

What's New with BB

(June 16th, 2021 through September 30th, 2021)

Dear BB community,

I am delighted that the campus is buzzing again with signs that life is starting to come back to normal. It is wonderful to see students in person, even with masks. I am proud that OSU is the only large university in the state offering all their classes in person, and that we are all eager to give our students a rewarding experience this Fall. We are counting on all of you to be vaccinated, and diligent in wearing masks here at OSU and outside in the community so we can continue to do this.



This past year has been great for the resurgence of science. The constant presence of scientists in the news underscores the need for us to work together in teaching, research, and outreach to continue to find ways to reach and impact the new generation, and we have!. We have been *productive, persistent, pioneers, proactive, progressive, and in short phenomenal!*



Looking forward to continuing this trend this year working together, taking risks, insisting, and persisting in revealing how life works for the benefit of all.

Highlights of the Summer

Submitted/In progress Proposals:

Jesse Howe F31 fellowship proposal: *Deciphering Synergistic Roles of LC8 and the 53BP1 Oligomerization Domain in 53BP1 DNA Repair* was scored in the fundable range, Jesse will hear soon if it will get funded.

The concept paper submitted for internal competition by **Victor Hsu** to the Keck Foundation was selected to go forward, along with Sinisa Todorovic in COE, with a Nov 1 deadline.

Maria Franco in collaboration with Maude David (as PI) from Micro submitted a proposal to the Dept of Defense titled EEC and Microbiome Operations

Funded Grants:

Ryan Mehl and the **GCE facility** received two grants from Amgen for \$1,659,000 total with \$565,990 indirect over two years for projects on the engineering of antibodies as therapeutics using genetic code expansion.

Ryan Mehl also received a 2 year, \$379K research agreement with AbbVie Inc on *Protein targeted degradation with E3 Ligase using GCE*.

Faculty serving on panels:

Maria Franco served on a DOD panel, **Elisar Barbar** on an NSF panel, **Afua Nyarko** will be serving on an NSF panel next week. I am sure there were others. I know how hard and time-consuming these things are so I want to recognize faculty who say yes to this service for their selfless work and also for putting OSU and our department on the map. (I just finished a 3-day panel, so I feel your pain and thank you!)

Publications

From the **Barbar** group:

Barbar E, Estelle A. (2021). [A tail goes viral by forming an anchor and a tether](#). *Structure*. Aug 5;29(8): 783-786. doi: 10.1016/j.str.2021.07.004. PMID: 34358464.

White KA, McEntire KD, Buan NR, Robinson L, **Barbar E**. (2021). [Charting a New Frontier Integrating Mathematical Modeling in Complex Biological Systems from Molecules to Ecosystems](#). *Intergr Comp Biol*. Jul 20;icab165. doi: 10.1093/icb/icab165. Epub ahead of print. PMID: 34283225.

Morgan JL, Yeager A, Estelle AB, Gsponer J, **Barbar E**. (2021). [Transient Tertiary Structures of Disordered Dynein Intermediate Chain Regulate its Interactions with Multiple Partners](#). *J Mol Biol*. Jul 14;433(18):167152. doi: 10.1016/j.jmb.2021.167152. Epub ahead of print. PMID: 34273400.

From the **Freitag** group:

Alouane T, Rimbert H, Bormann J, Gonzalez-Montiel GA, Loesgen S, Schafer W, **Freitag M**, Langin T, Bonhomme L. (2021). [Comparative Genomics of Eight Fusarium graminearum Strains with Contrasting Aggressiveness Reveals an Expanded Open Pangenome and Extended Effector Content Signatures](#). *Int J Mol Sci*. Jun 10;22(12):6257. doi: 10.3390/ijms22126257. PMID: 34200775; PMCID: PMC8230406.

From the **Gombart** group

Logan IE, Shulzhenko N, Sharpton TJ, Bobe G, Liu K, Nuss S, Jones ML, Miranda CL, Vasquez-Perez S, Pennington JM, Leonard SW, Choi J, Wu W, Gurung M, Kim JP, Lowry MB, Morgun A, Maier CS, Stevens JF, **Gombart AF**. [Xanthohumol Requires the Intestinal Microbiota to Improve Glucose Metabolism in Diet-Induced Obese Mice](#). Mol Nutr Food Res. 2021 Sep 8:e2100389. doi: 10.1002/mnfr.202100389. Online ahead of print. PMID: 3449612

From the **Johnson** group:

Yan Q, Liu M, Kidarsa T, **Johnson CP**, Loper JE. (2021). [Two Pathway-Specific Transcriptional Regulators, PltR and PltZ, Coordinate Autoinduction of Pyoluteorin in Pseudomonas protegens Pf-5](#). Microorganisms. Jul 13;9(7):1489. doi: 10.3390/microorganisms9071489. PMID: 34361923; PMCID: PMC8305169.

