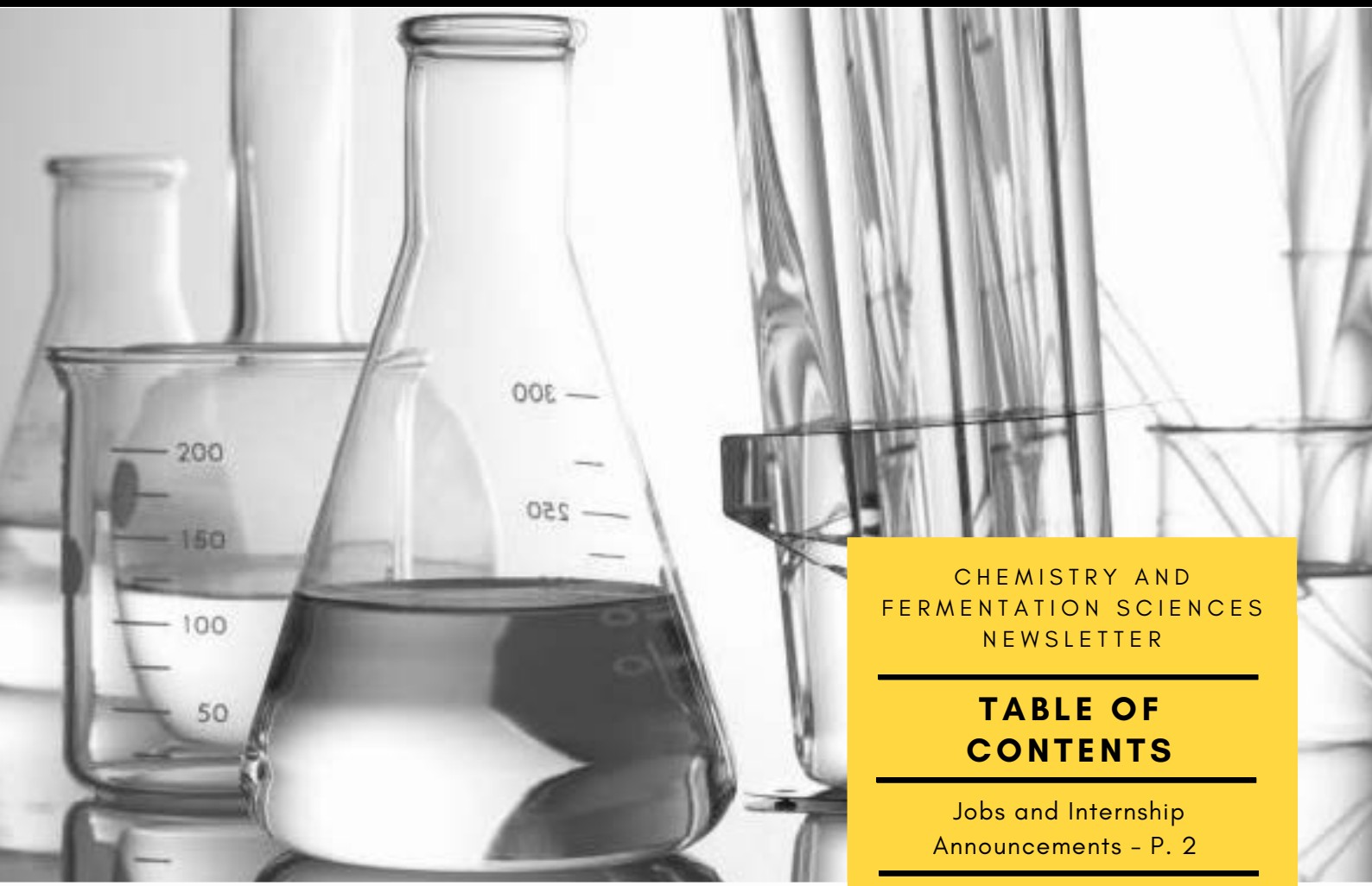
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Department of Chemistry and Fermentation Sciences

# THE PERIODIC TIMES

STUDENT NEWSLETTER - OCTOBER 2026



CHEMISTRY AND FERMENTATION SCIENCES NEWSLETTER

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# WELCOME!


