In this example, Sydney is replying to the following job posting for a research assistant.

> *"Dr. Carton's research focuses on how neural circuitry affects perception, cognition, and behavior, which plays an important role in understanding the mechanistic basis of neurological disorders. The research centers on the study of neural circuit organization and function. Undergraduate research assistants are needed to complete work including brain sectioning and immunostaining, brain mapping, slice imaging, and data analysis. After training, research assistants are expected to conduct independent projects that require them to collect and analyze data, summarize it into scientific writing, and present the data to the team. In the past, some research assistants have been included as co-authors on Dr. Carton's formal publications."*

Here's an example of an excellent cover letter for an undergraduate research assistant.

> *Subject: Research Assistant Application for Sydney Darnay*
>
> *Sydney Darnay*
> *500 Tellson's Way*
> *Palm Desert, CA 12345*
> *sydney.darnay@ucps.edu*
> *(555) 433-2211*
>
> *February 10, 2021*
>
> *Dr. Alexander Carton*
> *Professor of Neurobiology, University of California - Palm Springs*
> *1000 Greek Street*
> *Palm Springs, CA 12345*
> *alexander.carton@ucps.edu*

Dear Dr. Carton,

I am excited to submit my application to be considered for the research assistant position on your Neuroscience Research team. As a Neurobiology major, I have gained the knowledge and experience necessary to contribute to your research on neural circuit organization and function. My skills, combined with a fervent interest in your research on the mechanistic basis of neurological disorders, make me an excellent fit for this role.

In my Neurobiology Lab, I sectioned the brain tissues of a rabbit and a sheep, earning a perfect score for following the correct protocol. For an Advanced Neurobiology project, I used EEG equipment to map the brain activity of two classmates while they completed memory tests. We analyzed the resulting data to compare their short term and working memory abilities. I took the initiative to gain more experience analyzing data by using PyMVPA software for neural decoding with the guidance of my faculty mentor.

Last year I discovered my skills in scientific writing. My professor selected my piece on molecular genetics to use as an example for future students. I have continued improving my skills by meeting regularly with a tutor at the Writing Center and am confident that I would be an excellent co-author in one of your formal publications.

Prior to freshman year, I shadowed a neurologist specializing in work with Alzheimer's patients. Observing her work gave me a unique perspective of neurological disorders, as well as a passion for finding cures. I have further developed that passion by volunteering as a learning aide at a dementia care facility, where I observe and record results of cognitive tests. I was captivated by your recent research on the relationship between neural circuit architecture and working memory, as well as the positive implications it holds for patients suffering from dementia. I hope for the opportunity to contribute to your future findings on cognition and memory.

I plan to devote my career—as you have—to increase our understanding of the brain and improve the lives of individuals with neurological disorders. Your lab perfectly aligns with my scientific and medical interests. I would appreciate the opportunity to discuss your research project with you and the contributions I can make as your research assistant.

Sincerely,

Sydney Darnay

In this letter, Sydney establishes her experience and knowledge, not to mention her familiarity with Dr. Carton's work. On top of this, she comes across as polite, professional, and enthusiastic, while demonstrating that she can write well. All of this goes a long way towards demonstrating that she would be an excellent fit for the job.

*Example taken from Shemmassian Academic Consulting website.

Here are two more good examples of cover letters for research from the NIH website:

#1

I am a current senior at X University majoring in Biology and History, with a minor in Chemistry. After graduating in May of 2007, I would like to spend a year pursuing my research interests at the NIH. As a junior, I learned about the Postbaccalaureate IRTA program and the great wealth of research opportunities available through the program. Since that time, I talked with several X graduates about their experiences with the program, and all discussed with me their enthusiasm and appreciation for what the program taught them, and how their experiences at NIH enriched their skills and interests in research. Through my four years of research experience at X, I have grown increasingly dedicated to expanding my knowledge and abilities in the field of research. I hope that given the opportunity to work as a Postbaccalaureate IRTA trainee, I can continue to pursue these goals. I spent my first year at X under the direction of Dr. A., working on imaging cells infected with Leishmania donovani in order to analyze the accumulations of inorganic and organic osmolytes following infection. I enjoyed my work in

the group, and the summer following my freshman year, through the Y program, I began research in Dr. B's cell biology laboratory in the X University Medical Center. Since then, I have dedicated several independent study credits to this lab. My research has focused on the heat shock protein, GRP94 (gp96), which acts as a tumor antigen to induce anti-tumor immune responses, a process requiring receptor-mediated activation of antigen presenting cells (APCs). The unique receptor for GRP94 functioning in APC activation is currently under dispute, and was the focus of my research aims. I have implemented indirect immunofluorescence and flow cytometry methods in order to examine binding, colocalization and trafficking patterns of GRP94 and speculated receptor ligands. Other techniques I have had experience with in the laboratory include PCR, SDS PAGE, stable-cell transfection and gel electrophoresis. I am currently working on a senior thesis focused on this research. Through my four years of research experience in college, I have grown increasingly interested in a wide variety of research areas, but particularly in cancer biology and immunology. I would like to spend the next year working on the translational or clinical applications of research focused on cancer immunology, tumor antigens, vaccine development, tumor metastasis and/or immunotherapy. Along with these interests in a wide variety of cancer and tumor related research areas, I would also enjoy pursuing research on heart disease, stem cells, drug development, epidemiology, and other disease-specific research areas. After spending a year pursuing these research interests, I would like to attend medical school. I think the Postbaccalaurete IRTA program would be a great opportunity for me as someone who would like to take a year before entering medical school to expand my knowledge and to make a meaningful contribution to an area of science that is of particular interest to me.

#2

I am writing to apply for a position in the Postbaccalaureate Intramural Research Training Award Program at the National Institutes of Health. I learned of this opportunity through the Health Careers Office at X University, and my interest was piqued by discussion with current program participants. I am a 2007 graduate of the X chemistry department with classroom and laboratory experience focused in physical chemistry. As an aspiring M.D./Ph.D., my desire is to apply my strong knowledge of this field to an area of medical interest. I believe that the NIH, with its broad range of research topics and commitment to cutting-edge techniques, would provide the best opportunity for channeling my skills into this specialized area of medical research. As a chemistry concentrator at X, I covered a broad range of course material, ranging from the physical to the biological. I spent four full years as a research assistant in a physical chemistry laboratory. Over the course of this position, tasks included optical

alignment, x-ray and UV spectrometry, and liquid sample preparation. I also had the unique opportunity to prepare an optical arrangement for a project at the Y Linear Accelerator and to observe both the installation and data collection revolving around this setup. My summer position as an organic chemistry teaching assistant provided experience in organic syntheses and techniques. Biology courses introduced such techniques as DNA manipulation and extraction, cross-breeding of fly stocks, and obtaining physiological data. My wide range of laboratory experiences, paired with my long- term position in research, has made me a well-rounded researcher with the facility to learn new techniques. My experiences as a researcher also vary widely with respect to personal communications. Interactions ranged from educating elementary school students to communicating on a personal basis with professors and graduate students in the laboratory. My time as a clinical researcher, as well as time spent shadowing a surgeon, has given me the opportunity to connect with patients and research subjects on a personal and information-sensitive basis. My wide range of interactions has given me the combination of confidence and compatibility necessary to work effectively with people in a research setting and maximize productivity. I believe that my experience as a researcher and scientist would make me an asset to the IRTA program. I would appreciate an opportunity to discuss my qualifications as well as the best way to channel my experiences into the medical field. I am easily reached by cell phone or by e-mail. Thank you for your consideration, and I look forward to hearing from you.