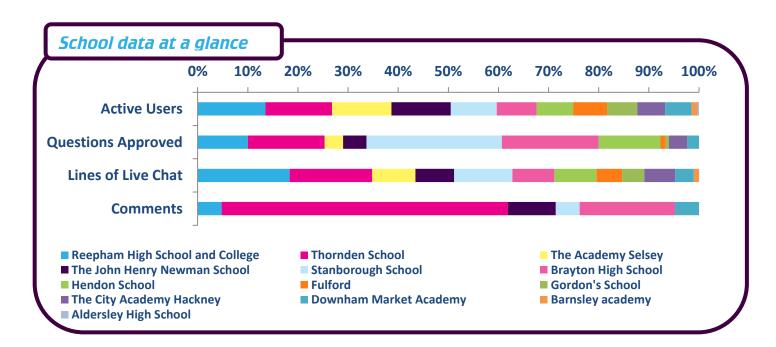


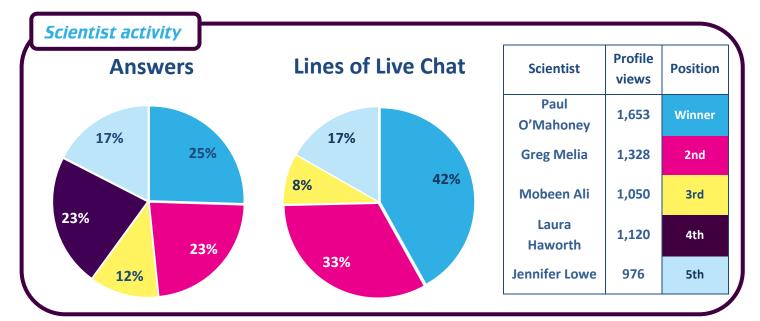




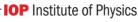
# **March 2016**

The Medical Physics Zone was funded by the Institute of Physics and Engineering in Medicine of which Paul, Mobeen, Jennifer and Greg were members and the Institute of Physics. Mobeen and Jennifer were members. Paul researches new ways of using light to treat skin diseases, Mobeen is working on ways of imaging the brain to pick out age related diseases, Laura is a clinical vascular scientist who studies arteries and veins, Jen is a radiotherapy physicist and Greg is researching new ways to detect cancer. The zone was quite busy with a higher than average amount of questions approved and answers given, although just 70% of students who logged in were active throughout the event. There was a lot of interest in health and disease, especially in the cancer research focus of the scientists. Paul and Greg, who came first and second, were the most active in the event, accounting for almost half of all ASK answers and three quarters of all live chat activity by scientists.











## Key figures from the Medical Physics Zone and the averages of the March zones

PAGE VIEWS	MEDICAL PHYSICS ZONE	MAR '16 ZONES AVERAGE
Total zone	31,939	26,007
ASK page	1,848	1,896
CHAT page	4,399	3,412
VOTE page	2,162	1,820

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This zone mainly focused on the medical physics through the questions asked by the students related to cancer, skin disease and other health issues. Lots of students asked informed questions about potential cures for cancer, and in one in instance a student linked to an article they had found interesting about a 'pen' that can detect cancerous cells.

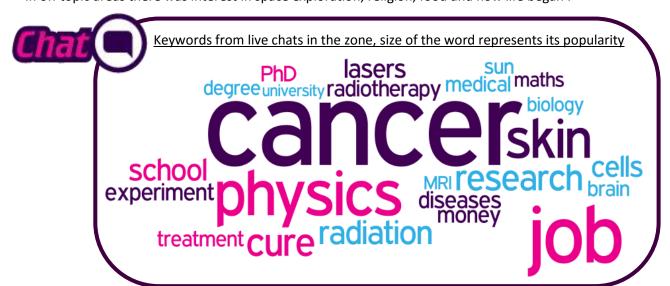
Scientists were asked questions relating to their research which showed the students

