Lightweight becomes a heavyweight

Held on Wednesday 26 April 2006 at The Armourers’ Hall of The Worshipful Company of Armourers and Brasiers in London, the final of the Institute’s annual Young Persons’ Lecture Competition saw seven finalists do battle. Having been victorious in their regional heats, contestants presented their lectures and answered questions from the judges.

Although they were not grilled nearly as ferociously as the candidates on the UK’s hit television show, The Apprentice, (where entrants compete to work for top businessman Sir Alan Sugar), Chief Executive of the Institute Bernie Rickinson saw some similarities between the two contests. He said on the night, ‘From the point of view of what he [Sir Alan Sugar] is looking for and what each of the contestants this evening has shown, communication is key’.

Judges Jeff Smith of Wardell Armstrong, Siobhan Matthews, Chair of the Institute’s Young Members’ Committee, and Phil Bischler, Vice-Chair of the Institute’s Local Affairs Board, were unanimous in their choice for first place and the £750 prize – Andrew Tarpey of the Midlands Region, who works as Senior Engineer at Jaguar. Tarpey also won the competition in 2001. The judging criteria focused on the standard of the presentation.

Tarpey’s lecture, ‘Structural adhesive use in lightweight vehicle architecture’ presented the Jaguar XJ 2003, which has an aluminium monocoque body. He looked at the importance of weight to a vehicle’s performance and environmental impact, and how the new XJ was 200kg lighter than its predecessor. He said, ‘For every 10% of weight you remove from a car, there is a 10% economy increase. Adhesive bonding offers the best of both worlds – lightness and stiffness’.

Tarpey might have focused on the lightweight properties of the car, but his talk certainly did not fall short of the judges’ expectations. Bischler said: ‘The winner showed an excellent technique in presentation. It was fun, clear, and it showed a tremendous amount of enthusiasm in the subject.’ Tarpey’s top tip for future entrants is to ‘use powerpoint just enough. If you know when to stop, that’s the secret. Never let animation get in the way of your presentation.’

One entrant that recognised this point was the winner of the second prize and £400, Eoin Cunningham of Queens University Belfast, Northern Ireland. His lecture was on ‘Macrostructural Replication of Marine Algae to Mimic Cancellous Bone’. ‘This was something I knew nothing about’, said Bischler. ‘He was very clear and concise, and the visual aids in this particular presentation were excellent.’ Cunningham had declared during his talk that ‘This could change the face of bone grafts around the world forever’, and was visibly shocked to have been placed. ‘I was lucky! There was a lump in my throat the whole time.’

Moving on from bone grafts to materials considerations in hip replacements, Sophie Williams of the University of Leeds came third, winning £200. Williams added a bit of humour to the occasion with her opening line – ‘I’m going to talk about why we need hip replacements which I’m sure some of the people in this room should already know about’!

Talking to Materials World, Bischler said, ‘I don’t think there is anything equivalent to this competition across the Institutes in this country. This acts like a snapshot of materials.’ Fellow judge Matthews echoed this, emphasising how important it was for young people to participate in such competitions and gain experience in pitching and selling their research. ‘It is important to know your audience. If there is a difficult area, think about how to present it.’

Rupal Mehta and Meagan Ellis