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Georgia Southern University

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Juan Blas

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Being a student athlete is already a very rewarding and challenging experience, but what about having to do graduate level research while still playing on a team? To some, it sounds like it would be impossible, but for Georgia Southern graduate student and midfielder Jack Philp, it's just another day.

Jack is taking the research path for his master's program, where he observes the genes of zebrafish and studies ways that affecting their genes can affect human genes.

“By tweaking the genes of zebrafish, you can see the different effects it has on their development and normal processes, and then the idea behind it as well, you can translate that into human research.”

Jack discussed that this study was a key part of what he wanted to do in the future, that being to help people find alternatives to addictive painkillers.

“If these compounds have contributed to the research, then down the line they can help someone wean off addictive agents or help someone's pain, that's the best feeling for me.”

Of course, he would have never even thought to enter this field if it wasn't for a major role model in his life. That role model was none other than his own mom. By watching what she did for a living and how she was able to help people, Jack knew that he wanted to go into the bio-medical field.

“My mom's a nurse as well, so watching her go through nursing and helping people and stuff, I thought I could do a bit of both, where I could follow my passion for science while also helping people, and biology was the best of both. With bio-medical sciences, that's kind of how I started off on that path.”

But how does zebrafish research factor into working on humans and seeing how we react to various compounds and medicines? For that, Jack explained that zebrafish were something
called a “model organism.” Having not only an organism that your work can easily be transferred from, but also having something catalogued by a lot of researchers, it has made their research go so much smoother.

“When we work with these organisms, we work with them first and foremost because there’s a translatable nature to it, but also the fact that because there are so many studies that involve them, they're well catalogued. So, if you're filling in different pieces of the puzzle with zebrafish, then if someone else comes back with a certain effect a drug has, we can so "Oh, well this paper had this effect, so this is more than likely the reason for the response."”

This all sounds like a lot of complicated and hard work. And you would be right to think that, as Jack says that that hardest part of these research projects are the parts where it isn't even in their hands. They work with other departments as well, most notably the chemistry department, and they must make sure the compounds work for their needs.

“The biggest hurdle we have had is that this project has been going on for a while, so there has been a lot of handoffs ... So, the biggest challenge we've had is basically making sure the compounds are consistent, and it's been a bit of a process to learn because we've learned there's a particular range, so if the ring isn't completely cyclized, the reaction doesn't happen.”

Jack is almost at the end of his graduate journey, as he'll be graduating this coming December. He has a good idea of where exactly he wants to end up in his future endeavors, but he knows that his options aren't limited.

“I really want to continue doing that [research] once I graduate in December and potentially cancer studies, it's an area of research that I really want to go into, but there's a lot of different areas in the profession and where research can go into, because of how weirdly and closely related we are to zebrafish.”

Jack is incredibly thankful for those that have been in his corner during his time in the program. His advisor and professors are just some of the people that he expressed gratitude towards, as well as the entire biology department.

“The biology department here is excellent in terms of the support you get, so my advisor can point you in the right direction as well, and that's the same for most people working on their projects.”