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In Their Own Words: How Summer Science Research Impacts Linfield College Students

Linfield Magazine Staff

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In their own words

How summer science research impacts Linfield College students

Nalea Trujillo '17

Biochemistry and molecular biology major

Honolulu, Hawaii

Project: *Fabrication and characterization of sol- and aero-gel materials containing novel silver and gold nanoparticles for chemical sensing applications.*



to data collection and analysis, to communication about our project. The ability to break down complex processes and details into relatable, easy to understand concepts is a skill I'll use for the rest of my life. I've come to see just how collaborative 21st century science really is – we collaborated with other faculty and research students from the Chemistry and Physics Departments, in addition to our lab in the Biology Department.

A lot of learning occurs during research, a good portion of which cannot be learned through traditional coursework. Formulating and investigating theses, working independently in lab and adjusting to obstacles along the journey stretches my mind and enhances my skills. Research keeps me interested, motivated and inspired in the sciences. Research has taught me the value of good work ethics including efficiency and responsibility.

Austin Browning '16

Biology major

Boise, Idaho

Project: *Discovering and deciphering the role for a component in the miRNA-mediated gene silencing pathway*



Research teaches me how real-world science works, from the designing of the experiment, to the development of new protocols and procedures,

Marisa Specht '16

Environmental science major

Eugene

Project: *Enhancing razor clam management using molecular probes for pathogen detection, developing a protocol to screen clams for infection*



Research gives me the opportunity to apply the knowledge and skills I learn in the classroom in a hands-on situation. This allows me to understand the concepts we learn in class better and opens my eyes to the different ways they're used outside of an academic setting. Research is important to me for my future career because the best thing I can do now is gain experience in the field and in the lab. This is the time for me to develop my skills. Things almost never turn out the way you want them to and it's important to be able to think quickly on your feet.

Flint Martino '16

Applied physics major
Kalispell, Mont.

Project: *Finding mechanisms for decreased mobility in graphene field-effect biosensors*

I have worked different jobs since I was 16 and have never enjoyed a job day-in and day-out the same way I do this one. The work allows me to get a better idea of what type of job I am looking for in the future and provides me with helpful experience that could be a stepping stone for that job. One of the vital concepts I learned was how to read and comprehend research articles. This allows you to understand what other scientists are doing and the different processes they use, which in turn allows you to apply your own ideas to what they are doing. Research is a lot of piggybacking because in all honesty it takes quite a few people working together to advance science.



Alleeta Maier '18

Math and physics major
The Dalles

Project: *Application of inverse problems in imaging*

I'm getting hands-on experience in a field I'm interested in pursuing. This experience gives insight into what kinds of work I'd be doing if I decide to continue with math through my career. Having the opportunity to be published in a scientific journal by the time I finish my undergraduate degree would be incredible and not many students get to say that. The most important and dynamic knowledge base I'm gaining is full of more basic skills like how to code in MATLAB and Latex, how to read a



scientific paper effectively and how math research is conducted on a fundamental level.

Kuzivakwashe Rusere '17

Applied physics and
mathematics major
Zimbabwe

Project: *Building "Wildcat," a robot, which will be entered in the Intelligent Ground Vehicle Competition in June 2016*



Working on this project has allowed me to have a better understanding of my fields of interest and also allows me to apply what I have learned in classes. I have learned a lot from working with other students and Dr. Tianbao such as different techniques in metal fabrication and making parts for the vehicle, and application of physics concepts and theories for the overall project. I have always been interested in robotics, fixing electronics, repairing machinery and understanding how things work mechanically. I have this need to explore my technical side, so working on this project has been both fun and educational for me.

Summer research across the curriculum

Some 46 students worked with 29 faculty members on summer research projects in areas of the natural sciences, humanities and social sciences. A combination of grants and endowments providing more than \$260,000 helped fund the research activities. In addition to conducting research, students presented their work to the Linfield College community at the end of the summer.