**WRITTEN BY EDITORS-IN-CHIEF: CHARLIE WEEKS & COLE HARPER**


Greetings Chemists and Peers! Welcome to the 2026 October edition of the Appalachian State University Periodic Times Newsletter, created by Chemistry and Fermentation students to be your one stop shop for all things CFS! To come, information pertaining to professional development, CFS clubs, and a spotlight on one of our own alumni! Get the inside scoop on our newest faculty member Dr. Chanda as well as the inaugural Student Advisory Board. Make it to the end, and enjoy some all-around fun with our Garwood Hall personalized crossword puzzle.

# JOBS & INTERNSHIPS

**Looking for on campus work?**
If you enjoyed a class you have already taken, think about becoming a SI leader. If you scored with a B or higher and have a minimum GPA of 3.0 you're eligible! SI leaders are placed in one classroom and work directly with those students to foster learning. Reach out to the student learning center at student-learning-center@appstate.edu if you're interested.






**How about experience?**
Even if you just arrived at App State it is never too early to start. There are many opportunities to contribute to research in whatever field you are interested in! It's important to start early, even if you don't think you know enough. Don't be afraid to email a professor if you are interested in their work!

**Off campus work!**
On the look out for off campus work or internships? Don't forget about Handshake. Handshake is a great place for students to quickly find lots of listings for possible opportunities. Sign up and Handshake will send you reports of new openings in your field and area!





**Confused on your next step?**
If that sounds like you, the career center is a great place to start. There you can set appointments to talk with a real adviser who can help you with job search, building resumes, or submitting applications. Get in contact to start your journey today at careercenter@appstate.edu!

Written by: Owen Replogle

# PROFESSIONAL DEVELOPMENT CORNER

WRITTEN BY: COLE HARPER

## CAREER STUDIO

- The career studio is an opportunity to get peer-to-peer career advice.
- They provide a casual and accessible drop-in environment for students to develop strong application materials and get answers to questions from knowledgable career guides.
- There you can find assistance with your resume, cover letter development, and Linkedin and Handshake profile set-up and tips. Check it out here

