

THE PERIODIC TIMES

STUDENT NEWSLETTER - MARCH 2024



CHEMISTRY AND
FERMENTATION SCIENCE
NEWSLETTER

TABLE OF CONTENTS

Jobs and Internship
Announcements P.2

Professional Development P.3

Club News P.4

FIRE New Feature! P.5

Student and Faculty News P.6

Applying for REUs P.7

Alumni Spotlight and
Contributions P.8

WELCOME!

BY EDITOR-IN-CHIEFS
JULIA CONNELL &
ZACHARY WOOD

Welcome to the March 2024 edition of The Periodic Times: Student Newsletter! Here, you can find updates about everything happening in the Department of Chemistry and Fermentation Sciences. In this edition, you can find information regarding finding jobs and internships, the resources available at the Career Development Center, and what the clubs in the department have to offer! Gaining experience as an undergraduate chemistry student can be intimidating and difficult. In this issue, you can find a specialized section focused on research experiences for undergraduates (REUs) and how to apply for them. The Department of Chemistry and Fermentation Sciences also supports students for summer research, so be sure to check with your professors about these local opportunities!! We want to thank you for reading this edition and want to thank our awesome team for collaborating on the March 2024 edition of The Periodic Times.

JOBS AND INTERSHIPS

BY LAUREN MARTIN

On the hunt for jobs and internships?

Try exploring on Handshake! It's an online platform designed to connect college students and recent graduates with job and internship opportunities. Handshake partners with universities and colleges to provide students with access to a wide range of employers and job listings. The Career Development Center evaluates all employers, job, and internship postings to protect students against potential employment and internship scams. It's a great resource for students to explore career opportunities, connect with recruiters, and apply for positions that align with their interests and qualifications.

Learn more about handshake by scanning the QR code!



Exciting Research Opportunity: Molecules Meet Materials REU Site at University of South Dakota

Explore cutting-edge chemistry research at the University of South Dakota's Molecules Meet Materials REU site! Participate in 10 weeks of collaborative projects focusing on molecular processes at interfaces. Gain hands-on experience with spectroscopy, electron microscopy, and more. Apply by March 1st for priority consideration! Be on the lookout for emails from Megan Hutton and Dr. Cecile regarding more internship and job opportunities.

<https://usdchemistry.com/reu/>



PROFESSIONAL DEVELOPMENT CORNER

BY JOE CLARK

Whether you are graduating this spring or just starting your journey as a mountaineer, the career development center has an abundance of resources to help you become the prime candidate for your ideal position.



Q & A!

Q: What format should my resume be submitted in?

A: Submit your resume as a PDF. This is because PDFs can easily be accessed on all devices.

Q: Where should I look for available positions?

A: A great place to start looking for potential positions are LinkedIn, Handshake, and Indeed. All three are very prominent job posting sites for employers.

Q: Is a cover letter needed with my application?

A: While a cover letter is not required with every application it is a good idea to submit one. By sending in a cover letter it allows you to personalize your application, showcase your communication skills, explain why you are a better fit for the position, and express interest in the position you are applying for.

Upcoming Interview what can you do to prepare?

Questions – It is a good idea to come up with some questions for your potential interviewer. At the end of most interviews, the interviewer will ask if you have any questions about the position. Doing so will also help infer if the position is a good fit for you.

Practice – A good way to prepare for an interview is to practice what you will say in an interview. How you would introduce yourself and possible answers to some questions they may ask you.

Proper Attire – When going to an interview it is important to dress accordingly. Depending on the position formal or more business casual clothes may be appropriate. The career development center has events where you can get free appropriate attire for an interview if needed. Go to their website or ask them for more information.

Useful Resume Tips!

Tailor Your Resume – Something that may help your resume stick out from that of other candidates may be to change it to better fit to the positions you are applying for. Instead of submitting the same general resume to each position tailor it to the positions you are applying for.

Clear Cut – Putting your resume into a clean and professional format while keeping your resume clear and concise will allow for an easier reading by the hirer. Make it easy for the reader to see the skills and qualifications you have to offer.

Skill Emphasis – Employers value soft skills leadership, teamwork, etc. Incorporating them into your resume while highlighting your achievements will help to maximize the space on your resume.



