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Department of Chemistry and Fermentation Sciences

THE PERIODIC TIMES

STUDENT NEWSLETTER - APRIL 2026

CHEMISTRY AND FERMENTATION SCIENCES NEWSLETTER

TABLE OF CONTENTS

WELCOME!

WRITTEN BY EDITORS-IN-CHIEF: MIRIAM GREEN AND MICHAEL LOWE

Welcome to the **2026 April** edition of the **Appalachian State University Periodic Times Newsletter**, created by Chemistry and Fermentation Science students to provide valuable resources and experiences within the CFS department and beyond. In this edition, we discuss club, student, and faculty updates around Garwood Hall as well as tips and tricks to help your professional journey. Whether you're looking for a job or just seeking some inspiration from fellow students or faculty, this is the edition for you!

"Above all, don't fear difficult moments. The best comes from them." - Rita Levi-Montalcini

JOBS & INTERNSHIPS

Scan me for the full opportunity list!

Written by: Alex Sweetman

Actively searching for jobs and want a resource designed for App State students?

Internships may seem hard to find, but there are a number of resources to explore different fields of chemistry. The best places to start are ACS Careers, NSF REU programs, and Handshake, which is tailored to App State Students. The ACS Career portal has national listings for all kinds of chemistry internships and full-time jobs. NSF REU programs are a paid summer research experience at universities across the country. LinkedIn is a great place to connect and look for opportunities. Dr. Cecile regularly reposts internship opportunities on her page!

Ready to take the next step and begin applying for jobs?

The most important thing when applying for jobs is to be prepared. This means knowing what you're applying for, reading the post clearly, and tailoring your resume to highlight your skills and experience. The Student Writing Center accepts walk-ins in order to help write, correct, and edit your resume. Don't be afraid to get help; ask your professors and advisors to look over your resume for a professional review.

Have you found a company you're interested in and want to learn more about what it's like to work there?

LinkedIn is an easy way to see where App State grads actually end up, and the Alumni page is packed with hundreds of former students and their current jobs. It's a great place to scroll through their career paths, find people working in fields you're curious about, and even connect with them to ask what their day-to-day looks like or how they got the job!

How do you talk about your experience with confidence?

A lot of students feel like they don't have enough experience, but you actually do! You have experience with laboratory writing, notebook documentation, instruments, standard operating procedures, teamwork, troubleshooting experiments, and problem-solving. These are all things employers are looking for in a potential hire. They want to see that you can think, communicate, and solve problems.

Want to explore more research opportunities?

Visit the US National Science Foundation's Research Experiences for Undergraduates (NSF REU) website at https://www.nsf.gov/funding/initiatives/reu/search?f%5B0%5D=reu_location%3A34162&f%5B1%5D=reu_research_area%3A25736. The site offers a wide range of summer programs in research sites across and beyond North Carolina. Students can explore areas outside of chemistry, such as Biology, Engineering, Mathematics, and other disciplines.

PROFESSIONAL DEVELOPMENT CORNER

Step Into Your Future:

Written by: KaBria Ross

★ Apply Like a Pro: Quick Tips & Tricks ★

- Keep a spreadsheet of all jobs you apply to: track deadlines, contacts, and follow-ups.
- First impressions count! - Dress professionally, even for virtual interviews.
- Record yourself answering common interview questions to hear how you sound and improve!
- Boost Your Profile: Use your LinkedIn headline to highlight skills, not just your major.
- Send a personalized thank-you note after interviews — it makes you memorable!

★ Job Application Tips for Students

April is the perfect time to focus on job applications, and the Career Studio at Appalachian State University's Career Development Center is here to help! Peer-to-peer advising and resources are available for:

- Exploring majors and career paths
- Resume, cover letter, and personal statement development
- Free professional headshots
- Using Handshake and LinkedIn
- Job searching strategies
- Interview preparation

★ Key Resources

Resume & Cover Letter Guidance: Drop in or schedule an appointment to create or refine your materials. Tailor each application and highlight your skills

Interview Preparation: Use mock interviews or *Big Interview* to gain confidence and polish your answers.

