

Balliol College Biology: Professor Sebastian Shimeld - video transcript

The tutor, Professor Sebastian Shimeld, is seated, facing the camera. The tutor's name and course subject are shown the first time they appear. The tutor answers the questions that are displayed on screen.

>> PROFESSOR SEBASTIAN SHIMELD (PROFESSOR OF EVOLUTIONARY DEVELOPMENTAL BIOLOGY, JULIAN HUXLEY FELLOW AND TUTOR IN ZOOLOGY): I'm Sebastian Shimeld. I'm one of the two tutors in Biology here at Balliol and my research focuses on how the information in animal genomes is turned into shape and form through the processes of embryonic development. I'm particularly interested in how those processes evolve and how that's created or produced the vast diversity of animal life on the planet today.

[Question displayed on screen:]

What qualities do you seek to develop in your students?

>> PROFESSOR SEBASTIAN SHIMELD: The first thing we look for in an undergraduate student is a real enthusiasm for the subject and I think this is probably true for anyone looking for undergraduate students, if you're going to study a subject for three or four long years at university, you want it to be something you're passionate about, something you're really interested in. Beyond that, we're looking for students who can bring a critical evaluation and appraisal to the subject, and what I mean by that is they don't just accept what they're told and try and learn the facts, but they think about what they mean and they think about how that understanding in that subject has been underpinned by data and by experiment and analysis. Those are the real qualities I think we seek to develop in undergraduate students. That critical appraisal of information, building it into logical arguments that support the development of understanding or are used in the support of development of concepts and principles that have this real explanatory power.

[Question displayed on screen:]

What type of work do you give students to prepare for a tutorial?

>> PROFESSOR SEBASTIAN SHIMELD: Tutorials come in a number of different forms and they vary quite a lot through the three primary years of the degree. In the early phases of the degree we'd often focus on essay work. This is where students are given a topic to research in depth and produce a reasonably comprehensive piece of structured writing exploring that topic and explaining either some important concept or principle or trying to use the information they've gathered in their research to support a particular argument. The reasons for that are, one; that really allows students to develop those independent research skills but, importantly it also encourages them to learn how to write well in a scientific manner and that's really important for the development of a scientist, that ability to take complex information and put it in a structured form such that it supports a particular concept, it develops a concept, supports a particular argument and is

readable and flows well. Those skills are important beyond science but they're definitely important for a Biologist.

[Question displayed on screen:]

How are tutorials structured?

>> PROFESSOR SEBASTIAN SHIMELD: In a normal tutorial, I might start by first exploring whether there were any problems with the students researching the topic or constructing their essays, whether there are any conceptual gaps. Usually I would have their work submitted first so I could go over it and try and understand if there were any major misconceptions and I would also talk to the students in the first few minutes and ask them if they had encountered any particular difficulties in exploring a topic and understanding any parts and I think the first part of a tutorial would normally be making sure we were kind of all at the same level on those sorts of things, making sure there weren't any gaps in knowledge or misunderstandings that might compromise the rest of the tutorial. Beyond that, usually a tutorial will turn into quite a free-form, free-flowing discussion where we'll work through the various aspects of the topic, whatever that may be, and if the students have done a good job on their pieces of work, which most often they have done then we will often use it as a springboard to really move beyond that particular part of the topic and look at how it relates to, not just internally to what they've studied, but how it relates to other aspects of biology and other aspects of the course, whether that's to do with other parts of the science or how that bit of the science relates to human society, so the impacts of the science or thinking about you know, how things might work if we for example, resolved it down to a much deeper level of biology, started thinking about deeper mechanisms than they've been asked to look at in the topic.

[Question displayed on screen:]

How do you explore ideas with your students?

>> PROFESSOR SEBASTIAN SHIMELD: Tutorials really offer the possibility for in-depth discussion and when that discussion works best is when everyone's involved so, normally a discussion in the tutorial would be led by me but, I would expect the students to be fully joining in with that discussion. A typical tutorial might have two or three students in so everyone would get a chance to have a substantial contribution. The point of having a tutor in there, someone who really understands the subject and can lead it, is that they can lead that discussion by asking the right questions, by pulling out the right bits of information and by posing new ideas or new ways of thinking about things to see if that can change understanding or views on a topic. Overall, it's about developing free-flowing, structured discussion involving all of the people in the room. I think the most interesting aspect of talking about biology with students is sharing my enthusiasm for it and seeing it reflected back in the students themselves. Like almost all Biologists and Biology tutors I am fascinated by the diversity of life on the planet and how it works and it's always a pleasure to talk about that with people who are similarly interested, irrespective of what stage they are in their development or their careers as scientists.

[Question displayed on screen:]

How do your students help or inform your own research and understanding of your subject?

>> PROFESSOR SEBASTIAN SHIMELD: One of the aspects of teaching a subject is that it forces you to really break it down into its constituent components. You have to boil it down to the basic concepts and principles and then build it back up into the complexity of the modern world and sometimes that leads you to thinking about aspects of what you do in different ways, not just in how you explain it but how you understand it can change a little as well I think the real practical contribution of students to research comes a little later in the degree when they enter the research project stage. For Biology, that's usually the fourth year, the masters year and, students at that stage will join a research group like mine and genuinely become part of that research team, working on whatever topic the supervisor and the research team are working on, and those students are embedded in that group for many months and they make substantial contributions to the research program. It's a really important part of how we develop research in the department and the university and something we very much welcome as supervisors, having those people who by that stage in their education have reached a point where they can make genuine intellectual and practical contributions to the research.

[Question displayed on screen:]

What is the best thing about teaching at Balliol?

>> PROFESSOR SEBASTIAN SHIMELD: So, one of the great things about teaching Biology at Balliol is, we have a really good team of people involved guiding the students through the years of the degree and it's great to work in that sort of environment, both the students and the staff are involved with their education. I think the other great thing about teaching at Balliol is that, we get to see the students develop from newly arrived undergraduates, straight out of school, with a broad interest in biology, learning about the subject and developing their interests as they go through the degree. The degree is structured to allow this so, students get to progressively specialise as they move through years two, three and four of the degree and it's fantastic to see them develop those interests and then really push those interests to the what I think of as the research edge, the edge of knowledge, where we're starting to ask questions and think of ways of answering them rather than learning about what's already known.

[Final page:]

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