



The Grass Classroom and the Undergraduate Research Lab: First-Person Experiences in Being and Mentoring Student-Athletes in Undergraduate Research

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Undergraduate research involvement and collegiate athletics are empowering experiences for students (Blinde et al., 1993; Saucier et al., 2020). However, the benefits of these opportunities have often been considered separately. For instance, undergraduate research is a high-impact educational experience that tends to increase students' confidence in their research abilities (Saucier & Martens, 2015), classroom engagement (Hunter et al., 2007), and persistence in and satisfaction with their college experience (Bauer & Bennett, 2003). Similarly, student-athletes tend to experience a heightened sense of belonging (Strayhorn, 2019), which is also linked to an increased likelihood of academic motivation (Goodenow & Grady, 1993; Lam et al., 2015), academic success (Pittman & Richmond, 2007), and improved self-efficacy (McMahon et al., 2009). Further, student athletes benefit from athletic involvement in ways that tend to increase their early career success post-graduation (Lally & Kerr, 2005; Sauer et al., 2013). For example, athletics tend to foster leadership abilities, commitment to one's institution, and the ability to work in teams (Aries et al., 2004; Brand, 2006; Sauer et al., 2013), all of which are also important skills for aspiring researchers.

Although undergraduate research and athletic involvement are invaluable experiences, they are also especially time-consuming opportunities that can be difficult to manage simultaneously (Miller & Kerr, 2002). As such, many student-athletes may not take advantage of both opportunities, presumably because they do not have the time or have relatively low self-efficacy beliefs in their ability to design, conduct, and critique independent research projects (Carpi et al., 2017; Saucier et al., 2020). Student-athletes may also experience more unique obstacles than their nonstudent-athlete counterparts that interfere with research involvement, such as intense time commitments (Jolly, 2008), absenteeism (Keith et al., 2005), increased physical fatigue (Carodine et al., 2001), and/or lack of academic support from their athletic department (Nite, 2012). Despite these obstacles, we believe student-athletes are particularly well-suited for undergraduate research but face unique challenges to getting and/or staying involved in such high-impact educational experiences.

Indeed, students who pursue both undergraduate research and collegiate athletics are likely to experience considerable difficulty in navigating these opportunities. Mentors are vital in helping students be successful as both researchers (e.g., Saucier et al., 2020) and athletes (Baker & Griffin, 2010; Comeaux, 2010; Park et al., 2017; Passmore et al., 2013). As such, it is important for

mentors to empathize with the unique challenges associated with both undergraduate research and athletic involvement. However, there is a paucity of evidence concerning the best practices associated with mentoring such individuals. As an initial step to address this lack of evidence, our research objective was to collect the experiences of student-athletes who had engaged in undergraduate research, and to use those experiences to craft practical recommendations for mentoring student-athletes in undergraduate research in ways that empathize with the unique challenges they face. Accordingly, this current narrative of first-person experiences provides a unique opportunity to hear insights about how to navigate these different opportunities from the perspective of current researchers who were collegiate student-athletes. By having individuals reflect on their experiences as student-athletes involved in undergraduate research, the current study provides a qualitative framework that can be used to provide perspective, facilitate empathy, and inspire creative solutions for individuals (e.g., instructors, mentors, and coaches) interested in helping student-athletes successfully navigate undergraduate research opportunities.

Our Survey Respondents and Methods

Four of the five authors of this article were student-athletes in college (Amanda, Slava, Don, and Ashley). One of these former student-athletes (Don) is now a professor of psychological sciences at a large state research university, one (Amanda) is an assistant professor at a liberal arts college, and the other three authors are doctoral students in psychological sciences at that university. We introspected about our own experiences as student-athletes to better understand our collective experiences. We created and completed a survey of those experiences to provide some organization for our experiences so that we could identify patterns of support and challenges for student-athletes as emerging research scholars and use these patterns to provide recommendations for mentoring student-athletes successfully in research.

The four authors who were student-athletes played at four different Division III colleges but worked together in the graduate program in psychological sciences at a Division I university. Two of the former student-athletes are women (Amanda and Ashley) and played softball. The two men played football (Slava and Don), and Don also competed in track. Slava, Don, and Ashley participated in athletics all four years of college; Amanda participated only in her first year of college. All participated in off-season workouts, engaged in undergraduate research for at least two semesters (including summers), and presented their research as a capstone to that experience (e.g., at a local or regional forum or conference). Don has mentored several student-athletes at a Division I university and Amanda has mentored several student-athletes at a Division III college. These individuals each provided unique responses to survey questions about their experiences as student-athletes and mentoring student-athletes in undergraduate research, and their individual responses give rise to interesting conclusions that inform our recommendations for mentoring student-athletes successfully in research. These survey questions are listed below, with a summary of the responses to each from our former student-athletes.

Findings

What difficulties, challenges, or obstacles did you face as a student-athlete involved in undergraduate research?