	MEDICAL PHYSICS ZONE	MAR '16 ZONES AVERAGE	IAS 2012-15 AVERAGE
Schools	13	12	10
Students logged in	591	461	360
% of students active in ASK, CHAT or VOTE	70%	87%	85%
Questions asked	560	642	712
Questions approved	300	287	306
Answers given	773	586	555
Comments	59	132	80
Votes	358	352	286
Live chats	19	19	15
Lines of live chat	6,717	6,750	4,970
Average lines per live chat	354	364	339

had carefully read their profiles. For example, Mobeen was asked about the links between the amount of iron in our brain and Alzheimer's, Laura about how severe problems with the veins can be and Jen about why radiotherapy doesn't harm the rest of the body when you are undergoing treatment.

There were questions regarding the scientists' day to day lives and career paths, with students wanting to know about qualifications needed for specific jobs, how they get funded, whether they travel with their jobs and how much time they spend working.

In off topic areas there was interest in space exploration, religion, food and how life began.









Keywords of questions asked in the zone, length of bar represents frequency of use

0 5 10 15 20 cure cancer **Example** iob **Questions** career brain (click for links) money "What is narrowband skin disease "Were you always ultraviolet light and the smartest kid in work why is it the most science and maths common form of lessons?" detection phototherapy?" discovery "How do you experiment "How do you get effectively explain Alzheimer's disease and procedures to favourite "What does cancer patients that must is it curable?" actually do?" undergo them?" future iron school "Why doesn't "What is more win "How did life begin?" dangerous - a brain radiation in cancer disease treatment damage aneurysm or an the rest of the abdominal aortic invention body?" aneurysm?" radiotherapy world "Do you believe it is "How does "How is it possible to pragmatic to gravitational time "Why do tapeworms cure cancer through continue spending dilation affect the show on 100 year old light?" millions on expensive growth rate of x-rays but not new **NASA** missions?" cells?" ones?" "Do scientists have to "How does iron "How long is a come up with a separate cure for accumulate in the "What is anti-matter?" chicken pregnant each different type of brain?" for?" cancer?"





### Examples of good engagement

Scientists were encouraging and responsive to students' concerns about how difficult they found science subjects in school, giving useful advice:

"Physics is so hard is there any tips you have in how we can improve and understand?"— Student

"Pay attention in maths. A lot of physics and maths is basically the same subject so if you can do one, you get the other for free." - Greg, scientist

"I think not to worry about not understanding everything first time - I certainly didn't! It takes time and some studying but with patience it can make more sense (and become more enjoyable too!)" - Paul, scientist

"Try reading some popular science books - they might have cool pictures and have to explain things clearly. It will help explain things and remind you about why it's so interesting." - Jen, scientist

There was lots of interest in cancer, with students questioning what they had read on the scientists' profiles. Some of the questions asked were very in depth for a live chat but scientists were good at explaining their research simply and clearly:

"How do you treat skin disease with light? I thought you could get skin cancer from not protecting your skin from the sun? How does using the light cure the cancer?" - Student

"You're right, from overexposure to UV you can increase your risk of skin cancer, but by carefully controlling the wavelength and the amount of light you get, we can also use it as a treatment." - Paul, scientist

## Scientist winner: Paul O'Mahoney

Paul's plans for the prize money: "I'd try to collaborate with the local science centre in Dundee and come up with an exhibition or show that will teach people about using light in medicine. It's something I'm really interested in, and from speaking to other people they find it really interesting too. So it would be nice to show people more about using light in medicine and hopefully it would get young people more interested in science too!" Read Paul's thank you message.



#### Student winner: Katie

For great engagement during the event, this student will receive a gift voucher and a certificate.

#### Feedback

We're still collecting feedback from teachers, students and scientists but here are a few of the comments made during the event...

"I spoke to a living scientist YAY I really enjoyed this chat" - Student

"I thought it was a fantastic event and that I am very happy to have been part of. I loved the competitive side of it and I learnt so much from the other scientists and the students." - Scientist