CLUB NEWS

BY GRACIE GARDNER

FERMENTATION SCIENCES CLUB

The Fermentation Sciences Club is constantly making something delicious! Their previous fermented food projects include mozzarella, kombucha, and tepache. They loosely follow the curriculum of the Fermentations of the World class here at App State, hence the wide variety of cultures represented in their projects!

Meeting times are still being determined, but will be communicated via Instagram (@appstate_fermentation_club) or their mailing list. For more information, contact the club at asufermentation@gmail.com.

FORENSIC SCIENCE CLUB

The Forensic Science Club explores fascinating new fields in their meetings, such as forensic psychology, and they're always doing something new! They're in the process of planning activities for this spring, such as a forensic file scavenger hunt!

Meetings are every other Tuesday at 6pm in GWH 336. For more information, check out their Engage page or contact President **Kaitlyn Kozicki** at kozickika@appstate.edu.

THE **CHEMISTRY** CLUB, THE **FERMENTATION SCIENCES** CLUB, AND THE **FORENSIC SCIENCE** CLUB ARE ALL GREAT WAYS TO GET INVOLVED HERE AT APP STATE! ALL OF OUR CLUBS HAVE BEEN UP TO SOME EXCITING THINGS THIS ACADEMIC YEAR.

HERE'S SOME HIGHLIGHTS!

CHEMISTRY CLUB

The **Chem Club** is in the process of pre-ordering club merchandise! You can order your own chemistry swag here. The club is also in the process of planning some outreach events for this spring. Coming up, they're bringing back the classic fireside chat with their upperclassmen students, as well as Professor Jeopardy with some of App State's beloved chemistry faculty. They're also hosting a sticker contest! Club members are in the process of designing unique chemistry stickers, and the three winners will be made available for purchase. Stay tuned for results!

Meetings are most Thursdays from 6-7pm in GWH 112. For information about joining or getting involved, check out their Instagram (@appstatechem) or contact President **Luke Darney** at darneylb@appstate.edu.



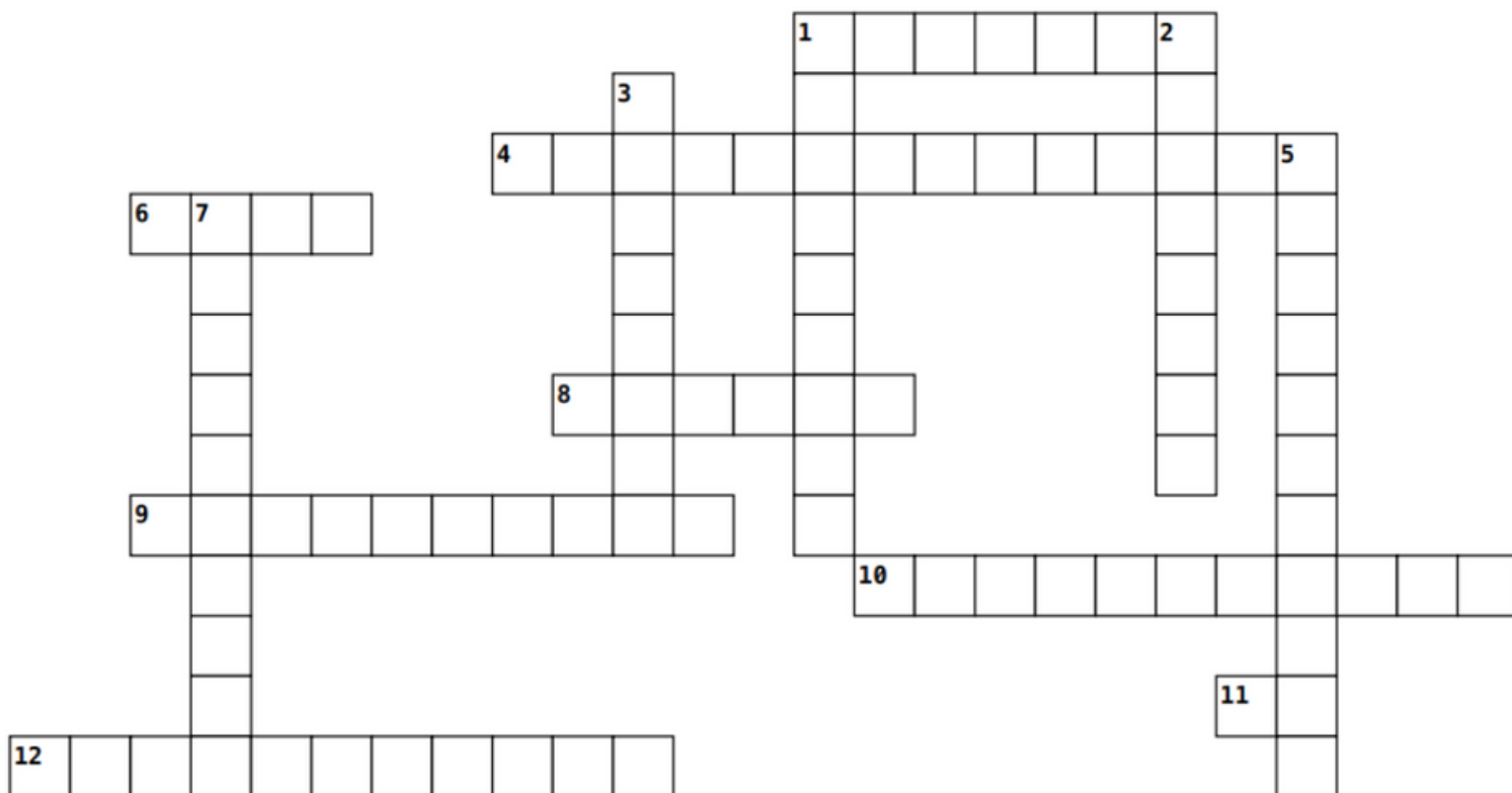
SCAN ME TO
ORDER MERCH!