Two of the former student-athletes discussed not having many challenges as a student-athlete involved in research because these experiences did not overlap much for them. Interestingly, the reason for the lack of overlap was their perception that they could not simultaneously navigate those experiences. Amanda said, “I stopped playing at the collegiate level after my first year because I didn’t believe I could balance everything in the academic school year. I was entirely overwhelmed after my first-year and decided against continuing to play because I felt it took up too much time.” She said, due to the increased difficulty of her academics compared to what she experienced in high school, she “was pulling long nights (many times all-nighters) to keep up with class work and

softball/vocal schedules. Over the course of several meetings, [my advisor] helped me conclude that my current schedule was not sustainable (for me)." She continued that, with financial concerns, "we concluded that softball was the biggest competitor for time in my schedule, and that not having it would allow me the time I needed to focus on the academic side of my college experience." Amanda summarized her situation by stating, "My story is not one of a successful collegiate-athlete." Right away, it appears that the sheer magnitude of the domains academics/research and athletics compete in ways that force student-athletes to choose where to focus their finite time and energy.

Ashley also stated that she had little difficulty in managing the overlap between her athletic and research commitments because she did not pursue an undergraduate research experience at her college. She did so instead at a research university over the summer during her offseason. She stated, "I was not involved in research as an undergraduate at my institution because of my athletic commitments. I did not have time between practice, games, and lifts, and I chose to prioritize my classwork." Feeling forced to choose between research and athletics, Ashley chose athletics, but managed to add in her research experience during her summer.

Slava and Don, while managing to effectively juggle their academic/research commitments with their athletics, both discussed the challenges of doing so. Slava stated, "The main challenge was to make sure that all of my research related tasks were completed in a timely manner. During the season, I could not afford to stay up late to work on things because it would negatively affect my performance." Don stated the biggest challenge was "Scheduling! As a three-season athlete, I had practices, training and rehab, meetings, games, and meets constantly. I literally had no off-season. It was hard to fit everything in. It was hard to not only get meetings and research sessions scheduled, but also to get the work itself done. My athletic involvement was important to me, and I invested a lot in that not only physically, but cognitively and emotionally. I was strapped for time, and physically, emotionally, and cognitively fatigued." Strikingly, all four student-athletes agreed that, even at Division III colleges, their athletic participation was a challenge that was overwhelming and sometimes insurmountable.

Was being involved in undergraduate research a priority at your undergraduate institution?

The former student-athletes reported that undergraduate research was a priority to varying degrees at their colleges. Ashley stated, "Undergraduate research was not a priority at my undergraduate institution, especially in our psychology department. My institution was more teaching-oriented than research-focused. My institution highly recommended outsourcing our research experiences." While she had to pursue research over the summer at a different institution, Ashley reported that, "I think it did make me more marketable for graduate school and provided me an opportunity that my institution couldn't." Amanda stated that it was not a priority to the same degree that it was at the university where she attended graduate school, and that only some of the faculty in her undergraduate department were active in research. Slava stated that the faculty in his undergraduate department "did not have any research expectations", but that "research was built into the curriculum. Many of our classes included collecting and analyzing data. We also had an option to do an empirical thesis project. Our professors were also diligent about taking us to local conferences, where we had the opportunity to present our research." Don reported that undergraduate research was a priority at his undergraduate institution. He stated that many of the students from his college went to graduate, medical, or law school, and that, "There were less than 2,000 students and no graduate programs, and the faculty were research active. Getting undergraduate research experience was an important part of our education in building our skills and experiences to be both competitive for getting into grad/med/law school and being successful when we got there." It appears from these four experiences that there is definite variability in the opportunities for and support of undergraduate research offered at various colleges and universities. Combined with the earlier reported experiences, it appears that institutions that prioritize the

undergraduate research experience more also make the combination of that experience with athletics more realistic.

What were some of your strengths/weaknesses you developed being an undergraduate researcher and a student-athlete simultaneously?

Each of the former student-athletes discussed several strengths of having been an undergraduate researcher as well as a student-athlete, noting that having to juggle these multiple responsibilities enhanced their efficiency at doing so. Ashley described successfully managing her multiple responsibilities, “During that fall trimester, I was writing a manuscript, taking three classes, practicing five days a week, and lifting at 6AM three days a week. It was not easy, but having been an athlete my whole life, I developed great time management skills, so I didn’t suffer even though I somewhat expected to. The time management skills I learned from being a student-athlete made me successful in writing that thesis without lessening my commitment to my team (which wasn’t an option) nor losing sleep.” Slava also explicitly mentioned how his time management skills developed at least in part to protect his sleep schedule so that he was rested for his athletic pursuits, “I think I was able to budget my time pretty well and was always on top of my lab assignments, at least in season. I knew that staying up really late was not an option when I had practice the next day, so it was really important for me to be efficient and get things done early.”