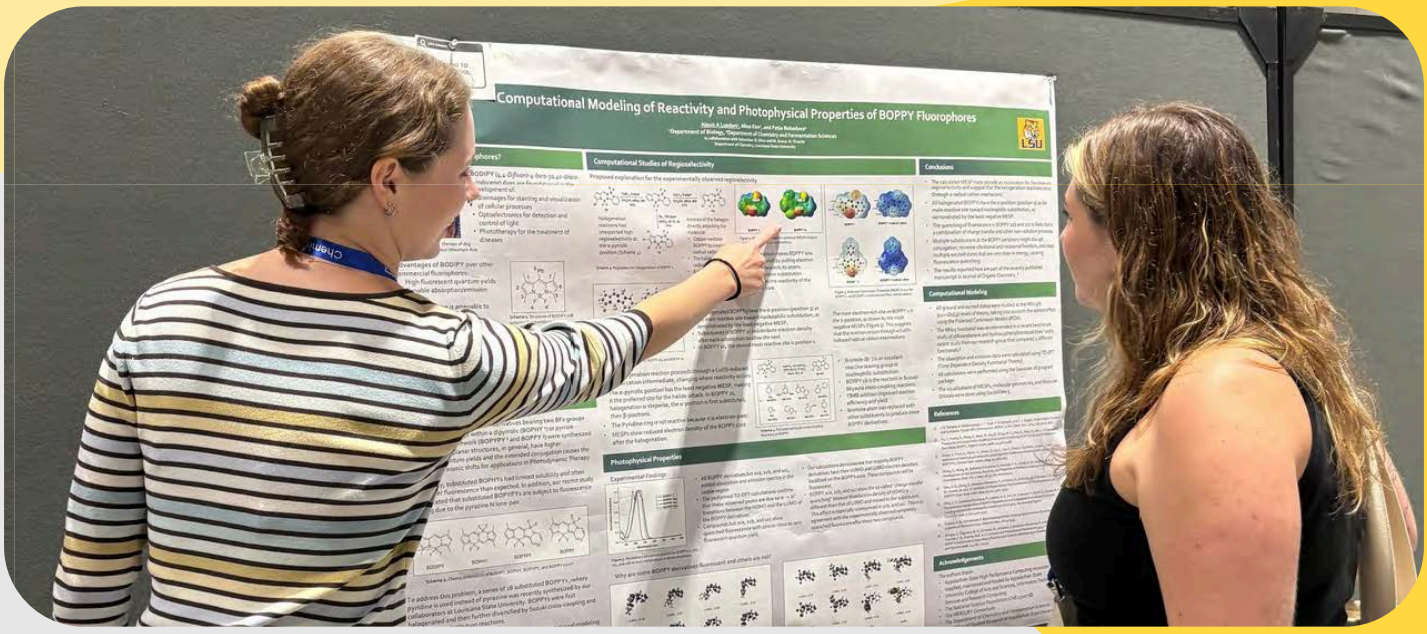
### Who are Career Guides?

Career guides are high-achieving students trained by the career development staff on recommended career resources, who want to help you succeed!

They can offer you with resources pertaining to jobs/graduate schools, and provide reliable insight into your professional career.

### When to make an appointment:

- Major career exploration
- Creating and tailoring your resume
- Curriculum vitae (CV) and personal statements
- Practice interviewing (mock sessions)
- Graduate student or alumni career guidance
- Applying for graduate school
- Preparing for a gap/service year




**Alexis Lueders presenting her research at a national ACS conference.**

# PROFESSIONAL DEVELOPMENT CORNER: SOFT SKILLS

WRITTEN BY: COLE HARPER

**Soft Skills:** within chemistry there is a common notion that quick thinking and technical skills will lead to success. However, the reality is much different, soft skills set apart a **brilliant** career from an **average** career.

## INTERPERSONAL SKILLS

- **Writing** reports and manuscripts for publiciations in a graduate or industrial setting.
  - Writing a publication/manuscript is not the same as writing a lab report.
  - The audience, purpose, guidelines, and influence of the writing are different.
  - There is little focus on this kind of writing in undergrad, so take time to familarize yourself with the format by reading publications that interest you.

- **Speaking** at seminars or other formal presentations (including posters at conferences where students have the opportunity to interact with attendees.)
  - Practice in speaking and presenting at conferences is vital in a professional career.
  - This is not just a skill you can memorize but a skill you must learn through experience.
  - Giving a stellar talk at a conference could mean getting an invitation to seminars or even a job application.

### Personal/Workplace

- Getting along with supervisors can be very important, understanding how to **collaborate** and **communicate** as a team can boost the lab experience for everyone.




