

Paul goes back to the classroom

As any teacher knows, the job isn't exactly easy. So what makes a professional, experienced bioinformatician want to give up an established career to brave the front of a classroom? **Vienna Leigh** from the European Molecular Biology Laboratory investigates.

After five years at the European Bioinformatics Institute (EBI)^{w1} in Hinxton, UK, Paul Matthews is making a brave move. On a scheme called the Graduate Teacher Programme^{w2}, Paul will spend one academic year teaching at two UK schools, after which he will be expected to have passed all the standards to become a qualified teacher. The programme is designed to encourage professional people with financial commitments, and scientists in particular, to enter teaching and fill the chronic shortage of science teachers.

"I feel really lucky to have got on this scheme; in my area it involves academic help from Cambridge University, some very good local schools in the partnership and the local authority," explains Paul. In his new job, he will teach children aged 11-16 biology, physics and chemistry, and students aged 16-18 his specialist subjects, biology and human biology, for the A level and the international baccalaureate.

Paul had many reasons for his decision, and has definitely had plenty of

time to think about it. Last year, he underwent major surgery for a congenital heart problem, and the three months' convalescence gave him a lot of time to reflect on his future.

"I'd recommend open heart surgery to anyone who needs to work out what to do with their life!" he laughs. "It gave me the time to sit down and really think about what to do next – and what is right for me at this stage of my career. I've worked in industry and academia for many years and really wanted a change."

He's leaving the EBI, located on the Wellcome Trust Genome Campus near Cambridge and part of the European Molecular Biology Laboratory (EMBL). The scientists there collect, store and curate databases of biological data including protein sequences and macromolecular structures, in effect 'parts lists' for many living organisms, so other researchers have a repository of data to help them look at how the individual components fit together to build systems.



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In running the institute's industry support programme, Paul catered for the major impact that advances in bioinformatics have on industry. The programme provides training in the databases, develops bioinformatics standards, helps industry partners with technical development and provides networking opportunities. The partners Paul dealt with every day included large, multinational biotech, pharmaceutical, agricultural, nutrition, personal care and medical device companies.

Paul's decision to change jobs has had both emotional and practical considerations. "I've always enjoyed the teaching I've done as part of my job in the past," he says. During his 13 years in bioinformatics, both in companies such as GlaxoSmithKline and academic organisations including the Wellcome Trust Sanger Institute and the EBI, he's had a lot of experience in the classroom and is equally happy presenting to 20 or 200, but as he says, "so far it has always been adults, and they were always already interested in science!" The Graduate Teacher Programme is, therefore, allowing Paul to fulfill a long-term dream. "I've often thought about going into teaching, but I've never been in a financial position to do so," he says. "I thought about it seriously before I came to the EBI, but then I had a small family and lots of commitments. Now, things are a bit more settled, and the scheme allows me to train while retaining a steady income."

Another persuasive aspect for Paul has been his own children. "I'm having more interaction with my kids about what they're learning at school as they get older, and more of an insight into what's going on in the schools," he says. "I want mine to have a good education in all subjects but it's almost naïve to expect that, as there's such a shortage of teachers, especially in science. Teachers have a difficult job and I don't think I can expect my children to be taught well



REVIEW

For anyone who faces the dilemma of whether to follow a career as a science teacher and for those who are already science teachers but have doubts whether they have made the right career decision, this article has all the answers. The interviewee, Paul Matthews, gives many reasons for becoming a high-school science teacher. His decision, based on a combination of unique personal, financial and social circumstances, is quite inspiring.

The article introduces a good debate topic and can be used in any science or non-science lesson. Questions such as 'Was Paul's decision a good one?', 'Will he be better off as a science teacher or will he regret it?' and 'Will he actually be in position to contribute more to society as a teacher?' can trigger lively conversations between students, especially when considering that the article deals with the students themselves.

Michalis Hadjimarco, Cyprus

unless, like the teachers, I would actually be prepared to get in there and have a go at it myself. So I thought, why don't I?"

Paul believes science suffers more than other subjects when it comes to children making their subject choices at key stages in their schooling. "If science isn't taught in a way that kids can relate to, then they very quickly dismiss it," he says. "If even the people who are teaching it aren't interested – because they're covering for someone, or are supply teachers, which is happening more and more often – they can't convey an excitement for the subject. If it's not something they're passionate about, how can they encourage the children to be interested in it?"

"It's not just the way it's taught, though. Science is most easily given up if it conflicts with other subjects. You never hear about someone having private tuition in science as they might in French, for example, if it clashes with something else in the curriculum."

Despite such challenges, though, Paul has mostly positive expectations about his new career. "I think switching kids on to science – finding ways

to engage them and make science relevant for them – will be a really rewarding challenge," he says. "That will be the hardest part – trying to find ways to make potentially disinterested teenagers see how much science is a part of their lives."

He's already had some experience of this challenge, having done several weeks' placements in his host schools. "One of those days just happened to be a taster session for ten-year-olds having their first science lesson, learning how to light a Bunsen burner and doing flame tests," he says. "Looking at their faces, not one of them was bored. Not every science lesson has that much hands-on fun, but if you see the light switch on in someone's face as they see something or understand something for the first time, it gives you a real buzz."

"I'm not naïve enough to think that they'll all want to learn science – and something certainly happens to make kids disinterested, between that young, excited age and adolescence, when they have to choose subjects, and I'm hoping to find out what that is. The opposite sex, maybe, or the perception that science is too hard, or not accessible enough."

“I don’t imagine I’ll be able to make them all brilliant scientists, but it will be nice to make a difference of any sort – to have a hand in making a well-rounded human being. Maybe one day I’ll call a plumber, and it will be one of my former pupils, and he’ll just be a nice guy. Having said that,

getting the first PhD thesis in science sent to me by a former student will be fantastic!”

Web references

w1 - The European Bioinformatics

Institute website is www.ebi.ac.uk

w2 - To find out more about the

Graduate Teacher Programme, see www.tda.gov.uk/Recruit/thetrainingprocess/typesofcourse/gtp.aspx



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