LOUNGING ON THE BEACH with your toes in the warm sand, sipping icy lemonade under a shady tree, or simply sleeping in on a sunny, breezy morning—summer is the perfect time for dreaming. That’s especially true for students, who still have a wide-open future ahead of them.

And undergraduates in chemistry are no different. Despite the dismal state of the job market for new graduates, some of these students, as well as recent grads in the field, remain enthusiastic and hopeful about their future career paths. In fact, some dare to dream about ways they can use their degrees in chemistry, biochemistry, or chemical engineering as a springboard into myriad fields.

To get a glimpse of these creative, would-be career paths, C&EN invited undergraduates to tell us about their dream jobs and any plans they might have for landing them.

Here we share a sampling of their contributions, edited for clarity and brevity. We hope these examples will inspire others to find ways to leverage their chemistry education to unlock job opportunities.
It is fitting that I have always had my head in the clouds; my dream job is to be an astrochemist. For me, the joy in chemistry is knowing that everything that I am, that we are, was forged in the hearts of stars billions of light-years away. When I found out that chemistry in space and in the stars was a real field of study, I knew it was everything I ever wanted. I am doing all I can to investigate this field: sifting through the literature, conducting research, and reading up on interstellar reactions and the atmosphere on Titan—my favorite moon! Astrochemistry is heavy on spectroscopy, which has been my favorite type of instrumentation from day one.

I plan to obtain a Ph.D. in astrochemistry. I want to dedicate my life to learning about how new elements and compounds are formed in space. I hope to join the likes of Carl Sagan, Neil deGrasse Tyson, Edwin Hubble, and all of the other space scientists who have shaped our knowledge of the world outside our own atmosphere.

It just takes creative thought and persistence to develop a material or mechanism. It just takes a lot of us working hard. That is the challenge and challenge to me, the dream of Forbes Bowers.

I also want to bring together those in the global community to motivate them to devote their time and effort to help save our brothers and sisters who are suffering from these illnesses.

To prepare to reach these goals, I have already completed two summer internships at a pharmaceutical company, where I worked on new treatments for NTDs. And my next step is to obtain my Ph.D. in organic chemistry.

I aspire to one day work for the U.S. government to help perfect our methods for detecting and neutralizing bioterrorism. I have been motivated and inspired by the need to improve our national security in the face of an increasing number of chemical and viral threats.

I intend to earn my doctorate in biochemistry. I’m currently working in a part-time position for a government contractor, Jacobs, where I am gathering the contacts I need to help move toward my goal.

The research I have conducted at my school and at Case Western Reserve University this summer has led me to love the lab, and because I am partial to being in a leadership position, it is my ambition to manage my own lab.

I have been exposed to research ranging from polymers to biobased materials to biomedical engineering, and I would like to continue on this path. My dream lab would focus on synthesizing biobased materials that could be used within the body. For example, I would direct projects aimed at finding the perfect material to replace nerve cells or creating the optimum drug delivery system based on functionalized polymer designs.

My education has taught me that the sky’s the limit when it comes to chemistry. It just takes creative thought and persistence to develop a material or mechanism. In my lab, I would strive to use the fundamentals of chemistry and cutting-edge engineering to create desirable products.

The path to my dream job is less of a fantastical vision and more of an absolute goal that I plan on reaching in the near future. Because of my involvement in research, solid GPA, and perseverance, I am certainly heading in the right direction. Thus, I plan to simply keep going.
Last summer, I was selected to join a research program for undergraduates at the University of Tennessee, Knoxville. I was still somewhat new in my major and trying to figure out what I wanted to do with chemistry. I knew I wanted to work with polymers and be involved in synthesis, but I didn’t know how or where I would do those things.

However, all that changed when I took a field trip halfway through the summer to Oak Ridge National Laboratory. It was a profound experience! I was able to talk to researchers and get firsthand knowledge of what it is like to work in a national lab. All of the individual labs were fantastic, equipped with instruments that a young chemist could only dream of using, not to mention a nuclear reactor!