**Ian Wolniak presenting his research at a national ACS conference.**

# CLUB NEWS

## APPALACHIAN CHEMICAL SOCIETY

Written By: Gretchen Dunn

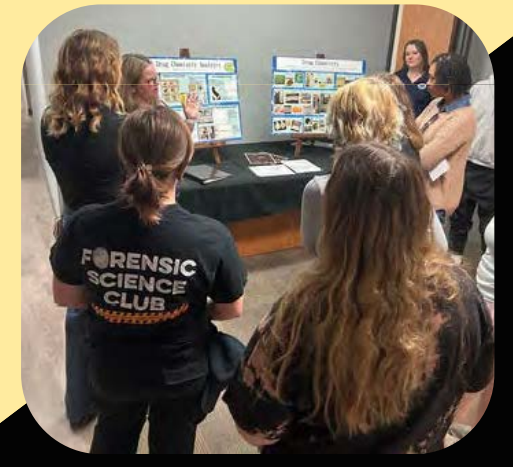


Do you enjoy blowing things up? Making your own ice cream with liquid nitrogen? Are you interested in meeting industry professionals and learning more about career paths with a Chemistry degree? Then the **Appalachian Chemical Society** is for you! This semester, the itinerary includes a **baking competition, pumpkin decorating (& explosion), an industry panel, and elections of new officers (along with liquid nitrogen ice cream)**. At the most recent meeting, students got to watch and participate in **elephant toothpaste, whoosher bottles, breathing fire, and perchlorate** demos! The club is open to students of all backgrounds and no experience in Chemistry is required. If you're interested in joining, find Appalachian Chemical Society on Engage, follow @appstatechem on Instagram, or email the president, Gretchen Dunn (dunnga@appstate.edu) or vice president, Nate Heberlein (heberleinne@appstate.edu)!

## FORENSIC SCIENCE CLUB

Written By: Gretchen Dunn

The **Forensic Science Club (FSC)** is an academic/social club that provides students with many fun and cool opportunities within forensics! Club activities include guest speakers, including a **medical examiner** and a student (Brynleigh Armstrong) who interned at the **NC State Bureau of Investigation (NCSBI).** Students may also get to take a field trip to see a **bomb demonstration**, visit the **state crime lab**, or visit a **jail/sheriff's office with a K9 demonstration**. Meetings are held on Thursdays at 5 pm in Garwood Hall 108. If interested, find Forensic Science Club on Engage, or email officer MJ Jackson (jacksonmb3@appstate.edu) for more information! All other officer information and emails are posted on the bulletin board across from the BioSuite on the fourth floor.



# STUDENT NEWS

Written By: Cecelia O'Carroll

## STUDENT ADVISORY COMMITTEE

The Chemistry Department at Appalachian State University has recently established a new Student advisory board to bridge the gap between students and faculty and help bring student ideas to life.

I interviewed two members of the committee, Gretchen Dunn and Charlie Weeks, to see what it's like to be a part of the committee and to see what they are currently working on.

Gretchen Dunn is a senior Certified Chemistry major and is a member of the Student advisory board.

Charlie Weeks is a Senior Biochemistry and Certified Chemistry Major and they are the Committee Chair.




**Question: What do you think students should know about the student advisory board?**

Answer: Students should know that their voices matter and they can bring any ideas and concerns they have to the board and it will be discussed at the meetings. The department really cares about their students well-being and the board is there to facilitate the bridge between students and faculty.

**Question: What is your favorite part about being on the board?**

Answer: It's nice to have an active role in the community and help take action to improve the department. I have really enjoyed giving back to the department that has given so much to me and help create more student community spaces to help other students enjoy the department as much as I did.

**Question: How would a student bring Ideas to the board?**

Answer: Students can talk to any of the board members about their concerns and ideas. Nate is the public relations officer and he is always a friendly face to bring concerns to as well.

**Question: Advice to incoming students?**

Answer: Make friends with your peers and your faculty and don't be scared of the professors. Do research and talk with your classmates, research is the most valuable thing you can gain and it teaches you things you can't learn in classes and the lab.

# FACULTY SPOTLIGHT

Written by Ian Wolniak

**Welcome new research faculty, Dr. Prem Chanda!**
Recently, the Department of Chemistry and Fermentation Science has hired a new tenure track research faculty, Dr. Chanda.



