



STEM Insight: Iona Martin

Role: Head of Biology

School: Colchester County High School
for Girls

Placement: Babraham Institute, five days
in February 2016

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Host: The Babraham Institute is a world-class research institution focusing on the molecular mechanisms that underlie normal cellular processes and functions, in particular the process of ageing. The Institute shares its campus with 60 small to medium-size companies which assist in knowledge exchange.

Motivation: I applied for a placement at Babraham to broaden my biological subject knowledge and to get up-to-date with the huge advances in technology and rapid pace of change in research.

I hoped the placement would provide me with up-to-date examples for my teaching of biology, as well as help build links with the Institute for longer term collaborations to benefit all of our students.

I also wanted to improve my knowledge about the vast array of STEM careers related to my subject as this is something I was not confident about. I hoped this would give me the opportunity to come into contact not only with people in the broad range of jobs available to biological science graduates today but also a wider spectrum of STEM-related careers.

Experience: The packed programme for the week covered a broad range of research being undertaken at the Institute and an overview of some of the broader but important aspects of the Institute's work; from public engagement, knowledge exchange and communications to research funding and commercialisation.

The hands-on sessions that related directly to the A level curriculum were great. However, I particularly enjoyed talking to the scientists about their work in research and finding out how their career progression paths had developed, for example from degrees to PhDs and further training, as this is probably an area of weakness for most biology teachers.



It was especially useful finding out about the roles of the Babraham's scientists who don't work in the lab. This will help me give better careers advice about using a science background but entering a role outside of the lab - we need to break this image that STEM means you work in a lab.

Impact on me: The placement has already had a huge impact on my professional practice. It has re-enthused my passion for biology which I hope comes across in my teaching and I want to share with colleagues and students. It convinced me that I need to keep engaging in CPD to remain up-to-date with developments to enthuse my students about STEM careers.

Given my previous lack of confidence in discussing STEM careers, I think there has been a dramatic change in my capability to discuss careers with students and colleagues and take an active part in careers education in school.

I also really enjoyed the challenges from the 'new thinking' we were exposed to as teachers, not least the interdisciplinary nature of science and the need for ethical, legal and psychological considerations for future developments within science.

Above all, it really emphasised the need to instill good teamwork and independent thinking rather than spoon-feeding students to enable them to excel both at university and in their STEM career.

Impact on my school / students: The STEM Insight programme has encouraged me to:

- Successfully bid for a Royal Society schools partnership grant with Babraham for a epigenetics project over 2 terms with whole school involvement. This is a unique opportunity for the students to undertake real research
- Babraham scientists recently visited the school and 20 students had a training session on nematode worms at the research campus. As a result, the students will be presenting at the Royal Society and the Cambridge science festival and this could result in publications, which is a really exciting prospect
- Forging links with Babraham means I can call on scientists to come and give talks at school in future. We are also now invited to their annual schools project day where students undertake practical work



- The partnership is already improving our STEM careers activities too. So far I've taken six students on a visit to the Institute which was life changing for one as she is now applying to study biology rather than medicine and wants a career in biological research

- I've also created curriculum resources for the whole department to use and shared these with Babraham, which they then distributed at a teacher twilight session

I plan to promote STEM subjects and STEM careers through:

- the production of a new STEM careers board (based around the scientists met at Babraham)
- the delivery of a STEM assembly during National Biology Week to all year groups in school
- a report of our activities since the STEM Insight programme in the school newsletter to help promote STEM subjects and careers to parents.

I'm really looking forward to implementing my findings about careers, subject knowledge and techniques into my teaching and sharing with the other biology staff in my department and then more widely within the school. I also value the links that we made during the week and hope it is just the start of future collaborations.

Professional development: The support throughout the STEM Insight programme was very well organised and helpful. I found the final follow-up CPD session at the National STEM Learning Centre particularly helpful. It gave me the chance to see for myself the fantastic resources and facilities at the Centre and connected me to a whole range of new sources of careers-related information, from Future Morph to the government's 8 Great Technologies 2013 report, which all suggest a very positive outlook for STEM and biology-related careers.

"This is providing sixth form students the chance to undertake research, present their findings and expose them to the necessary scientific rigor of research, as well as the continuing support from Babraham scientists."