October 2022. Photo credit: Michael Kay.