CHEMISTRY CROSSWORD PUZZLE!

How much do you know??

By Luke Darney



Across

1. The generic name for a chemical species that is being analyzed
4. Class of enzymes catalyzing redox reaction
6. This model of an atom is analogous to planets orbiting a star in a solar system
8. An organic reaction producing an alkene from an aldehyde/ketone using an ylide
9. This enzyme catalyzes the phosphorylation of glucose to glucose 6-phosphate using ATP
10. Phase change from a solid to a gas
11. Chemical formula for carbon monoxide
12. A chemical species or functional group rich in electrons known for attacking electrophiles

Down

1. This acid/base theory says that a base is a compound that increases $[\text{OH}^-]$ in aqueous solution
2. There are 1×10^{18} meters in one of this unit
3. Study of rate of reaction
5. This reaction removes two substituents increasing the degree of unsaturation
7. VSEPR theory predicts that sulfur hexafluoride will have this geometry

Across:

1. analyte 4. oxidoreductase 6. Bohr 8. Wittig 9. hexokinase 10. sublimation 11. CO 12. nucleophile

Down:

1. Arrhenius 2. exameter 3. kinetics 5. elimination 7. octahedral

STUDENT NEWS

BY LUKE DARNEY



Both UNC Chapel Hill and Emory have offered admission to Appalachian State student **Harper Bennett** for a **PhD in chemistry**. I sat down with her to talk about her journey. Harper told me that not that long ago she never would have guessed that this would have been her path. She talked about having a low GPA after her sophomore year and not actually being a chemistry major until the second semester of her junior year. She started as a biology major, but found her passion in chemistry through research and classes. Harper told me getting those offers and a double major was certainly difficult. It involved a lot of time in the research lab, full class loads, summer courses, retaking classes, and coordinating schedules between departments all while putting herself through college, but she said that all of it was absolutely worth it. She says that it is never too late to pursue your passion and she is evidence of that. The biggest piece of advice that Harper has for other students is to join a research lab that you are interested in. Harper is an extremely hardworking individual and we would like to congratulate her on her admission and wish her the best of luck in her future endeavors.

FACULTY NEWS

BY GARRETT GRIMES

Recently **Dr. Taubman** gave an interview with NPR discussing the uniqueness and pioneering fermentation degree offered at ASU. This touched on how the fermentation department is changing with market trends, as a decline in wine and beer consumption is forcing the department to look into other possibilities in fermentation sciences. This included bringing more fermentation courses in meat/cheese fermentation and utilizing new fermentation methods to reinvent pre-established beer and wine methodization, like genetically modifying yeast strains to propagate new fermentation pathways. Emphasizing fermented foods is a newer angle from the department, but keeping up with industry trends and educating students on current trends in fermentation can make students highly employable. An example of a new course recently offered in the fall was a meat/cheese fermentation course taught by a charcuterie expert to better give students real experience and employable skills necessary to get a job in this growing market.