Job Search: Explore opportunities on Handshake, register for events, and connect with employers

Professional Skills: Build confidence, improve networking, and strengthen workplace readiness

★ Career Development Center Links and Info

If you would like assistance, you can find the CDC in Room 222 of the Plemmons Student Union at 263 Locust Street, Boone, NC 28608; call 828-262-2180. Can't make it in person? Email a Career Guide careerguide@appstate.edu or visit their website at https://careers.appstate.edu/.

Interview Overview and Alumni Resources

Written by: Cristian Aguilera

Interview Overview

When looking for employment, you are guaranteed to be interviewed. To best prepare for an interview, it is important to research the company and the industry ahead of time. By researching the industry, you can gain insight into the company's competitors and challenges. By researching the company, you can determine how the company stands out and how it faced the challenges in its industry. You will be able to stand out by directly incorporating how your experiences will benefit the company. To further increase your chances of success, you must prepare for any questions you may be asked. The best way to do this is by studying the job description. This will allow you to relate your experiences to what they are looking for. It is also important to sell yourself to the interviewer in order to show them that you are knowledgeable and confident. Finally, it is also important to ask the interviewer questions to show that you are interested and have done your due diligence, questions like "What is the work culture like?" By following these steps, you should be able to leave a lasting impression on the interviewer and hopefully get the job.

Remember, it is also important to practice to make sure your responses sound fluid. You can practice by recording yourself or with a friend. You can also make an appointment with the Career Development Center to practice online interviews as well.

Alumni Career Center Resources

Even after graduating, **Appalachian State** still has your back! Within one year of graduation, alumni gain access to a range of resources to support their job search. These resources include the ability to set up an online meeting with a career coach or practice a mock interview online. Graduates also gain access to career fairs and events through the use of the Handshake app. These events give you an opportunity to network, find internships, or potentially find employment.

GRADUATE SCHOOL OPPORTUNITIES

Written By: Genesis Santos

Choosing Between MS and PhD

Master's (MS) programs usually take 2-3 years and involve coursework along with a thesis or capstone project. Funding is sometimes available through assistantships or fellowships, but it is not guaranteed and is less common than in PhD programs.

Doctoral (PhD) programs typically last 4-6 or more years and are heavily focused on original research. Most STEM PhD programs provide full funding, including tuition and a stipend, and are generally a better option for students aiming for research, academic, or R&D careers.

Funding & Stipends

Graduate funding commonly comes from teaching assistantships, research assistantships tied to a faculty member's **grants,** or **competitive fellowships** that provide a stipend and sometimes cover tuition. In the U.S., STEM PhD **stipends** for 2025-26 often fall around $30,000-$40,000 per year with tuition and health insurance included, while major fellowships can offer higher support. Master's funding is much less consistent, as some programs offer full support, but many require students to secure their own assistantships.

In-State vs. Out-of-State Tuition

Public universities usually charge lower tuition for in-state students than for non-residents. However, many PhD programs and some master's programs waive **out-of-state** tuition as part of their funding packages, allowing students to pay **in-state** rates. In some cases, this waiver is automatic, while in others it's important to confirm that it's included in your offer.

GRE and Other Requirements

The **GRE** (Graduate Record Exam) was once widely required, but by 2025, many STEM and forensic programs had made it optional or removed it entirely. For programs that still consider **GRE scores**, schools often outline preferred score ranges and offer waivers based on strong GPA, relevant experience, or program-specific policies, so it's important to check each program's website.

Tips to Maximize Opportunities

Applying for external fellowships early, such as NSF GRFP or DOE CSGF, can significantly strengthen both your funding options and your chances of admission. Staying flexible by reaching out to multiple schools and faculty improves your odds, since lab openings vary year to year. It's also important to carefully review each program's funding policies to make sure your intended degree track allows or includes financial support.

How to Contact Grad Schools & Labs

A good place to start is by **identifying faculty** whose research closely matches your interests and familiarizing yourself with their **recent work and lab focus**. When emailing professors, keep your message concise and professional by briefly describing your background, explaining why their research interests you, and asking about potential openings or funding, while attaching your CV and unofficial transcript. For broader questions about applications, funding, or deadlines, you can also reach out to the department's admissions office or the **Director of Graduate Studies** listed on the program website.