They also discussed how being student-athletes made them more receptive to direction and feedback in the academic domain. Their familiarity with athletic coaching, in which they received immediate (and often negative) feedback on their performances was mentioned as a strength in making them more resilient in their research and academic pursuits. Slava stated, “As a football player I was given orders/instructions/commands and was asked to follow them precisely. I think that this is a general skill that transferred to being a research assistant.” Amanda stated, “One of the transferable skills that came from being involved with sports was my response to feedback. I’m coachable. I take feedback well. Compared to my peers who did not have a sports background, I took it well and it motivated me to do better. I took feedback as more of a plan of action to improve whereas I saw many peers take it as a hit to their self-concept or self-esteem. When you’re involved in sports, you’re critiqued constantly and you quickly learn that that critique is done to help you improve. Sports train you to view feedback and constructive criticism as a necessary part of improving. As a student new to research, feedback and taking feedback well is a huge part of the process. Being able to take feedback and respond well to it is part of the process for any stage of the research career.”

Don provided more discussion of how athletics help build the work ethic and resilience to propel research success, stating, “I think my strengths included not being afraid of working hard. One of my high school football coaches talked about sports being the ‘grass classroom.’ He talked about how working through fatigue, stress, and failure in sports would translate into our working hard in other domains, such as studying for tests, and how working with our teammates toward common goals would translate into our being better leaders and collaborators in other domains, such as work and school. I felt that. I also believe that my athletic achievements helped me be confident in my abilities in academics and undergraduate research. Getting constant feedback from my coaches, positive and negative, helped me to understand and incorporate that feedback without taking it personally (and sometimes even finding the humor in my mistakes – my favorite was when I dropped a pass at football practice and a coach yelled, ‘You better learn to catch the ball! There ain’t no Division IV!’). This definitely helped me develop the resiliency that propelled my efforts in graduate school, the job market, publishing, and the tenure and promotion process. I have seen how students (both undergraduate and graduate) with athletic backgrounds seem to better understand that negative feedback is something you can learn and improve from, not something to get upset or offended about.”

Amanda furthered this theme by discussing how athletic performance's reliance on repetition builds fortitude for research pursuits, stating, "Being involved in an undergraduate research lab requires a lot of repetition. From entering piles of data, to practicing a spiel over and over until your head is wrapped around it, to learning to write. Repetition is also a necessary part of playing any sport. I wish there was a count for the number of grounders, pop flies, line drives, and swings of the bat I've taken in my lifetime. Being involved in sports taught me that new skills are built through repetition – even when that repetition seems tedious and like you're never going to get it. Being involved in undergraduate research is sometimes tedious and intimidating – keep practicing."

Amanda mentioned several other strengths that her athletic participation developed that she applied to her research and academics. She likened presenting research at conferences to "Game Day," noting, "you learn how to be present and put your game face on," and that, "Putting 'my game face on' and doing what I needed to do to come cognitively ready to play, helped me in my undergraduate and graduate research experiences." She noted that the action of playing sports in front of spectators helped her in research presentations because it taught her "to take the feelings of anxiety and turn them into something I could use to improve my performance. I would tell myself I wasn't nervous, I was excited – that the physical response to the situation I was having was my body getting me prepared to do what I needed to do." She noted that sports helped her understand the importance of being a team player, where the "name on the front of the uniform is more important than the name on the back." She stated the similarity to the research experience, "Research isn't done in a vacuum. It is done with people. If you can't work with your PI, other lab members, reviewers, or editors, the research project (the name of the front) isn't going to go far quickly." She added that she learned about accountability and responsibility from her athletic participation, stating, "You have to show up for your teammates. You have to be present. You have to take responsibility. Sometimes, especially when you are an older member on a team, you have to take responsibility for an error or bad play in the moment ...even when it is not yours to own. You do this so that your team stays up." Relatedly, Amanda discussed how playing sports helped her learn to overcome her errors, "Making errors is an unfortunate part of both research and sports—and your job is to make efforts to minimize them. This can be difficult if you ruminate on the error. Sports taught me that ruminating simply led me to more errors. If I made an error and focused on the error, it was likely that if the ball was hit to me again, I would make another error. I had to learn how to overcome the errors and move on. One of the ways in which I learned to overcome my errors on the field was to own it. When I made an error during a game, I'd pat my chest twice with a 'that was my bad' nod to my teammates, shake my head about it, and then move on ready to show my teammates that I wasn't going to do it again. When I made errors in research, I had to do the same thing – own it, learn from it, shake it off, and move on ready to make sure it didn't happen again." Finally, Amanda discussed learning to take the initiative from her athletics involvement, stating that in sports, "if you want something, you have to go after it. In undergraduate research, it is easy to simply listen to your PI and do only and exactly what they tell you. However, this may not always result in the best outcomes. You have to take initiative. PI's are busy and undergraduates have to compete for their time. Being able to go after what I wanted and knowing that my initiative was related to my success (i.e., you get out of an experience what you put into the experience) was a strength I developed through sports and transferred to my undergraduate research experience and beyond."

