

Utilizing your Academic Advisor to Maximize your Opportunities and Success as an Undergraduate STEM Student.

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Twenty years ago, I was an undergraduate student studying biology, working through my program mostly timely, if somewhat aimlessly (throwing in a random class or two along the way), checking off requirements in a ragged paper copy of the 2000-2001 undergraduate course catalog at Northern Kentucky University.

Back then, at most institutions, there were no dedicated, full-time academic advisors. We had faculty advisors that *we* were expected to seek out (if you were able to figure out who your faculty advisor was). Ultimately, most undergraduates were left on their own to navigate the requirements of their major, minor, and bachelor's degree. Because of this, my experience as a first-generation college student could be, at turns, overwhelming and confusing.

How much more could I have gotten out of my undergraduate years if I'd had someone helping me navigate each semester while also working with me on the big picture of life after graduation? Since becoming an academic advisor six years ago, I've thought about this question a lot, and now it defines how I approach my job working with undergraduate biology students each day.

According to a 2018 article in EdSurge, a recent student engagement survey found that 78% of students reported having met with an academic advisor, and 65% reported that their advisor helped them create an academic plan

(Johnson, 2018). This is a huge step forward for student success in college.

In this perspective, I'll explain why the increase in academic advising and advisors is so beneficial to you. I'll discuss what a typical advising meeting looks like, and how you can gain the most benefit from meeting with an advisor. I'll also provide some advice on other ways you can get engaged in your major and be successful in your college courses.

A typical advising meeting lasts about thirty minutes and can be in-person, virtual, or a phone appointment based on your preference. Each meeting is usually a combination of problem-solving ("My classes are conflicting in my schedule" or "The class is full, what can I take instead?") as well as bigger picture topics ("I love my microbiology class! What future classes can I take that are related, and what types of jobs can I get?").

When preparing for an appointment, I utilize the university's advising tools and suggest students do the same. This way, the conversation feels more like a two-way street, since we'll have the same points of reference when discussing requirements. At most universities, this will include access to a degree-tracking software program like Degree Works, Starfish, or Achieve. These programs list what is required of your major, minor, and bachelor's degree, as well as keeping track of what you've already completed, your grades, and GPA. Another tool

we use allows students to book advising appointments, as well as to review notes that were entered by the advisor or other support staff in previous meetings. Ball State currently uses Navigate but has used AVISO in the past.

Prior to an advising appointment, and when looking at a student's degree and note tracking records, I consider the following:

- Current course schedule (is the student taking the right courses, and not too heavy of a load?)
- Current GPA (is the student on academic probation and needs support, or is their GPA competitive for medical school or other graduate or professional programs?)
- Past course loads (did they do well at 18 credit hours or do they need to lighten up in future semesters?)
- Academic plan (is the student's semester-by-semester plan reasonable and up to date?)
- Updates (are there any changes to the degree program or course offerings I need to make the student aware of?)

When meeting with the student, I consider these additional topics for discussion, but base it off the situation and the student's main goals for the meeting:

- Do you enjoy the major and feel connected to classmates, clubs,

faculty, or other opportunities related to the major?

- When do you want to graduate?
- Are you a commuter or living on campus?
- Are you employed full-time?
- Do you have scholarships or financial aid requiring certain credit hours each semester?
- Is your physical or mental health causing academic struggles?
- Do you have family support and/or pressures affecting academic decisions?
- What do you want to do after graduation? Go directly into the workforce, or apply to graduate or professional programs?

Many times, after having a conversation with a student, it becomes clear to them they aren't sure of a direction moving forward. They may enjoy biology, but may not be certain of what a future career looks like for them. If a student wants to continue moving forward in the major, but is unsure of their interests, I usually suggest they consider participating in undergraduate research.

Undergraduate research is a great place to start, since it can be completed on or near campus, and the faculty mentor will usually work around your existing school or work schedule. Also, most faculty don't expect you to come in with

skills or experience. They will train you on specific lab skills, while reinforcing topics you're already learning in your science courses, such as the scientific method and how to complete a literature review.

To get involved in undergraduate research, I suggest students take 30-40 minutes to check out the faculty biographies and research interests that are listed on a university's departmental webpage. Take notes on what research topics piqued your interest, and then construct an individualized (but brief) email to two or three faculty. In the email, you'll want to introduce yourself and mention you read about their research and would like to participate. It is also helpful to mention any relevant coursework you've taken that could help in the laboratory (e.g. "I have completed Principles of Biology 1, so I am familiar with pipetting technique", or "I have a foundational knowledge of cell division"). Finally, you can decide to attach a résumé, but it's not necessary.

Another approach is to have a conversation with one of your faculty after class. If there is one class or instructor that stands out to you, ask what type of research they do and if they are taking on any new students. Being flexible on the research topic can be worthwhile if you're still exploring, but want to gain new insights from a mentor you feel you already have a good rapport with.

Even students who don't see themselves in a research-related career after

college report positive outcomes after completing at least one semester of undergraduate research. In a 2007 web-based survey of 367 undergraduate STEM students and faculty mentors, six categories of benefits emerged:

- Personal/professional gains
- Gains in thinking and working like a scientist
- Gains in skills
- Demonstrating norms of professional practice and understanding how scientists practice their profession
- Gains in career clarification
- Enhanced career preparation.

Further analysis found, "strong congruence across the student, faculty, and alumni data sets" (Hunter et al, 2009).

My own advisees have reported similar benefits. They report more confidence in their problem-solving abilities and in working independently. They also report that undergraduate research made them consider other factors that relate to their ultimate career goal. For example, pre-medical preparation students who've completed microbiology research have a deeper understanding of aseptic technique and bacterial resistance, and will undoubtedly carry this knowledge into their medical training and future patient care. Additionally, skills and knowledge gained in undergraduate research make a student a more

competitive candidate in many fields. I've had several students report back to me after graduation that their undergraduate research experience gave them something extra to talk about in an interview, making them stand out to an employer.

In conclusion, your advisor can be a valuable part of your undergraduate experience. They will help you problem solve, while also thinking of ways to dovetail your interests and strengths to make the most of your undergraduate experience. Ultimately, you can expect your advisor to:

- Know your degree requirements and university policy and procedure, and keep you updated on changes
- Keep your academic plan updated
- Check in with you each semester
- Have knowledge of, and refer you out to other services, such as Financial Aid, Tutoring, Counseling, Registrar's office, etc.

In return, an advisor expects you to:

- Utilize the tools the university has provided you, such as degree tracking software and appointment apps, and ask if anything seems confusing
- Respond to check-ins and let your advisor know if you are struggling or need help with something

- Read emails from your advisor or the university for important updates, such as registration and withdrawal deadlines

Examining my own experience as an undergraduate, feeling supported and advocated for by an advisor at the university would have given me hope when I felt discouraged, struggling with course material or a bad grade. Having now met with hundreds of undergraduate biology majors, I know a good advisor can help students find several successful paths forward, regardless of perceived setbacks.

Upper-level students reflecting on their own struggles also support this point of view. A 2018 study of successful pre-health students' views of academic success showed that participants "almost all agreed that incoming students should not allow a single challenge or failure to deter them from pursuing their goals" and "did not emphasize natural gifts, talents, or intelligence as the keys to academic success." Rather, successful students demonstrated traits such as adjusting study strategies, seeking help through professors or supplemental instruction, and time management (Dumke et al, 2018).

One student in the study summed it up best, saying, "You can't always do it on your own... Sometimes, it's not enough to just read a textbook and try and comprehend the information on your own; you need an entirely different perspective" (Dumke et al, 2018).

References

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