Invited Zoominars at National Meetings:

Afua Nyarko gave an invited talk at the Gibbs 35th Conference : Assembly of multivalent IDP complexes in growth regulation

Faculty recognition

Joe Beckman's paper in Physiological Reviews has 6000 citations (# 7 in the journal with impact factor of 37).

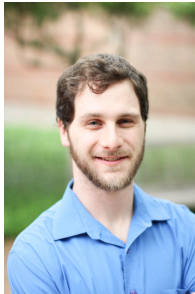
Elisar Barbar 's lab was highlighted by the office of undergraduate education at OSU as leading the university in the number of undergraduate students mentored in research, 7 presented at **SURS 2021**, including one who gave a plenary talk.

Department Wide in the News

- BB494 lab has received some publicity!
 - Check out <https://www.vernier.com/2021/08/11/breaking-down-barriers-for-remote-learning/> about BB494 lab, a nice story about The "[Chemical Biology & Biochemistry Laboratory Using Genetic Code Expansion](#)". Thanks to **Kari and the GCE team** for keeping the connection for Vernier for lab supplies.
- In July our Summer Camps were a hit!
 - **Dave** led a Computational Camp
 - Graduate Students (**Ally, Kayla, Felisha, Sanjay, Amanda, & Rachel**) led our Biochemistry & Biophysics Camp
- A nice, beautifully written article about **Ryan and the GCE team** was featured in Impact magazine
 - <https://science.oregonstate.edu/impact/2021/07/a-vote-of-confidence-two-grants-to-reimagine-how-technology-can-influence-scientific>
- Paper by **Fritz** and coworkers has received quite a bit of publicity:
 - <https://science.oregonstate.edu/impact/2021/06/compounds-derived-from-hops-show-promise-as-treatment-for-common-liver-disease>

- https://www.genengnews.com/news/non-alcoholic-fatty-liver-disease-may-be-treatable-with-hops-compounds/?utm_medium=newsletter&utm_source=GEN+Daily+News+Highlights&utm_content=01&utm_campaign=GEN+Daily+News+Highlights_20210616&oly_enc_id=5234C6744601D7Z
- A nice article about Afua and her team was featured in Impact magazine
 - <https://science.oregonstate.edu/impact/2021/08/biochemist-receives-funds-to-unlock-new-structural-pathway>
- **The Johnson lab** celebrated their 10 year anniversary!
- A nice highlight of **Isabelle Logan** YIA from the Children's Tumor Foundation
 - <https://www.ctf.org/news/2021-yias-innovative-young-researchers>

New Postdocs in BB



Douglas Walker (Barbar Lab)
Ph. D. from Rice University



Riley Bednar (Mehl Lab)
Ph. D. from OSU



Tanjina Afrin (Qiu Lab)
Visiting Postdoc
Univ. of Texas at El Paso



Isabelle Logan
(Franco Lab)
Ph.D. from OSU



Patrick Gleason (Mehl Lab)
Ph.D. from Arizona State



Akasit Visootsat (Qiu Lab)

Douglas Walker recently finished his Ph. D. at Rice University where he studied collagen mimetic peptides to understand the relationship between sequence and stability in collagen triple helices. He spent about half of his time designing an algorithm to predict triple helix stability based on sequence and the other half synthesizing peptides in the lab to inform and validate my algorithm. With Professor Barbar, he will be researching multivalent inherently disordered proteins and their interactions with LC8 through computational and experimental means.