A theme that emerged in these responses, and that should not be understated, is that athletics provides metaphors for other experiences. This is probably most apparent in Don's account of his coach's notion of athletics as the "grass classroom" in which skills and learning are acquired and then applied to other domains. Amanda summarized this notion by stating, "Sports taught me to take cheesy sayings, soundbites, or weird quotes and apply them to life."

The former student-athletes generally identified few weaknesses of having been undergraduate researchers and student-athletes simultaneously. The most common weakness was dealing with the time conflicts, which was noted also in their responses earlier in the survey. Ashley reported, “feeling over-committed to multiple things. At times, it was hard to feel like I was fully present at practice/writing the thesis/doing classwork because I felt like there was always something more I could do to make one of my other commitments better. I felt spread too thin at times compared to my other friends who weren’t athletes who had similar thesis and classwork demands.” Interestingly, Ashley then immediately framed these challenges as a positive thing, stating, “This experience undoubtedly reiterated my time management skills that have helped me be successful in graduate school thus far.” Don stated that his weaknesses in these simultaneous endeavors were, “my lack of time and energy.” Amanda noted some additional weaknesses about how the mindset for athletic competition may not generalize well to research and academics. She stated, “I think I sometimes get competitive about things that shouldn’t be competitive.” She stated that while some competition may be healthy, excessive competition can “be toxic in an undergraduate lab environment.” Amanda also noted how the accountability demanded in team sports, which often produces confrontations among players and coaches in athletic situations, may be less appropriate in a lab setting. She said, “I easily get annoyed/frustrated if I think people aren’t doing what they’re supposed to be doing. There is definitely a ‘you need to do what you need to do to get the job done – or get the f*** out’ mentality that comes from sports.” She noted how this mentality could hinder working relationships with others, especially those who do not share that mentality.

Can you think of a single moment or experience in which being a student-athlete and being an undergraduate researcher were in direct conflict?

The former student-athletes each provided responses that showed how their research and athletic experiences conflicted. Even when they said they did not have direct conflicts, it was due to their planning ahead to proactively avoid these conflicts. Slava stated, “Fortunately, I did not have any issues with this. The meeting times were pretty flexible. The conferences we went to were also in the spring semester, so that did not conflict with football season.” Similarly, Ashley discussed how she pursued a research opportunity that would take place during her offseason to avoid these direct conflicts. Ashley also discussed how her presentation did happen during her softball season, and conflicted with her team’s practice or games, depending on the weather and consequent changes in scheduling. She said, “Given that we were a Division III school and academics were prioritized over athletics, it wasn’t really an option for me to miss the symposium. I reminded my coach of the symposium and told her that I wouldn’t be able to attend practice during the time of the symposium (or the games if they were postponed). She told me that if we did practice that day, we would go earlier in the day so that I could make it to my symposium. Luckily, it didn’t rain so I didn’t have to miss any games, and my coach canceled practice, so I didn’t miss practice that day either. Then my whole team and head coach came to watch me present my work.”

Don also discussed trying to create a schedule that avoided conflicts between his research and athletic participation, saying, “I found bigger issues with my classes, and especially science labs, conflicting with my practice schedule. My research participation allowed for a more flexible schedule that my mentor was willing to work around. The single biggest conflict was when my presentation of my research at a local conference was scheduled on the same day as one of my last track meet during my senior year. I thought a lot about this and decided that the conference presentation was ultimately more important and decided to miss the meet. I discussed this with my track coach and he fully supported my decision. I did not tell my research mentor about this because I did not want him to feel bad about the situation. It was not a conflict he created, and I resolved it. I found out later that another member of the Psychology Department told him about my missing the meet for the presentation, and that he was devastated to hear that.”

Most pessimistically, Amanda discussed how she was unable to manage a solution to these conflicts, stating, “These did not overlap with me. But perhaps this is the lesson. I was unable to time manage to have them overlap. I learned from that and worked on my time-management skills, but academics and sports definitely conflicted for me that first-year.”

Each of these responses showcases how student-athletes are tasked with proactively managing their research experiences so that their research experiences (which were generally more flexible) did not conflict with their athletic schedules (which were more rigid). A theme that emerged in these responses was the communication that the student-athletes had with both their research mentors and coaches to keep them informed of their various commitments, as well as their need, at times, to prioritize one of these commitments over the other. This shows the challenge that student-athletes face in making these simultaneous commitments work. Sometimes one of their commitments will lose – they simply did not always have the time to do both.

What were your coaches' perceptions of and attitudes toward your research involvement?

Each of the former student-athletes played at Division III schools, and it is therefore interesting to see even at this lower degree of competition how they had variable experiences in terms of their coaches' support for their research involvement. Amanda discussed how she decided not to continue playing softball after her first year due to her inability to make the simultaneous commitments to work and talked about how her coaches blamed her academic choices for her inability to play, stating, “They thought I took too many lab classes during my first year and that if I just ‘eased up or took easier classes,’ then I could continue to play.”

