

I am writing to provide evidence to the Enterprise and Learning Committee regarding the STEM skills in Wales. As Director of Faculty (Science, Maths & Social Science) at Yale College, I have had considerable experience of preparing high ability A Level scientists for the last 15 years. Traditionally, standards of Science students at Yale College are extremely high and we have a successful record of gaining Oxbridge places in Science and Maths. I am a member of the Wrexham Science Festival Steering Group and last July, I arranged for a two day visit of Dame Jocelyn Bell Burnell (discoverer of pulsars and President of the Institute of Physics), who made presentations at Glyndwr University, Yale College and local High Schools to raise interest in Astrophysics, especially in girls. In order to raise awareness of Science generally, we have introduced the weekly Pennant Science Society, where a variety of speakers from HE and industry talk to A Level Science and BTEC Ext Dip Applied Science students. Our students regularly receive WJEC prizes for the top marks at A Level Maths. We regularly accept PGCE students on placement from Bangor University and Chester University. We also offer NVQs in Laboratory Opps in the workplace and host various Technician training events. We have encouraged students to take up the Nuffield Science Bursaries, although take up is poor. We have tried to attract STEMNET Ambassadors through Techniquet in Cardiff, but to no avail.

My first concern is the lack of funding for replacement of expensive capital equipment. For example, in the Chemistry, we have an IR spectrophotometer, which is now beyond repair and replacement is out of the question. So the quality of the learning experience in Science is slowly being eroded as we currently need about £22000 investment for a replacement at £10000 and other items such as 2 airtracks in Physics, 5 waterbaths, 2 ovens, 2 drying cabinets, 2 electronic balances and an autoclave quite apart from 5 comptuers @ £500 each. Also software in science often becomes redundant as a result of computer network upgrades. We have one interactive whiteboard for the whole Faculty and that is dysfunctional and beyond repair. There is also a general lack of computers in science labs and Maths rooms (usually per room). You are more than welcome to come and see out facilities first hand, but if we are going to prod.

Secondly, we would like to know more about the specific STEM skills needs of the Welsh labour market, including international comparison with selected relevant countries and regions. Please could you provide a list of contacts from companies who are either a) experiencing difficulties in attracting appropriately skilled STEM staff or b) would be willing to build up links? We are currently in the process of building such link with the Wylfa Nuclear Power Station on Anglesey and the Optic Technium in St. Asaph, but we need to build up more such links locally in Wrexham.

Thirdly, please could we have funding to market STEM subjects in schools, by offering taster days to Year 8 or 9 students and possibly competitions?

I hope this information is useful to you.

Yours sincerely,

Jon Cartmell

MA (Cantab) MA (Leadership & Management)

Director of Curriculum and Standards,

Yale College,

Grove Park Road,

Wrexham LL12 7AB

Tel (01978) 311794 ext 2247