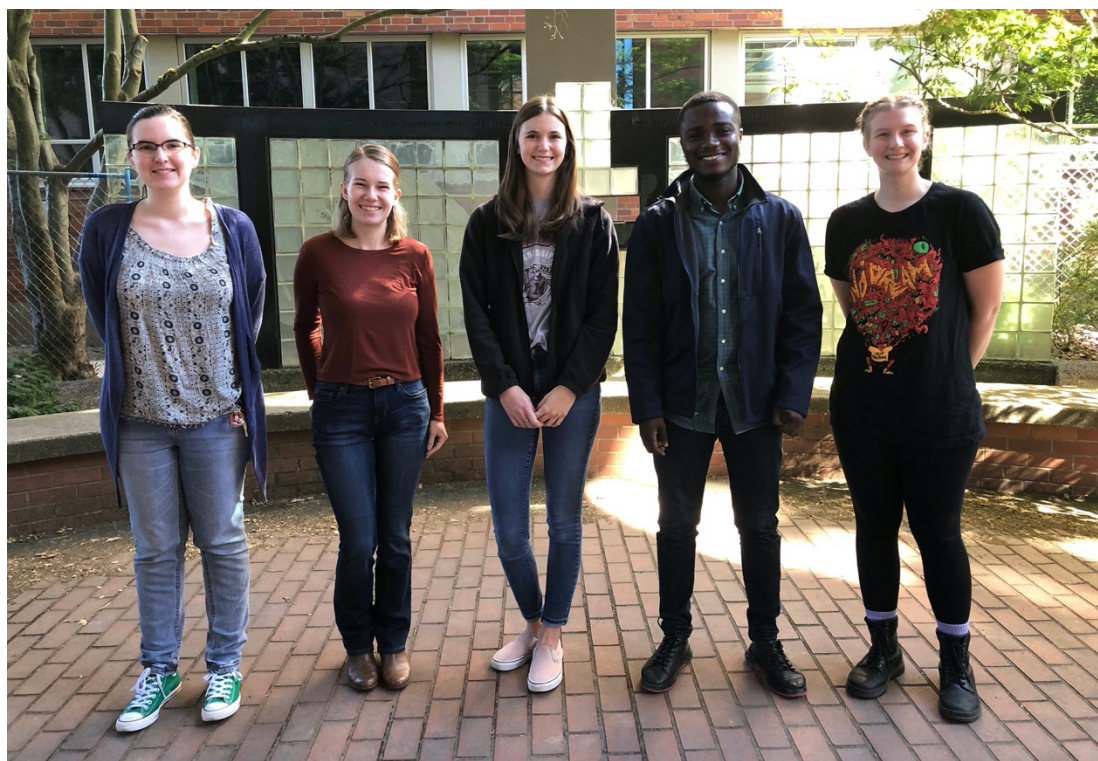
Riley Bednar recently received his PhD here at OSU with Dr. Mehl, developing and applying genetic code expansion technologies that enabled them to uncover the phenomena that govern the interaction of immobilized proteins at material interfaces. As a part of his postdoctoral studies, he will be continuing to apply genetic code expansion tools to more efficiently design and construct protein bioconjugates with greater precision and complexity using ultrafast bioorthogonal chemistry.

Patrick Gleason received his Ph. D. from Arizona State University where he studied protein design with non-canonical amino acids. During his studies, he split his time equally between computational work using the Rosetta protein design software suite (as well as other software) and hands-on lab work. He truly enjoys being able to both design on the computer and then "build" in the lab. We will get to know the rest in future News.

Incoming class of graduate students

Introducing our 5 new amazing students, more info on each in upcoming News:

Sarah McGee	Cal State Univ-Chico 2021
Moriah Longhurst	Brigham Young U. 2021 (Provost scholarship)
Melinda Rydberg	College of Scholastica 2020
Reginald Appiah-Kubi	University of Cape Coast 2020
Hannah Stuwe	OSU 2019 (ARCS Fellowship)



Grad Specific News:

June-

- **Kayla Jara** married Kayla Weber on June 25th in Happy Valley OR after postponing for a year due to the pandemic. Congrats to the Jara-Webers!



July-

- **Sanjay Ramprasad** is the recipient of the 2021-2022 Christopher and Catherine Mathews Graduate Fellowship. This award is given based on academic merit, teaching excellence, and research potential. In his first year here, Sanjay excelled in all these criteria. He will be joining the Nyarko Lab to study the structure and regulation of signaling proteins. Congratulations Sanjay, and we wish you the best of luck in your graduate career and thank you Chris and Kate for your generosity and support of our program.