Ashley echoed these difficulties, stating, “This is tough. My coaching staff was very much so of the mindset that ‘I don’t like anything that is not strictly required of you that impedes your commitment to this team’ (e.g., study abroad, clubs, and committees). However, because the senior thesis is a requirement to graduate, my head coach understood its importance but still wanted it to not impede my commitment to the team.” Ashley also reiterated the experience she discussed earlier about her head coach canceling practice and attending her research symposium. Ashley said, “My coach even asked for a copy of my thesis when it was completed so that she could read it, although I don’t think she ever did, but it was a nice sentiment.” Ashley reported ambivalence about her perception that she would not be able to pursue academic opportunities due to her team commitments, “My coach was supportive when a professor contacted me with a TA opportunity. However, I would not have accepted the position if I saw a lot of potential conflict with our game schedule.” She also talked about how her coach was “notoriously non-lenient” if players’ work schedules conflicted with practices even if these were rescheduled from their original times, and that “the expectations of our coach” were that players “bail last minute” on their work commitments to attend rescheduled practices. Clearly, these responses demonstrate some pressure from coaches to forego research, academic, and work opportunities in lieu of athletic commitments, even at schools at the lower tiers of athletic competition.

Conversely, Slava and Don reported less pressure from their coaches to forgo these research and academic opportunities. Slava stated, “It was very clear and evident that academics came first.” He discussed how classes, for instance, would take priority over practices, but acknowledged that he would be excused from classes for games. He also stated, given the priorities of the school, “something like presenting at a conference would come before a game, but I could see some coaches not being very happy about it, particularly if the athlete was a strong contributor.” Don reported, “My coaches were very supportive of my academic activities and responsibilities. They knew I was not going to be a professional athlete and were invested in my full development as a student and a person. They understood that athletics were a big part of that, but not the only part of that. I never felt pressure from them to miss out on or turn down academic or research

opportunities.” It is informative that Don also reported earlier how his track coach allowed him to miss a meet to present his research. It appears from these experiences that there are differences among coaches, probably at all collegiate levels, in how supportive they are of academic and research activities that they deem optional, and their lack of support puts student-athletes into challenging situations to navigate.

What were your professors’ perceptions of and attitudes toward your athletic commitments?

The former student-athletes each reported that their professors were generally supportive of their athletic commitments and even provided a topic of conversation to allow them to connect. Slava stated that athletics were not high profile at his school, saying, “I’m not even sure that word got around when we won a game,” but that his professors were “very supportive and accommodating whenever I had to travel for games.” Don stated his professors were “very supportive of my athletic commitments” and “regularly asked me how my seasons were going and accommodated my practice and competition schedules as best they could.” He continued, “Both my coaches and professors understood that athletics and academics were complementary in creating a worthwhile and fulfilling college experience. I do think that the college’s focus on academic excellence, while also having a small enrollment such that a relatively large proportion of the students were athletes, facilitated some empathy for the student-athlete experience.” Ashley similarly stated, “Most of my professors were understanding about my athletic commitments. We had rigorous attendance policies in most classes, so I would always contact the professor before the trimester started with our game schedule and emphasized the days I would expect to miss, but also let them know we were very weather-dependent so our schedule would have to be flexible and I would be in communication with them as new information came up. Given that I was proactive, most professors didn’t have a problem with my absences so long as I kept up with everything that I needed to. Several professors would ask me how the team did in the following class period. One engaged in several different conversations with me about my shoulder injury because I would sometimes come to class after physical therapy with ice on it. Those small conversations always made me feel like they weren’t upset with me missing class.”

Not all the experiences were easy to manage, however. Amanda acknowledged that one of her professors was concerned that she would not maintain the grades she needed for her scholarships because of her commitments. Ashley stated, “One professor that a teammate and I had was not happy with us because we missed three classes early in the trimester (which was the maximum we could miss), and our coach reached out to either the professor or our athletic director to resolve the issue. It definitely made me feel like this professor didn’t respect that I had other non-academic commitments and it affected our in-class relationship.” These responses show how the professors’ support for athletics can, much in the way that coaches’ support for research and academics can, facilitate or complicate the management of these multiple commitments for student-athletes.

How do you think your experience as a Division III student-athlete affects your approach to mentoring student-athletes, even at a Division I (and Research 1) institution?

Each of the former student-athletes discussed how their experiences help them relate and empathize with the various responsibilities and commitments that all the students, not just the student-athletes, in their classes and research labs manage. Amanda summarized this point, “I think being involved in sports and coaching made me a better mentor to all of my students, not just the ones who participate in sports.” Ashley also discussed her ability to relate to student-athletes, “I think having been a student-athlete myself helps me relate to current student-athletes better than other mentors might. At the very least, this connection helps build rapport early on. Given my limited research experience in undergrad, I want to encourage student-athletes to get involved in research that they care about, especially because there are plenty of opportunities at my current Research 1 institution. Additionally, I feel as though I tend to approach research and mentoring as a collaborative process with a team mentality because of my experiences and it has been successful

thus far in creating positive communities of supportive and passionate people doing what interests them. This may feel particularly familiar for student-athletes and may be a skill that we develop in non-athletes that will benefit them nonetheless in future work/team settings that are based on a culture of collaboration.”