*All information was collected from an interview between Ian and Dr. Chanda.*

**Background:**
Dr. Chanda grew up in Nepal. When he was young, he wanted to serve people and thought about going into medicine. Nepal is extremely biodiverse and home to various climates and ecosystems, and their local cultures utilize an array of medicinal plants. His interest in medicine led him to develop an interest in the medicinal properties of these plants. This interest led young Dr. Chanda to wonder what gives these plants their medicinal properties. These were the thoughts that sparked Dr. Chanda's path to chemistry. He realized that without chemistry, there is no way to truly understand these plants' medicinal properties. Dr. Chanda immigrated to the United States to complete a master's degree at Western Illinois University and then a PhD in Synthetic Organic Chemistry at Purdue University.

**Research Overview:**
Dr. Chanda's research at Appalachian State falls under organic chemistry, specifically synthetic methodology and medicinal chemistry. Dr. Chanda's research group will focus on developing stereoselective reaction methods. A current goal is to target aldol reactions, which are traditionally non-stereoselective and commonly used within the synthesis of medicinal compounds. Dr. Chanda aims to develop a method that achieves greater than 90% diastereomeric or enantiomeric selectivity. Dr. Chanda is interested in using these methods to explore stereoselective synthesis of small bioactive molecules. The group is specifically interested in using these stereoselective synthetic methods to target the synthesis of aromatase inhibitors, a primary treatment for breast cancer.

**What will students learn in Dr. Chanda's Lab?**
Research students within Dr. Chanda's research group will learn various synthetic organic chemistry techniques, including moisture sensitive synthetic techniques. Students will learn extraction and isolation methods for organic compounds. Students will learn characterization techniques, including NMR, and IR. Students will learn separation techniques such as column chromatography and HPLC. Students will strengthen their technical writing and scientific communication skills through poster presentations and possible publication participation.

# ALUMNI SPOTLIGHT

Written by: Ella Tynan

## PAIGE HILTON



Paige Hilton graduated from Appalachian State University in the **Spring of 2026** after working in Dr. Bellemer's research lab. She completed a BS in Chemistry with the Certified Chemist concentration and a Forensic Science certification.

**Q1: What are you up to these days?**

I am currently a biology masters student at Appalachian State, where I am continuing my research with Dr. Andrew Bellemer and teaching two introductory biology labs! I also continue to work in the Stockroom in Garwood Hall, assisting students and laboratories throughout the semester.

**Q2: What was the application and transition process like moving from undergrad to graduate school at AppState?**

The application process can feel very overwhelming! I ended up making a huge excel sheet with all of the schools I was interested in, what date their applications were due, the fee for applying, faculty research I was interested in, and any links that supported any other requirements. The transition has been interesting, as my focus has switched from studying for hours and hours, to reading and discussion heavy courses.

**Q3: What's the best piece of advice you received during college that you're glad you took?**

Talk to your professors and go to tutoring sessions! Not only did talking to my professors help further my understanding of class material, but it also allowed me to build a relationship with them! Being able to communicate with your peers and professors is a super important skill to not only help you academically, but to be able to build up a supportive community around you.

**Q4: How do you manage your busy schedule, de-stress, and make time for yourself?**

Establishing some sort of routine is the best way to manage my schedule! Not every week is the same when it comes to assignments and errands, but trying to keep a routine with work and meetings is a great way to start. To de-stress, I go to the gym, hang out with my fellow chemists, and make sure I have time in the afternoon to do self care. I also love being in touch with nature to keep myself grounded.

# GRADUATE SCHOOL ADVICE

WRITTEN BY: CHARLIE WEEKS

**As the leaves change colors and the semester heats up while the weather turns cold, it just so happens grad school application season is upon us!**

Whether you're an underclassman wondering what your next steps will be after graduation or a senior gearing up to apply, this section serves as a one-stop shop for all things graduate chemistry.

### THE DEETS: Master's

In short, a master's in chemistry tends to focus on advanced coursework as well as development of rugged lab skills over 1-2 years, with only some institutions requiring a thesis. Obtaining a master's sets you on the same industry track your already obtained bachelor's would, however, in the eyes of a prospective employer you would be a more "complete package" and would be fast-tracked to more advanced job opportunities. It should be noted that an M.S does not bar you from R&D positions, however additional job experience in conjunction with your degree will most likely be required. In most cases, you would have to pay out of pocket to obtain an M.S in chemistry.