Congratulations to Sanjay Ramprasad!
Recipient of the 2021-2022 Christopher and Catherine Mathews Graduate Fellowship

- **Heather Masson-Forsythe** gave a talk at the **Annual Protein Society Symposium** titled, "A Dancing Duplex: The SARS-CoV-2 Nucleocapsid Phosphoprotein's Multivalent Binding to RNA" At this meeting, Heather also won one of the "**Protein Science Anniversary Awards**" that will refund her registration and abstract submission fee for making a TikTok about science conferences, which the Protein Society leadership loved!
- **Heather Masson-Forsythe** also presented a poster at the Protein Society Symposium "The SARS-CoV-2 Nucleocapsid protein Binds RNA Multivalently"

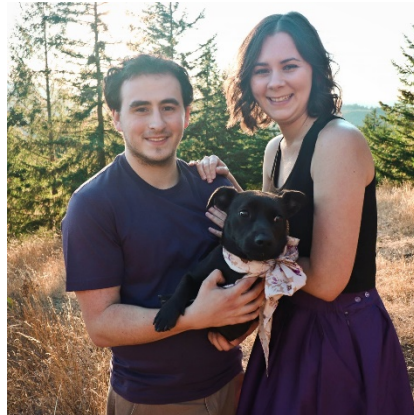
August-

- **Aidan Estelle** and the Barbar Lab published "Transient Tertiary Structures of Disordered Dynein Intermediate Chain Regulate its Interactions with Multiple Partners"

- <https://pubmed.ncbi.nlm.nih.gov/34273400/>
- **Aidan Estelle** and Elisar Barbar published “A tail goes viral by forming an anchor and a tether” in regards to Aiyer et al. (2021) in which they report NMR structures of BET:MLV IN complexes, highlighting a role for the disordered tail domain of MLV IN in viral integration.
 - <https://pubmed.ncbi.nlm.nih.gov/34358464/>
- **Aidan Estelle** published “Native State Fluctuations in a Peroxiredoxin Active Site Match Motions Needed for Catalysis”
 - https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3858048

September-

- **Tilo Chatterjee** was quoted in a Science Mag news article! Thank you Tilo for always representing graduate students so well.
 - <https://www.science.org/news/2021/08/amid-pandemic-disruptions-grad-students-push-unionize>
- **Ruben Riordan** proposed! Congrats to Ruben and his fiancé, Miranda!



- **Kayla Jara** presented a poster in the Dynein 2021 virtual conference
- **Kayla Jara** was also selected to give a talk at the **Gibbs Biothermodynamics Conference** on: *Structural basis of linker length and motif specificity in regulating assembly of dynamic LC8 multivalent complexes*

Also at the **Gibbs conference**, the following grad students presented posters

Kasie Baker

The sequence, structure and length of inter-motif segments modulate the stability of the Yorkie-Warts complex

Amber Vogel

Specificity determinants in the multivalent binding of AMOTL1 to YAP, KIBRA, and NEDD4 WW domain proteins

Jesse Howe

Multivalent interactions of the anti-tumor protein 53BP1

New Leadership in in the GSA



News from Kevin and Indira

I don't know if you want anything from retirees, but here is a bit of news from Indira and me. I'm recovering after a series of eye surgeries this year. All has gone well and it looks like I may finally be done with them. Indira and I have been stymied in our travel plans partly by COVID and partly by my eyes. We have a lot on tap for next year. She is doing well and has a wonderful flower garden this year. I've been doing a lot of writing and have published 11 poems in the past year. We enjoy reading departmental news and look forward to being able to interact more normally sometime soon. I'm also happy to report that an idea I have for making 3D movies from 2D movies has been accepted as a project to pursue by the College of Engineering for their student senior projects.

Advising Corner

This year according to our booking calendars, **Kari van Zee** and **Lauren Dalton** hosted 138 START (one-hour) appointments with incoming students. In addition to START, Kari also hosted 45 summer advising (30 min) appointments. In addition, they hosted an additional 20-30 advising appointments not through MS Bookings, wrote more than 20 pre-med committee letters.

Admin Corner

I want to express my sincere gratitude for the incredible job that Tony has been doing in managing the office single handedly with no Dina and no student helpers. I am glad that we have some long term staffing stability.

Message from Tony

First and foremost, thank you all for your continued patience and understanding!

Our office staff consist of Tony and Dina, Jaz, Matthew McWhorter and Evan DuVivier. Matthew and Evan are both BB undergraduate students and started last week.

Dina has had some personal issues over the last several months and has been inconsistent with her ability to work. We wish her the best in her overcoming her personal issues.

Jaz Mitchel has returned to OSU as a graduate student in Psychology and was part of the staff towards the end of summer term. Jaz will continue to assist the office, on a voluntary basis, through the year because she has enjoyed her time with us.

Juriana Barboza has graduated and is now a graduate student and works with Stephanie in the Provost Office for UG research! She has been appointed as Interim Coordinator for the [STEM Leaders Program](#), effective September 15, 2021.

Michael Goschie is taking a leave of absence from the office until further notice, and we wish him the best.