Slava discussed having empathy for student-athletes in general while acknowledging that Division I student-athletes may have more intense athletic commitments than he did, stating, “I think my experience has made me more understanding and willing to accommodate student-athletes. While playing D-III football was a time commitment, I know that their time commitment is a lot more intensive than mine. Plus, they also have additional pressure of potentially losing their scholarship. I think I would also be more mindful of their time as I know they don’t have a lot of it to waste.”

Don discussed the same themes of empathizing somewhat with the situation of a Division I student-athlete at his institution, but not really knowing what that situation is like, stating, “As a Division III student-athlete, I can empathize with the multiple demands that my current student-athletes face, including the scheduling issues, fatigue, and so on. I cannot empathize, though, with the experience of being a scholarship athlete at a Division I school. My student-athletes in class seem to feel a lot of pressure that they are there to be athletes first and students second. The complementary nature of the student-athlete experience sometimes seems more one-sided than it could be. I have mentored several student-athletes in my research lab, and I have had to be creative in making the schedule and the research tasks work for them. I understand that I benefitted from people making allowances to adapt to my responsibilities to allow me to be an undergraduate researcher and an athlete, and I try to pay that forward. I do find that the student-athletes who interview for my undergraduate lab are apprehensive that it can all work at a Division I school. I don’t think they feel the support from coaches that I did at a Division III school. I once had a student-athlete tearfully pull out of presenting her research at a large regional conference because she was required to attend a fundraiser for her team – and this was after her season had ended. I have had other student-athletes decline research lab opportunities because it conflicted with ‘voluntary’ offseason training. I try to understand that these pressures may be real, or they may only be the student-athlete’s perceptions, and try to provide whatever opportunity and experience I can to work with them based on what they can reasonably contribute.” It is interesting to see how their experiences as student-athletes informed their empathy for working with students in general through their various commitments, responsibilities, and experiences, and that their empathy allows them to acknowledge both their shared and unshared experiences with Division I student-athletes.

What specific recommendations do you have for faculty mentors working with student-athletes in undergraduate research?

The first clear recommendation that emerged from the former student-athletes in mentoring student-athletes in research is to empathize with the time commitments that student-athletes devote to their sports. Slava stated, “Understand that their time commitments are not the same as traditional students. Sports, especially when in season, take up a lot of their time and energy. While you should not give them any special treatment due to their status as an athlete, it is important to understand that they are going to have a different experience than most of your other students.” Ashley expressed similar thoughts and cautioned faculty to “understand the commitment these particular students are going through, because it is never just the time commitment of practice and games for their respective sport. Part of being a collegiate athlete involves lifts, physical therapy, study tables, alumni events, dinners with donors, or working at other athletic events. I found these commitments are often overlooked by faculty and/or my non-athlete peers even though these duties required a lot of additional time off the field. Student-athletes experience a unique physical toll on top of all their time commitments.”

Amanda added that mentors may guide student-athletes through these experiences by “building their time management skills. Don’t assume they have time-management skills, they may be participating in unhealthy behaviors to get by, like pulling all-nighters, drinking energy drinks, and so on. That, on top of a schedule and potentially grueling workouts, can run them into the ground. I don’t assume my students have these skills. Even if they have been juggling many things prior to working with me, there’s always room for improvement. Make a schedule with them, discuss distributed practice, small manageable tasks, and check lists.” Amanda stated that mentors should help student-athletes identify and work according to their priorities, stating, “There’s a lot of people competing for your student-athletes’ time. They are all telling the student-athlete that their respective domain is the most important. Talk to your student about prioritizing for their future. Show them how participating in various research practices is related to getting into graduate school (if that is their goal). Show them what they can get out of the research experience and why it is important.”

Another theme that emerged from the responses was a recommendation that mentors should, as Amanda said, “mentor the whole person.” Amanda continued with a focus on empathizing with the student-athlete’s experience, “Mentor the whole person, not just the athlete, not just the researcher, and not just the student. I think anyone mentoring a student-athlete participating in research and athletics simultaneously needs to understand their motives for participating in both. It could be the case that athletics was the only way they could afford to come to college. It could also be the case, like in my situation, that they are on their own financially. They may have little means of financial or social support outside of the college. Be a mentor to them not only in the research process, but also in life. Be a good role model. Create a bond with them. Build trust. Show and teach them how research can enhance their lives.” Amanda continued, “I work very hard to build trust between my students and myself. I want them to be able to come to me with their concerns or worries. I want them to be able to talk to me about the struggles they are encountering, the successes they are having, and so on.”