Due to the decline of beer and wine consumption, Dr. Taubman discussed that “we’ve been so married to two yeast species...” and that there are many more yeast strains that can be researched which can open the door to a new wave of beer/wine fermentation. Also, Dr. Taubman pointed out that the department planned to keep a finger on the pulse for this new yeast fermentation and hopefully research and offer this to students soon. On the horizon, Dr. Taubman is planning to publish a book in the spring of 2025 on the fermentation practices of food cultures that have shaped the south; the book is currently awaiting the last steps necessary to go into publication. Keep your eyes out for Dr. Taubman’s book and he encourages interdisciplinary learning and wants you to try out fermentation courses offered here at ASU!

REUs

What's an REU?

BY ANNA BURLEY

Research experiences for undergraduates (REUs) are a great way for students to gain some experience in their field! As you get further in your degree it can be challenging to know if your concentration is a right fit for you. For many this leads to imposter syndrome. REU's are an opportunity to do real work in your field. This gives you both a chance to figure out if you want to continue in your field and give you some experience to put on your resume!

Advice for REUs!

BY MIA VERDUGO

If you're interested in REU, learn as much as you can as early on as you can to determine whether or not you can do it. REU is almost like a job, you need to dedicate time to it and travel to wherever it's located. During the time dedicated to the REU, you are given a stipend at whichever school you decide to attend.

If you're interested in medical school, the earlier you complete REU the better. Those later college years (junior, senior) can be used for completing clinical hours during the summer.

Some schools may require interviews on top of applications so be prepared!

APPLYING FOR REUs

BY BROOKE HENDERSON

Applying to an REU requires a personal statement that needs to captivate the admissions committee. A personal statement should tell a personal story that helps the admissions committee understand who you are as a person and why you are pursuing science and research. Besides a personal statement, an REU application requires letters of recommendation and an unofficial transcript. Depending on the school, you could need up to three letters of recommendation. Make sure to reach out to professors early, so they have ample time to write your letter of recommendation. It is important to make a list of schools you are interested in applying to in the fall of the summer before the REU and find their specific due date. It is recommended to make an excel spreadsheet of the REU programs you are interested in with their due date and specific requirements, so you have them all in one place. You should also share this document with the professors that are writing your letters of recommendation, so they were aware of the deadlines as well. Typically, the school will email the professor for their letter but this is not always the case, which is why it is recommended to share this spreadsheet with them. Although there is a broad range for when the applications for the programs are due, they are typically early in the spring semester (February, March). It is better to start preparing early on rather than later. **Follow this link** to a list of REU programs around the country: https://www.nsf.gov/crssprgm/reu/reu_search.jsp. This is the official site that you should refer to when looking for universities REU programs.

ALUMNI SPOTLIGHT



ABBY BENNETT

Background

Abby Bennett is a recent graduate of Appalachian State University as of summer 2022. Since then she has entered the masters program for Nutrition Sciences at North Carolina State University. This program is based in NC State's Research Campus in Kannapolis, NC as part of the the Plants for Human Health Institute. On top of her Nutrition, Food Science, and Agriculture and Extended Education classes, Abby researches the human health benefits of plant-derived bioactive compounds.

What surprised Abby about graduate school?

She was surprised to learn that it is equally important to learn and practice soft skills as it is to learn and practice hard skills. Some of these soft skills include project management, professional communication at different levels, time management, and networking all of which she learned more about during her time in graduate school. She argues the soft skills are important to learn as well because you have to learn them yourself whereas different labs will teach you the hard skills once you get to the lab.

Advice!

Abby says that the most important piece of advice she can give to chemistry majors is to seek out mentorship. Her experience with this was through faculty members and research advisors but stresses that on-campus organizations, like LEAD, are also great for this purpose. Abby says about mentorship that "I never would have gone to graduate school without the mentorship I received and I am so grateful for each of my mentor's support along the way".

DEAR LABBY

This form is an anonymous method to ask for advice. Ask for any advice and a team of experienced students from the Department of Chemistry and Fermentation Sciences will answer you thoroughly!

[Here is the link!](#)

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