Note of Encouragement

Written By: Genesis Santos

If You're Nervous About Applying:

If you happen to be nervous about applying because you lack lab experience or have a less competitive academic profile, **you're not alone**, and **you're not unqualified.**

Graduate programs increasingly evaluate applicants holistically, valuing growth, motivation, and curiosity just as much as metrics, and many successful graduate students started with limited research exposure or uneven transcripts.

Graduate school is designed to train you, not to admit only those who already know everything, and admissions committees care far more about your potential now than past setbacks. You don't need permission or a perfect résumé to apply, only need the willingness to try, because not applying is the only guaranteed "no."

YOU GOT THIS!

Chemistry Majors: your field is rigorous, your hard work is real, and your dedication does not go unnoticed. We wish you continued success and confidence as you pursue higher education.

CLUB NEWS

Written by Moises Ibarra

FORENSIC SCIENCE CLUB

Discuss chemistry in true crime, listen to speakers from the FBI and SBI, visit state crime labs, set off bombs at the gun range, and perform other fun activities. This semester, **biweekly meetings** are being held at **Garwood Hall (Room 108) on Mondays at 5:00 PM.** If you are interested, email asu.forensicscienceclub@gmail.com or join the GroupMe at https://groupme.com/join_group/105714267/0Dfs9AJz.

APPALACHIAN CHEMICAL SOCIETY

Perform cool chemistry experiments and blow stuff up! This semester, **biweekly meetings** are being held at **Garwood Hall (Room 112) on Mondays at 5:00 PM.** Upcoming activities this semester include Professor Jeopardy, a senior panel, and an end-of-year tie-dye party. If you are interested, feel free to drop by or contact the president (Seleen Al Horani) at alhoranis@appstate.edu.

FERMENTATION SCIENCE CLUB

Learn about chemistry in fermentation science by making fermented foods and participating in trips to sites such as brewing facilities and vineyards. This semester, **weekly meetings** are being held at the **back of Mountain Laurel Hall on Thursdays at 5:00 PM.** Upcoming activities this semester include making pizza from scratch with fermented ingredients, a trip to Parallel's brewing facility in Deep Gap, and a tour of the vineyards of Villa Nova in Buter, TN. If you are interested, feel free to contact the president (Eden McNeil) at mcneilec@appstate.edu or join the club Discord at https://discord.gg/QxKTHUeBca.

STUDENT SPOTLIGHT

Written by: Ayden Gilmore

Meet Charlie Weeks

One of App State's brightest students
ASU class of 27'

Note from the Author:
I had the pleasure of interviewing fellow student **Charlie Weeks** and asking them about how they are preparing for a future career in chemistry.

Q: What are your plans after graduating?

A: I plan to immediately progress to **graduate school** and pursue some type of **chemistry PhD.**

Q: What have you done to prepare yourself for graduate school?

A: To prepare myself for a future in grad school, I've involved myself in undergraduate research under Dr. Shaw since my sophomore year. Dr. Shaw urged me to get involved with research as soon as I could, as my academic advisor, and it happened that his lab interested me the most for my purposes. I've also TA'ed an organic and analytical lab for 1 semester each, getting the former opportunity as a result of being in Dr. Shaw's research group, and the latter opportunity after being recommended by Dr. Dhungana post my completion of quant.

Q: What do you think is most important into getting into a PhD program?

A: Academic performance may be the single least important thing when it comes to getting into grad school. From what I have been told by professors in the department, a 3.30 GPA is the minimum required GPA to get into a "good" graduate program (whatever that means). Rather, getting yourself involved in research as early as possible is to show the grit and drive that are ultimately the true markers of a successful graduate student (or so they say, I don't know, haven't done it yet) is the most important aspect. In some ways, graduate schools are scared off by the 4.00 GPA, a perfect academic who hasn't done anything else in the realm of chemistry; for the purposes of grad school, they haven't proven themselves.

Q: Is there any advice you want to give to future chemistry students?

A: **Community, community, community!** You will be around the same cohort of students for all of your time in the chemistry department, so you might as well make friends with them. You're going to share classes, be in the same research groups, and maybe be involved in the same extracurriculars... take advantage of that! Looking at it from a strictly practical standpoint, chemistry stretches you thin, especially when you get to higher-level classes and labs (regardless of concentration). By engaging with your classmates early, you'll always have study buddies, people to go to office hours with (or for you!), and a support structure when things get rough.