Don similarly discussed the importance of focusing on the whole person, “I would remind faculty that academics, undergraduate research, athletics, social relationships and experiences, etc., combine to create the college experience for students. Each of these is important for the holistic personal and professional development of our student-athletes.” Don also discussed the importance of empathy, with a plea that faculty make opportunities available to student-athletes for undergraduate research. Specially, he asked faculty to “Be empathetic to their responsibilities across these domains. Be willing to create opportunities that they can reasonably participate in. They know how to work hard. Please try to structure the undergraduate research experience so that it doesn’t exclude student-athletes. Don’t make your student-athletes choose one experience over another.”

It is clear these former student-athletes recognize that mentoring student-athletes in research comes with predictable challenges. They recommend that faculty approach these challenges with intentional, proactive strategies to help student-athletes succeed in undergraduate research. It may also be helpful to build undergraduate research into courses (e.g., independent study course titles) that allow the research experience to be graded, recorded on transcripts, and factored into grade point averages. These incentives may make the experience more concretely valuable when having to weigh the costs and benefits of student-athletes deciding to engage in undergraduate research.

What specific recommendations do you have for coaches working with student-athletes who are involved in undergraduate research?

The former student-athletes noted similarities in their recommendations for coaches and the previous recommendations they made for faculty. Don stated, “I would say many of the same things to coaches that I would say to faculty members.” Each of the former student-athletes recommended that coaches maintain some perspective about the importance of research opportunities and

academics in general, in the preparation for student-athletes beyond their collegiate experiences. Amanda would remind coaches that, “It is unlikely, for most, that players will go on to be professional athletes.” Amanda, like her recommendation for faculty to “mentor the whole person,” suggested coaches to “coach the whole person.” She discussed her own issues with a college coach who, “was out for the W (win) and the W only. I never felt like she cared about me as anything other than a body on the field. I didn’t trust her to talk about the problems I was having in my first year. So, I didn’t talk to her and I didn’t talk to her about ways to resolve them.” Ashley similarly stated, “My main recommendation to coaches working with athletes involved in research is to understand that your players are people. Good coaches coach players, but great coaches coach people.”

Slava recommended that coaches understand the special experience that undergraduate research provides beyond other academic responsibilities, stating, “Be understanding that research is not like taking another class. There may be some things like conferences, presentations, lab meetings, etc., that the student cannot miss and make up the way they would be able to in another class. If a student is doing research, they are doing so because they believe that this will build job relevant skills and/or be required for the next step after their undergraduate education. It is important to know that doing research is not just something they can sacrifice for the sport.” Ashley stated, “Coaches should encourage the professional development of their athletes and understand that athletic careers end, whereas a research opportunity might better the student’s options post-graduation in ways that athletics cannot.”

The former student-athletes cautioned coaches against making student-athletes choose between their sports and their undergraduate research opportunities. Don said, “Understand athletics are an important part of the student-athletes’ college experiences. But don’t impede their professional development and opportunities by forcing them to either participate in undergraduate research or be an athlete. Make it clear to them that you support their academic and research pursuits and be clear to them about which of their athletic commitments are really required versus voluntary. Almost none of your athletes will have professional careers in their sports. Allow them to use their sports, especially as scholarship athletes, to get the most out of their education, not to get in the way of their education.”

Ashley noted that it is important for coaches not just to allow student-athletes to participate in undergraduate research, but also to support them doing so. She mentioned that “I suggest coaches be flexible with their athletes when an opportunity like research involvement comes along, I’m thinking specifically in terms of scheduling practices, lifts, and others. Support your players’ (research) interests. If your athletes are presenting their work, show up if you can (and encourage your other players to do so, too). When my coach and team did this for me, it made me feel respected in a way that wasn’t dependent upon my athletic or leadership abilities, but that my team was genuinely interested in my work and/or supporting me off the field.”

The former student-athletes made consistent recommendations to coaches to allow student-athletes to maximize their personal and professional development by supporting their simultaneous engagement in both athletics and undergraduate research. Stated succinctly and compellingly, Amanda stated, “Don’t be an a**hole” when working with student-athletes who simultaneously pursue athletics and undergraduate research opportunities.

What specific recommendations do you have for student-athletes to help them manage their concurrent athletic and undergraduate research experiences?

The former student-athletes made many recommendations to help student-athletes manage their concurrent athletic and undergraduate research experiences. Again, time management was key. Slava recommended, “Be organized with your schedule and communicate your commitments to your

coaches and mentors. Try to arrange your schedule to minimize your conflicts. Research tasks and scheduling are often flexible. Planning ahead can really make a difference.” Amanda mentioned that some helpful resources could include using “distributed practice” and “checklists, and a schedule you can stick to,” and recommended that student-athletes to “prioritize the activities that will get you to the next level (e.g., graduate school).” Ashley noted that it is important, but often difficult, to be realistic and cognizant of priorities during these concurrent experiences. She stated that “Don’t bite off more than you can chew. Your time is valuable, so don’t sign yourself up for something that you can’t fully commit to (whether that be your sport or a research team). Decide on your priorities and know that it’s okay to change them. Also, make sure your interests are genuine and you aren’t merely getting involved in something just to have another CV line. Be upfront with yourself (and others) about your time commitments and keep an open line of communication with both parties (i.e., your coach/team and your research team) so that you’re all on the same page about expectations. Most importantly, take care of yourself. Try your best to be present wherever you are whenever you are there (this is a lot easier said than done).”

