

# THE PERIODIC TIMES

STUDENT NEWSLETTER - MAY 2023



## WELCOME!

BY EDITOR-IN-CHIEF  
MORGAN HERN

Welcome to the May 2023 edition of *The Periodic Times: Student Newsletter*. We are excited to deliver you the most pressing news of Appalachian State University's Chemistry and Fermentation Department. For upcoming graduates, we will talk about job, internship, and professional development opportunities. We are going to give you tips and tricks to get through finals week as well as highlight successful alumni. This edition will also tackle Conferences, what to expect, what you as an undergraduate can get out of a conference, and tell the experiences of two undergraduates who have attended regional and national conferences.

*Enjoy!*

CHEMISTRY AND  
FERMENTATION  
SCIENCES NEWSLETTER

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# JOBS AND INTERNSHIPS

BY Morgan Hern and Sybella Work

## Looking for a job or internship?

Be sure to sign up for Handshake to stay connected with the Career Development Center! They post job and internship availability daily, sending weekly emails out with highlighted jobs that fit your preferences. Handshake is a great resource for your job search at the end of your college career and a great way to connect with employers directly about a listing. Handshake allows you to filter by job type, position, location, and more!

Also keep an eye out for emails from the department office about job openings and internship opportunities both in North Carolina and abroad. These emails usually go out as they are presented to the office, so be sure to be on the lookout.



## What can I do with a chemistry degree?

There are so many different careers you can enter with a chemistry degree. Here are some examples.

Cosmetic Chemist for Eurofins, located in Winston Salem, NC. In this job, you will use LCMS to quantitatively analyze cosmetics for safety.



A chemical consultant for ProSidian, a consultation firm for OSHA. In this job, you will analyze policy, identify workplace hazards, develop testing protocols, and provide recommendations to reduce workplace risk.



A field chemist for Covanta, located in Asheboro. In this job, you will follow safety protocols, separate and dispose of waste, and perform analytical field tests.



# PROFESSIONAL DEVELOPMENT CORNER

BY LINDSEY BLACK

**There are certain skills in the professional world that stand out when combined with other skills. Here are some skills that you should consider learning to improve the quality of your resume.**



## Have an application or interview to prepare for?

As a student, the best resource for you is the Career Development Center. They orchestrate professional events, resume workshops, career fairs, information on the interview process, guidance on graduate school (if applicable to you), student employment here on campus, and much more. Visit them in the Plemmons Student Union for drop-in assistance or to make appointments for one-on-one meetings with their staff.

**Resumes.** A resume is a very individualized document that reflects your variety of academic, work, and extracurricular experience. Your resume serves as a (usually) one page snapshot of who you are and what you've done. Some rules you should follow are:

- The more something is relevant to a position, the more descriptions and bullet points it should have.
- Experience is broad, think about making different section headings.
  - Examples: Industrial experience or academic laboratory experience
- Stay away from using personal pronouns (I, me, my) on your resume.
- If possible, always start each bullet point with an action verb
- Always send your resume in PDF format.

**Cover letters.** A cover letter is an opportunity to introduce yourself and create a compelling application package to show how you're the right candidate for the role. Some tips to remember about cover letters are:

- Be sure your cover letter is no more than a page.
- Focus on the WHY – Why you? Why this job? Why this company?
- Do not address your letter "To Whom It May Concern," if you are unsure of who to submit your materials to, simply greet with "Dear Hiring Manager:"
- Always send your cover letter in PDF format.

## Preparing for an interview!

Just the thought of being in an interview can make any person nervous. However, the more prepared you are in advance, the more likely these nerves are to go away. We are here to help prepare you and fine-tune your interviewing skills.

### Practice makes perfect!

- The Career Development Center offers a virtual course called Big Interview
- Here are some often-asked interview questions to practice:
  - What is your greatest strength and weakness and how will these affect your performance?
  - For a job advancement, would you consider pursuing an advanced degree?
  - Under what style of supervision do you excel?
  - In what ways have you been a leader?
  - What strategies do you employ in multitasking and prioritizing your technical work?

## CLUB NEWS

BY ELAINE GARCIA & LINDSEY BLACK



2023 Annual Professor Jeopardy  
Hosted by the Appalachian Chemical  
Society

Are you looking for a new way to meet other chemistry majors outside of class? Luke, App State's Chem Club president, says, "The Appalachian Chemical Society is a wonderful opportunity for socializing, networking, and resume building. You get what you put into it, whether that means a low-commitment social club, a participant in our chemistry demo show, or high volunteering and opening the door to bigger opportunities within the American Chemical Society. Overall, a fantastic club that I would recommend to everyone"

Check out Chem Club's Instagram to  
learn more @appstatechem

## FERMENTATION SCIENCES CLUB

Club meetings and events incorporate real world experiences, hands-on fermentation, product tastings, in-major mentoring and practical applications. Joining the Fermentation Sciences Club is an awesome opportunity to get to know both students and professors who are actively involved with the Chemistry and Fermentation Sciences department. Their overall purpose is to educate by sharing experiences, encourage creativity, promote women and men in science, and give back by spreading the knowledge of those who got the club started. The club is open to students of all majors and we welcome all who are interested in learning more about the applications of fermentation.