Faculty News

Written By: Abigail Garcia

Dr. Jennifer Cecile

Techniques in biochemistry are employed in Dr. Cecile's research projects for the study of OATs through xenobiotic transport by building nematode model systems, observing them through single nucleotide polymorphisms as well as genetic splice variants. Dr. Cecile also analyzes amino acids for OAT protein expression and has other research interests in biophysical chemistry and biology.

Dr. Folarin Oguntonyinbo

The molecular microbial ecology of fermented products is important for the provision of safe foods. Dr. Oguntoyinbo addresses the question about the development of multi-functional starter cultures in North Carolina by maximizing the in-situ growth dynamics, kinetics, and functional properties of products to support industrial fermentation systems.

Dr. Bob Swarthout

Dr. Swarthout uses analytical chemistry techniques to study environmental issues globally and locally. In his projects, the current goal is to study the environmental impacts that natural organic compounds and pollutants from fossil fuels have in the air, water, and climate. One of his current projects is to measure volatile organic compounds at the AppalAir atmospheric observatory to better understand the complex relationship of volatile organic emissions from trees and shrubs.

ALUMNI SPOTLIGHT

Written by: Michael White

HEIDEN KRISTOFFERSON

Heiden graduated from Appalachian State in the **spring of 2025**. He was formerly a member of Dr. Jefferson Bates' computational research group and **now attends Auburn University**, conducting research under Dr. Filip Pawlowski.

Q- What were the most impactful undergraduate experiences you can recount that helped develop the chemist you are today?

Definitely one part would be doing **undergraduate research,** because without having that experience, I don't think I would have looked for a graduate school opportunity. Especially starting research early gave me the opportunity to understand "what is research like?" and I think that was the biggest thing for me. Overall, I did really enjoy the higher level classes, of course, the gen chem classes helped build a solid foundation, but the higher level classes, from physical chemistry to inorganic, gave me a good base for graduate school and really translated well to the classes I've been taking so far. The smaller class sizes at the higher-level courses also brought the class together a lot closer, and everyone got to know each other a lot better.

Q- What advice could you give to undergraduate students and soon-to-be graduates at App?

For those graduating soon, whether they're pursuing a graduate degree or entering the industry, make sure you start full force, regardless of whether what you're doing may not be the most interesting or you might be bored, just start off on the right foot and work really hard. It may take a while to really understand new things. I'm still piecing things together, but putting that extra effort in will pay off in the long run.

For those students who are earlier in their undergraduate career, if you have any interest in research or want to explore chemistry outside of the classroom, definitely look into some research groups and talk to professors. Take that step to get a bit more experience and find that person you want to work with. The undergraduate research at App was really impactful to me, and I think it opens doors you wouldn't have the opportunity to open otherwise.

SOME CHEMISTRY FUN!

CHEMISTRY WORD SEARCH

X V N U J I A D R L K U A W S F L X P Q
Q U M L Q Y V R U H O D A W B Q E Z M S
B D P V F B A L N E X W B C G Q J Q F Q
N K L G E Q N U I O Y I O K E R J Q B B
S L I W C A Q Q R R G L R N H Y T W C P
J M I N H A R D F D E H O U W M U N C H
U Z V T A Q X A L N N Y N M L U E O A O
T Z Z E H K J D O I X D R U W I S E R S
B T G O Z I V I U T C R I I A S U N B P
Z F L U L D U B R R H O W N R S L G O H
V S W B D Y A M I O L G M I G A P I N O
C C H X I I H U N G O E U M O T H E R R
C W C L Y Q R J E E R N I U N O U Q N U
M A F T A M N E S N I P L L Y P R M O S
S F L Z J L O T C V N S L A W D P U C Y
O Z R C H Y P P P O E R Y L Y H H I I N
D H R D I M L Y Q U T T R P F M P L L W
I Q S H H U A V M A G N E S I U M E I U
U U F H I V M A I J E A B R J Y J H S K
M K R H D X P Q N N E R W H Z J U T U C

1. hydrogen **2.** helium **3.** lithium **4.** beryllium **5.** boron **6.** carbon **7.** nitrogen
8. oxygen **9.** flourine **10.** neon **11.** sodium **12.** magnesium **13.** aluminium
14. silicon **15.** phosphorus **16.** sulphur **17.** chlorine **18.** argon **19.** potassium
20. calcium