Walking through the vast expanse that is Oak Ridge, I knew, at that moment, that working in a place like this was something I wanted to do. Ever since, I’ve been working hard so that I may one day work in the national lab of my dreams.

**FORENSICS FAN**

**Amanda Raley,** Stephen F. Austin State University in Nacogdoches, Texas; B.S., chemistry, anticipated June 2016

I’ve always been interested in criminal justice. When I was young, I enjoyed watching the television series “Forensic Files” and “The Investigators” with my mom, so I originally thought that I’d be a private investigator. However, when I took my first chemistry class as a sophomore in high school, I knew right away I wanted to devote my life to being a forensic chemist. By taking this path, I will be able to combine my loves for chemistry and criminal justice (and helping others).

I am ecstatic to be part of an outstanding chemistry department, which has been helping me work toward my dream. My professor and research adviser, Russell Franks, has helped me tailor my research and even my lab bench to make it look and feel like a forensic lab setting.

After finishing my undergraduate degree, I plan to earn a master’s degree in chemistry. However, I’m in no hurry to finish school; I want to keep learning!

With no other family currently in the physical sciences, I am the first in a few generations to branch outside of computer science and accounting. They’re doing what they love, and I’m doing what I love, and I wouldn’t have it any other way!

**NATIONAL LAB AFICIONADO**

**Jessie Ellett,** University of North Georgia, Dahlonega; B.S., chemistry, anticipated May 2015

My dream is to work in not one, but two professions. After finishing my undergraduate studies, I will be going somewhere outside the U.S. to pursue a professional soccer career. During this time, I plan to begin work toward earning a Ph.D. in infectious disease epidemiology. Through this plan, I hope to be able to pursue two of my passions—playing soccer, which I have loved since I was five years old, and wiping out infectious diseases, which captured my attention after I read the book “The Hot Zone,” by Richard Preston, a few years ago.

**MATERIALS MENTOR**

**Brad Jacobs,** Ryerson University in Toronto; B.S., chemistry, anticipated June 2015

My dream job is to be a professor of materials chemistry. After taking polymer chemistry and materials chemistry courses, I became fascinated with the way that imagination, creativity, and chemistry combine in making molecular wires, solar cells, and other devices for energy and electricity generation. I have loved studying about modern trends in materials science and learning about where the field is headed in the coming years.

After earning a bachelor’s degree, I plan to apply to Ryerson’s Molecular Science Program, a research-intensive, interdisciplinary graduate program, so that I can continue to study advanced inorganic polymers and materials used in the electronics world. Eventually, I hope to teach students just like me, who are starving to get their fill of chemistry and, more specifically, materials science.

**MAKEUP MAVEN**

**Nia Gholston,** University of Cincinnati; B.S., chemistry, anticipated December 2014

Becoming a cosmetic chemist has been my dream since I was nine years old, playing with hairstyling products by heating them up on a light-bulb. In addition, I would like to own my own cosmetics company.

To reach that goal, I plan to gain experience by landing a job in the cosmetics industry, obtaining a few patents, and earning an M.S. in cosmetic science.

I didn’t meet anyone in the industry while I was growing up, and that was a disadvantage for me. So, when I achieve my goals, I hope to be the role model I never had, encouraging someone to have the confidence to follow his or her dreams.

**BIG-PICTURE EDUCATOR**

**Trevor Nicks,** William Jewell College in Liberty, Mo.; B.A., chemistry and secondary education, anticipated May 2017

My dream job is to be a high school chemistry teacher or college professor. In addition, I want to help promote the importance of an in-depth standardized high school science education.

My concern is that the emerging Common Core State Standards don’t provide a strong curriculum for science teachers to follow across all states.

In the future, I want to work with a group of elementary and high school science educators, college professors, and professionals in the fields of chemistry, biology, and physics to create a set of robust national science education standards that will set the U.S. on track for scientific success. That’s critical because so much of what we accomplish as a nation is based largely upon the strength of our scientists and engineers.