### Why *Not* Grad School?

There's a lot of great things graduate school can get you, but that isn't to say it doesn't come with downsides; Primarily, opportunity cost. The hard reality is as follows: while your peers who graduated and entered the workforce are earning money and building a nest egg, you will be in financial stasis. While your stipend is enough to live off, it is certainly not enough to match what you could be making in industry, and making ends meet is a reality for many graduate students. Another distinct downside comes in work/life balance. While certainly dependent on your program, what faculty whose tutelage you're under, and if you're pursuing an M.S or PhD, it is not uncommon for graduate students to sacrifice their free time for their goal of an advanced degree. As Dolly Parton once said, "Don't get so busy making a living that you forget to make a life".

### THE DEETS: PhD

If R&D or professorship is your goal, a PhD is your fastest road to get there. Over 4-6 years, a PhD program will see you taking advanced coursework, serve as a TA, as well as cultivate a research project to ultimately expand what we know about chemistry through a thesis defense. As a Doctor of Chemistry, many career paths are opened to you. Do you wish to go into academia? Consider post-doctoral studies to further hone your knowledge in a given field, as well as learn the ins and outs of running a lab rather than participating in one. Do you want to exist at the cutting edge of chemical science? Consider law school and become a patent lawyer. Industry is an incredible option, as most senior level positions are now available for you to apply to. Obtaining a PhD is more akin to working a job rather than "just more school", and every job has benefits. Generally, you will be given a stipend that varies between institutions as well as a tuition waver. Some programs offer other benefits such as health insurance or, in rare cases, subsidized housing.



# GRADUATE SCHOOL ADVICE

WRITTEN BY: CHARLIE WEEKS

## So, You Want to Apply...

### Considerations for Selection

**Location:** Depending on your advanced degree of choice, you will either be spending as little as one year or as high as six in one spot. Make sure your location is one you see yourself enjoying while you weather the storm!
**Principal Investigator and Research Ecosystem:** In a thesis-driven M.S or in a PhD you will be under the watch of a principal investigator (PI), a faculty member with an active research lab. Make sure that when you look at programs, there are multiple PIs whose research you could see yourself contributing to and enjoying. Beyond your PI, you will also be interacting with other students and faculty aka. the broader "research ecosystem" in your given institution. Said ecosystem is a valuable pool of knowledge and means to glean inspiration from that should be taken advantage of.
**Financial Support:** Before going all in, make sure the stipend you're granted is enough to live off. Other considerations include funding duration, whether summer funding and if TA positions are guaranteed for your stay. PhD specific.

### Application Process

**Personal Statement:** What kind of person are you? What can you contribute to the community rather than the academics? Include trials and tribulations plus how you overcame them as well as your passions.
**Statement of Purpose:** Why do you want to be in the specific institution's program? Why are you a safe investment for the university to bet on? What can you do for them? Include career goals, research interests and your academic background. Formal, direct
**Research Statement:** What research have you done? Talk about it at a competent level.
**Recommendations:** Generally, three letters of recommendation are required for most admissions. Ask professors or employers who can speak not only on your aptitude, but also positively about your character.
**Other Requirements:** Standardized testing, GRE may be required. Updated resume and curriculum vitae. Transcript.