**Some past club activities include making lactofermented jam, brewing a sour cherry stout, and exploring Asian fermented foods!**

Check out Fermentation Club's Instagram to  
learn more @appstate\_fermentation\_club

## PAST ACTIVITIES





# MENTAL HEALTH AWARENESS

BY SYBELLA WORK

## How to positively deal with stress before finals



The week of final exams can be a stressful time for everyone. Anyone can easily become overwhelmed with all the information they must retain in such a short period of time. Below are a few ways to manage your stress while you ace your finals. As Hans Selye says, "Adopting the right attitude can convert a negative stress to a positive one."

## Stress reducers during finals

1. Prioritize your goals and take them one at a time.
2. Get some fresh air and sunlight. Maybe study outside.
3. Take a break and get active. Exercise can help reduce stress
4. Get support from a professional. If all else fails, don't be afraid to ask for help!

## Reach Out for Help!

- Counseling & Psychological Services
  - is located on the first floor of the Miles Annas Building on 614 Howard Street
  - Offers the opportunity for all students to meet with a counselor to determine the most appropriate treatment, at no charge.
  - Call: (828) 262-3180 for more information

## Study Tips to Ace your Finals

1. Avoid the Urge to Procrastinate.
2. Work with a Study Group for extra help.

\*Group study rooms are available for students in the library. Make your reservation here: <https://appstate.libcal.com/spaces?lid=4917&gid=0>

3. Get enough sleep! Don't stay up as late especially the night before your exams. While you're asleep, the body is working to support your brain.

4. Find a quiet study place

\*The 3rd floor in the library offers a silent study area without directions.

5. Take breaks. A break can consist of anything from eating to meditation.

6. Try your best and be confident in yourself!

## • STUDY SURVIVAL KIT •



# STUDENT & FACULTY NEWS

BY CHRIS RIVERA &

## Ever wonder what your classmates are up to?



Dr. Weber's research group involving Tanner McMinn, Logan Jenkins, Joshua Russell, Connor McMinn, and Jason Wilt released a journal of undergraduate chemistry research paper focused on *A Streamlined Synthesis of TBDMS Protected C1 Substituted Sorbic Alcohol Derivatives from Sorbaldehyde*. This paper was submitted May 31, 2022 and accepted June 10, 2022.

[https://www.westmont.edu/sites/default/files/2022-07/Dieter%20Weber\\_final\\_21\\_3.pdf](https://www.westmont.edu/sites/default/files/2022-07/Dieter%20Weber_final_21_3.pdf)

Over the summer Nick Khorozov was accepted to be an intern at the Raleigh Crime Lab, working with the toxicology department. He was put on method validation duty, validating an LC/MS/MS method for opiates in whole blood samples. He was able to develop a method that eluted all opiate analytes (12 of them). This method was more sensitive and selective than the current GC/MS method used to analyze opiates. In addition to method validation, he compiled thousands of toxicological-related articles into a shared database for easy employee access, as well as added more novel psychoactive substances into the QTOF library.

## A Spotlight on Research

Dr. de Campos joined Appalachian State University a little over a year ago and has since brought his passion for forensic science to the chemistry department every day. In his research, Dr. de Campos focuses on developing methods to detect compounds of forensic interest, including drugs that are already known but may be becoming more of a concern, as well as NPSs, or Novel Psychoactive Substances, are emerging substances of abuse that have no known methods of detection or identification. Dr. de Campos and his team of researchers have been working on developing methods with a focus on synthetic cannabinoids, designer benzodiazepines, and synthetic cathinone's.

Some of these methods include and will eventually include switchable hydrophilicity solvent liquid-liquid microextraction (SHS-LLME), disposable pipette tips extraction, GC-MS and GC-MS/MS, ICP, NMR, and FTIR. They have been testing commercial cannabidiol products, with the goal of measuring the metal content within these NPSs, as well as determining if the labels on the products are accurate in what they are saying they contain. They have also been testing biological fluids such as urine for fentanyl and norfentanyl using the SHS-LLME method along with GC-MS/MS, as well as the cross-reactivity of designer benzodiazepines using test strips. Dr. de Campos's team have branched into the use of in-silico methods to characterize NPSs as well. These computer simulated experiments have allowed them to gather several structures of synthetic opioids, predict the toxicological properties of the drugs, and used statistical techniques to group the compounds and try and bring them into the same groups. Even using the predicted properties, they were able to group the synthetic opioids into the classes they originally belonged. This is helpful in finding a method to determine the properties of these NPSs, and in trying to create methods and sample preparation techniques that have not been performed yet.