The former student-athletes also noted the importance of student-athletes communicating with faculty and coaches to facilitate their concurrent experiences. Slava stated, “Make sure you communicate with your coaches and professors about potential research/athletic conflicts.” Don noted that coaches and faculty generally want to support these simultaneous experiences, and recommended that student-athletes “Communicate with your coaches and professors about your academic and research goals. Don’t assume they won’t support the other experiences. They may be more flexible than you assumed they would be. They generally care about you and your development, and want you to have opportunities.”

Amanda provided several other specific recommendations by which student-athletes could strategically apply the skills and resiliency they developed in athletics to the undergraduate research experience. She stated, “Transfer those skills you are learning in both the lab and the field back and forth. Be coachable in the research process. Listen and apply the feedback. Be accountable and responsible. Be a team player. Focus on the name on the front, not the back. Put your game face on. Show your research mentor your work ethic. Practice, practice, practice. Use the silly expressions you learned in sports to get you through some of the tougher stuff – ‘Good. Better. Best. Never Rest. Until your good is better. And your better is best.’” Amanda also noted the importance of taking care of yourself, recommending student-athletes to “Find the support you need. There are many resources on campus that I wish I would have taken advantage of to help me out (e.g., tutor, academic success centers, and writing centers). I was too prideful. Don’t do that.” Amanda finished with an important point about using undergraduate research to build fulfilling and productive relationships, explaining that, “Develop a relationship with your research mentor. They have connections. They have a lot of knowledge. A good one will be there for you, support you, and help you make the decisions you need to make.” Her final point demonstrates an earlier point that bears repeating – undergraduate research is a special experience that goes beyond normal academic class experiences and is one that student-athletes should not only pursue but also be supported in pursuing.

Don provided a conclusion to these recommendations about how student-athletes should think about their experiences, recommending that student-athletes, “Think long term. Use your college experience to nurture your personal and professional development, as well as your future educational and career prospects. Undergraduate research is a phenomenal way to build skills and experiences, and to foster professional networks that can help in job searches, applications to grad/law/med school, etc. Don’t miss out on this opportunity!” He also highlighted how positively impactful these experiences can be, and reminded student-athletes to “Enjoy yourself. I loved playing sports in college. I also loved being an undergraduate collaborator in a research lab. I am so grateful I got the opportunity to do both.”

It is important to note that these recommendations to student-athletes were optimistic. Each recommendation, while sometimes acknowledging the difficulty, offered a realistic mindset or behavior that would increase the likelihood of concurrent successful experiences in both athletics and undergraduate research.

Caveats

Our examination of the experiences of undergraduate student-athletes in research was limited to four student-athletes who played at Division III colleges, including a professor who mentors student-athletes at a Division I university. This, combined with the fact that we had two male student-athletes who played football (one also competed in track) and two female student-athletes who played softball, limited the diversity of our sample and consequently our ability to generalize the findings. Of note, none of these student-athletes participated in athletics at Division I universities. Accordingly, none of these student-athletes was faced with the dilemma of having to participate in athletics to maintain a scholarship to financially support their education. Despite this limitation, we believe our findings do demonstrate how challenging the prospect of being a student-athlete and an undergraduate researcher at the same time is, while acknowledging that these daunting challenges may be exacerbated at Division I universities.

Conclusion

Undergraduate research is a high-impact educational practice that promotes personal and professional development (Healey & Jenkins, 2018; Kilgo et al., 2015). This experience is often intense, but rewarding, and helps to develop the skills and knowledge base that promote future career success. Participation in collegiate athletics is also intense and rewarding, helping develop personal skills and resiliency that promote future career success (Galli & Vealey, 2008; Lally & Kerr, 2005; Sauer et al., 2013). Our experiences as former collegiate student-athletes and undergraduate researchers show that engaging in these two experiences simultaneously is, at best, challenging. Sometimes, unfortunately, it is impossible. We believe that acknowledgment of their dual importance, alongside proactive, intentional communication and planning, can make these experiences simultaneously possible and fulfilling. For instance, mentors who are cognizant of the unique demands that student-athletes face can help student-athletes navigate their various personal and professional development opportunities and, in doing so, help foster and facilitate student success. We hope that our reflections and recommendations will help student-athletes, research mentors, and coaches work together to provide realistic opportunities for student-athletes to engage in, and benefit from, their experiences in both their “grass classrooms” and undergraduate research labs.

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