At this time, the office will be open:

Monday 9am – 3pm
Tuesday 9am-noon
Wednesday 9am-3pm
Thursday 2pm-4pm
Friday 9am-3pm

See you at the **BB Office Hour every Monday at 9:30 am** on zoom!

Upcoming events

Friday, October 1, 2021	BB Faculty Meeting @ 3pm via zoom
Wednesday, October 6, 2021	BB Seminar via zoom
Friday, October 15, 2021	BB Coffee hour, zoom
Wednesday, October 20, 2021	BB Seminar via zoom
Wednesday, November 3, 2021	BB Seminar via zoom
Friday November 5, 2021	BB Faculty Meeting @ 3pm via zoom- Assessment (Kari)
Friday, November 12, 2021	Alumni Talk, Andres Cardenas
Wednesday, November 17, 2021	BB Seminar in person (Afua Nyarko)
Friday, November 19, 2021	BB Coffee hour, zoom
Wednesday, December 1, 2021	BB Seminar via zoom
Friday, December 3, 2021	BB Science Talk @ 3pm via zoom
Friday, December 10, 2021	end of fall term
Friday, December 17, 2021	Rotation Talks and BB Annual Party

October 7 is the launch of the **College's Diversity Action Plan**. The event will be in-person at the Memorial Union Ballroom starting at 12 p.m.. Masks will be required at this event.

You can find the text of the plan [here](https://science.oregonstate.edu/diversity-plan) (<https://science.oregonstate.edu/diversity-plan>).

The Linus Pauling Institute's [Diet and Optimum Health Online](#) conference continues on October 7th at 10:00 am. Session 2 is focused on dietary components and the microbiome. [conference registration](#) is still necessary before October 7th.

Also there will be several **PhD defense seminars** this Fall, the one coming up soon is that of **Heather Masson-Forsythe** on Oct 12th, save the date.

Alumni award ceremony **for Andres Cardenas**, the College of Science Young Alumni Award. will be Friday, Nov. 12 – save the date! A nice Impact article about Andres is [here](#):

Department of Biochemistry and Biophysics

Fall 2021 Seminar Series

Join us on Zoom or in person every other Wednesday.
Free and open to the public.
Register for Zoom sessions here: <https://beav.es/UJ4>
Please note the variation in times for our international speakers.

<p>9:00 AM, OCT. 6 Enrico Luchinat, Ph.D. University of Florence In-cell NMR in human cells: from protein maturation to real-time ligand screening</p> <p>3:00 PM, OCT. 20 Denise Okafor, Ph.D. The Pennsylvania State University Ligand interactions that determine transcriptional outcomes</p> <p>9:00 AM, NOV. 3 Greg Hannon, Ph.D. The University of Cambridge A small RNA-based innate immune system guards germ cell genomes</p>	<p>3:00 PM, NOV. 17 ALS 4001 Afua Nyarko, Ph.D. Oregon State University Assembly of multivalent IDP complexes in growth regulation</p> <p>2:00 PM, DEC. 1 Rafael Radi, M.D., Ph.D. Universidad de la Republica, Uruguay Experiences during the COVID-19 pandemic: from science advice to redox biochemistry studies on SARS-CoV2</p>
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Accommodations for disabilities may be made by contacting tony.reyna@oregonstate.edu.



We have an exciting Fall seminar series (thanks to Kate, and now the baton is handed off to Ryan), and our first seminar is next Wednesday at 9 am. We have several international speakers, from Italy, England and Uruguay this Fall, so please note the time change.

All students and faculty are expected to attend the seminars. Some of these will be in person so stay tuned.

Also, the CQLS seminar series is below.

2021-22 CQLS Seminar Series Schedule

FALL TERM 2021	
September 29, 2021	Chris Plaisier Arizona State University <i>Finding new therapies for mesothelioma</i>
October 13, 2021	TRACE Oregon State University <i>TRACE COVID Community Surveillance Project</i>
October 27, 2021	David Garcia University of Oregon <i>TBD</i>
November 10, 2021	Ya-chieh Hsu Harvard University <i>TBD</i>
November 24, 2021	Carrie Hanna Oregon Health and Science University <i>TBD</i>

Coffee hour

I will be holding coffee hours on Fridays first and third week of each month at 3 pm on zoom when there are no faculty meetings. I will also continue to send weekly emails, and happy to chat in person in my office or the hallways of ALS, or on walks on campus way.

Thank you for reading this far,
Have a great Fall term and send me your news!

Elisar