I also want to point out that Dr. de Campos and his team have been exploring more environmentally friendly ways to sample prep, use less solvent and sample during experimentation, as well as ways to try and miniaturize the procedures they are performing. Their research efforts have led them to work side by side with other labs within the United States and Brazil as well, and they have presented their work at conferences such as The Society of Forensic Toxicologists and the American Academy of Forensic Sciences Meeting. Dr. de Campos is passionate and dedicated to his research, and with the help of his team he has progressively made steps towards his goal of developing new methods to detect and classify NPSs. If you are interested in joining in on Dr. de Campos's research, don't hesitate to email him at [decamposeg@appstate.edu](mailto:decamposeg@appstate.edu), or pay him a visit in GWH 363!

# ALUMNI SPOTLIGHT

## NICK KHOROZOV

**Graduated December 2022**

**Major:** Chemistry – Forensic Science

**Minors:** Criminal Justice and Russian



**Q: What have you been up to since graduating?**

A: I went on a nomadic journey through the Mongolian countryside in frigid temperatures, and then started a new job at LabCorp as an ICP-MS technologist trainee. I will be attending Thomas Jefferson University's Masters in Forensic Toxicology Program for the Fall 2023 semester.

**Q: What advice would you give to graduating seniors that you wish you had been given?**

A: My advice is that it is okay to feel a sense of anxiety regarding things to come. There are so many things that can worry a graduate's psyche, but it is important to focus on the present, while still planning for the future.

**Q: Was there a class you felt prepared you the most for your current job?**

A: I'd say Instrumental Methods of Analysis has helped me prepare for my current position at LabCorp, but more basic chemical concepts taught in Quantitative Analysis have helped me in my previous internships.



# WHAT TO EXPECT: YOUR FIRST CONFERENCE

BY Morgan Hern and Matt Rogers

**Conferences are all about sharing research and networking. At conferences, there will be talk sessions, poster sessions, and networking events. Talks sessions will be a series of short oral presentations. Poster sessions will be sessions where hundreds of posters are tacked to boards and the audience is free to roam. Networking events are events meant to expose chemists to other chemists and resources that may aid in their research.**

## FAQ's

**What to wear?** The name of the game is business casual. Masculine dress is recommended to dress pants, kakis, a shirt with a collar, and maybe a blazer. Feminine dress is recommended to be blouse or plain shirt, dress pants or skirts, or a modest but nice dress. For anyone, comfortable shoes are recommended.

**How to curb presentation nerves?** Everyone, even the most experienced people in their field get nervous when public speaking. Be proud of your work. Try to frame your perspective of your feelings from anxiety to excitement in addition to being prepared and being well rested.

**What to do when I'm not presenting?** Go to talks and poster presentation. There are often graduate school fairs where students can directly talk to representatives and students at the universities.

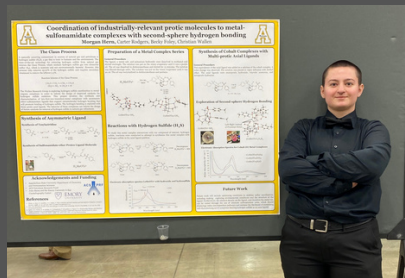
**How do I network?** Ask questions to speakers after their presentations, ask other undergraduates and graduate students to meet for lunch. Talking to new people can be nerve racking, but these events are meant to network. No other time will there be this large a group of chemists in one room, take advantage of it!

## HEAR IT STRAIGHT FROM THE STUDENTS

### Student Morgan: ACS Spring 2023

I went to the national ACS Spring 2023 conference in Indianapolis, Indiana. The conference was held at the massive convention center. I traveled with my PI, 2 other undergraduate students from my research group, 2 other professors, and 1 other undergraduate student. I presented a poster the first day there. I was really nervous because there were a lot of graduate students and professors on posters next to me. It was such a good learning experience to be able to use chemical vocabulary that otherwise is stuck in the classroom and to talk with experienced people in your field.

When I wasn't presenting, I got to see a bunch of others posters and talks. I got to learn about so much cool research and speak to chemists from all over the country, in the niche of chemistry I study as well as all different types of chemistry. I got to learn about fields of chemistry I had never heard of. I got to hear about the graduate school experience straight from people in graduate school. The event I will remember for a long time was David MacMillan's talk, the 2021 Nobel Prize winner, give a talk about the Nobel prize winning research and how he got where he is today.



### Biochem students: SEC Spring 2023

Ten students from the Christian, Culpepper, and Reddish labs traveled to Atlanta, GA, last month to present their work at the 13th Annual Southeast Enzyme Conference (SEC). The group photo below features our enzyme enthusiasts in matching t-shirts and smiles.