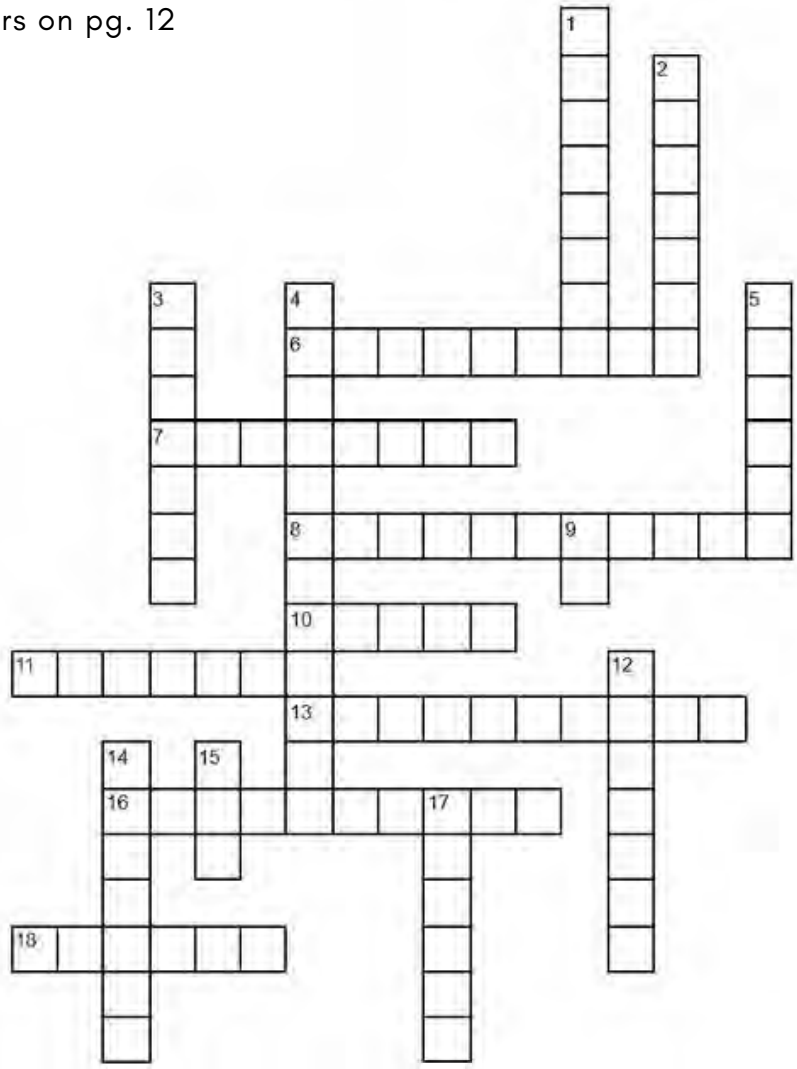
### General Advice

**GPA Isn't Everything:** A high GPA doesn't automatically mean a red carpet; Many schools prefer a well-rounded student.
**Research. Research. Research:** Undergraduate research experience is almost required for admission.
**Prestige Isn't Everything:** A graduate degree is a graduate degree, unless you want to go into academia, prestige should be your last consideration.
**Start Looking Sooner:** There are a lot of schools to search through, don't underestimate the time it takes to choose your future.
**Pick a Positive PI:** Your PI will be a defining feature of your graduate studies and is also expected to be a life-long reference. Once you're in a program, ensure you have a working and positive relationship with them.