Word search from: https://wordsearchlabs.com/view/310452

THANK YOU TO OUR CONTRIBUTORS AND GUEST SPEAKERS

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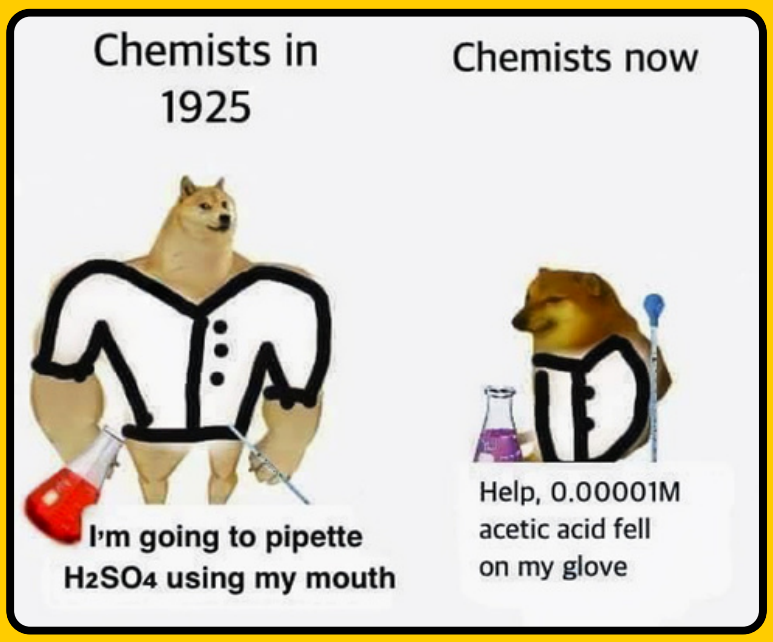
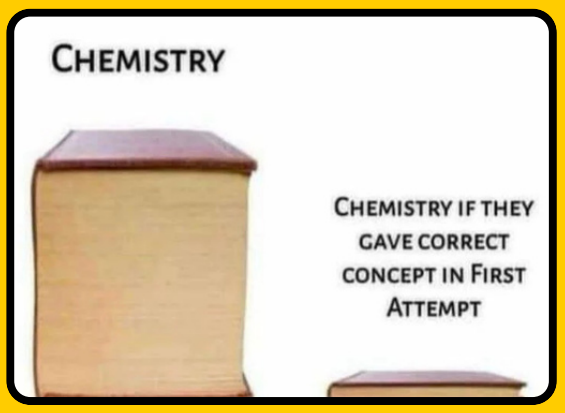
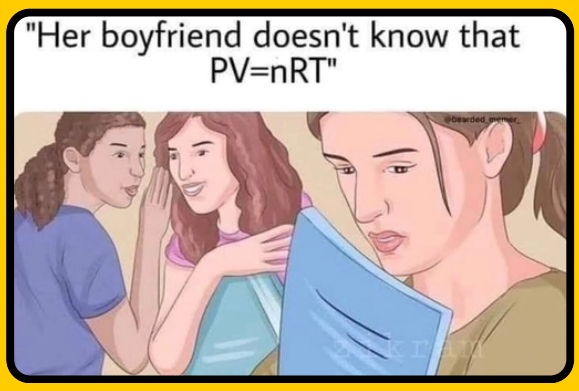
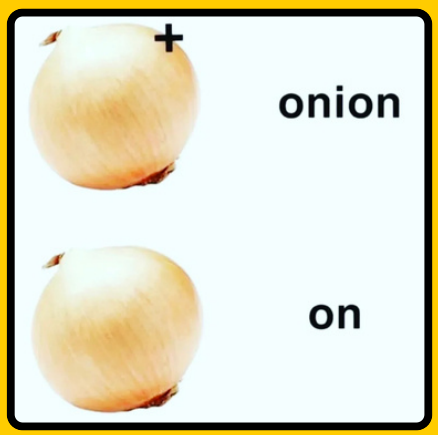
Some Chemistry Jokes to Lighten Your Day!









These jokes were found on Instagram, Reddit, and Pinterest by multiple contributers