# CHEMISTRY CROSSWORD!

By: Elizabeth Moss

Find answers on pg. 12



## CLUES!

**Down:**

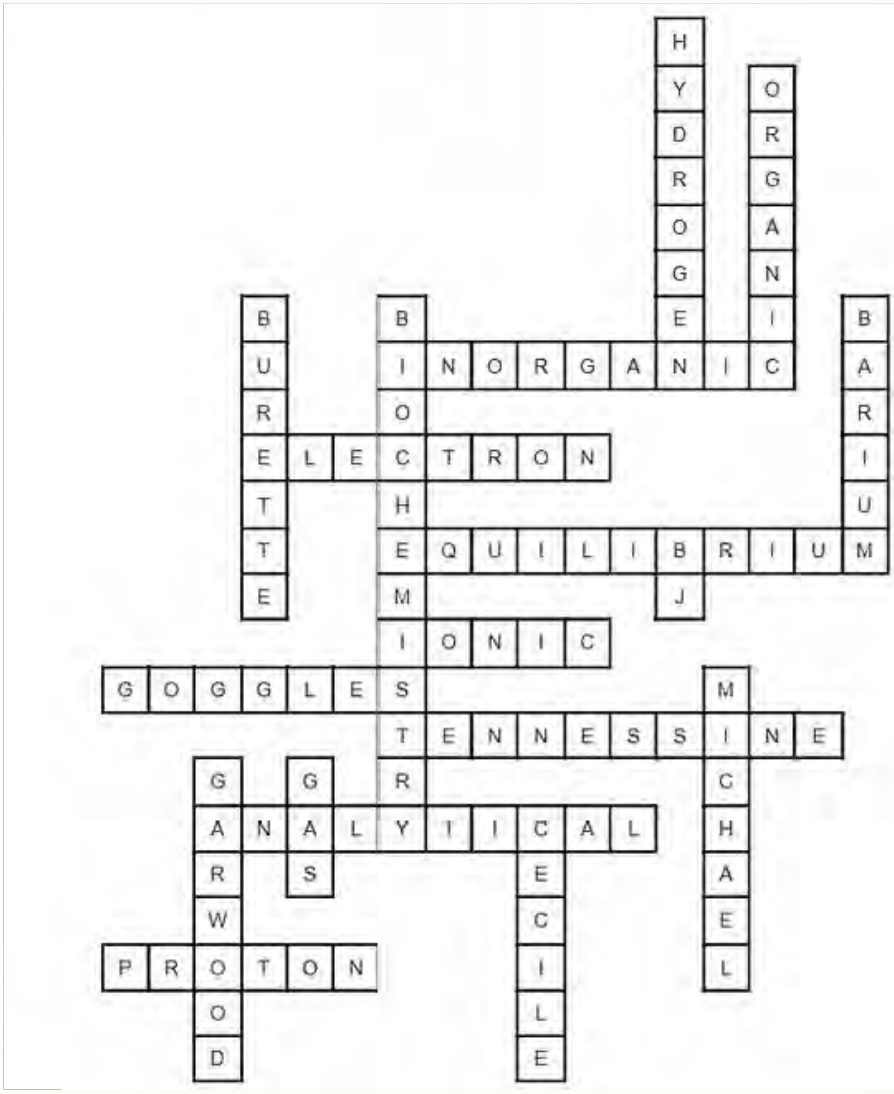
1. A bond that likely contains N, O, or F.
2. The chemistry that focuses on carbon-containing compounds.
3. Glassware used for titrations.
4. Three of our "Dr. C..." professors might be interested in this.
5. What would you do with a dead chemist?
9. Possibly the loudest professor AppState has ever had?
12. Maybe the most common first name in the chemistry department.
14. Building that chemistry is taught and conducted in.
15. Chemical state with no fixed shape or volume.
17. Our lovely department chair.

**Across:**

6. The type of chemistry Dr. Wallen's group researches.
7. A negatively charged particle.
8. What Le Chatlier's principle concerns.
10. The strongest type of intermolecular bond.
11. Personal protective equipment for the eyes.
13. The element that is the only ten-i-see ;)
16. The type of chemistry that Dr. Babyak might teach.
18. It would be found in the nuclei of atoms

# CROSSWORD ANSWERS

By: Elizabeth Moss




**Down:**

1. HYDROGEN
2. ORGANIC
3. BURETTE
4. BIOCHEMISTRY
5. BARIUM !
9. BJ
12. MICHAEL
14. GARWOOD
15. GAS
17. CECILE

**Across:**

6. INORGANIC
7. ELECTRON
8. EQUILIBRIUM
10. IONIC
11. GOGGLES
13. TENNISSINE
16. ANALYTICAL
18. PROTON