



## SCIENCE AND ENGINEERING AMBASSADORS NEWSLETTER – May 2008

### NEWS

Welcome to the May newsletter for Science and Engineering Ambassadors. We are into the school summer term now and all sorts of frantic activity is taking place before the end of the academic year! Thanks to everyone who has been involved in projects and challenges throughout the year and to those who are helping out with Finals of various competitions.

The Go4SET Celebration and Assessment day took place in April and thank you to the many Ambassadors and companies who have acted as mentors during this project. Unfortunately I was ill on the day of the Final at Strathclyde University and couldn't attend but I hear that it was a very good event. Congratulations to the winners; Largs Academy - Best Overall Project mentored by British Energy, Jordanhill School - Best Teamwork mentored by Halcrow, Mearns Castle High School - Innovation Award mentored by GlaxoSmithKline, St Ninian's High School - Students Choice mentored by Clyde Pumps. The Go4SET Challenge is a great project for companies to be involved in and to work closely with a school. Please contact me if you would like to be involved next year.



Mearns Castle High winners with mentors from GlaxoSmithKline

### STEMNET Contracts

You will have received an email from STEMNET recently informing you of changes to the way in which the contract for the Science and Engineering Ambassador programme is held by organisations throughout the UK. All 47 SETPOINTS in the UK were required to tender for the SETPOINT and Ambassadors contracts and I am pleased to say that Scotland Scotland West, based at University of Glasgow, was successful in obtaining contracts for both the SETPOINT and the Science and Engineering Ambassadors programme. Our funding is now secure for the next 3 years, which means we can now concentrate on developing the programme further. STEMNET will shortly be introducing a much-improved online SEAs registration process and database. This will have a number of benefits for existing Ambassadors, including the ability for you to access and amend your own records, record activities and to allow more accurate matching of your skills and attributes with what schools require. Over the next few months we will be contacting you and asking you to complete the new registration form so that we can standardise the quality of data for all SEAs. More information on STEMNET can be found at [www.stemnet.org.uk](http://www.stemnet.org.uk)

#### SEAs update, May 08

SETPOINT Scotland, Kelvin Building, University of Glasgow, G12 8QQ. Tel: 0141 330 5370.

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## Duncanrig Secondary, East Kilbride – Renewable Energy Resources

A class of 20 S1 pupils are working on a Rich Task (an interdisciplinary study linking Art, English, Science and Technical) called Eco Power. It culminates in a debate where the pupils present on renewable sources of energy giving the facts of the current use of fossil fuels and the pros and cons of the use of renewable energy. The pupils prepare materials for the debate that will feature selected speakers who are leading lights in their respective fields.

Part of this task is for the pupils to write a formal letter to invite a speaker/leading light to help them with the debate on renewable. Pupils will be making model working wind turbines and will have experimented with renewable energy models.

The school would like one or two Ambassadors who can act as the “leading lights” in this project. Two leading lights can come to the school together if they prefer, each on either side of the debate. The ambassador would be Scientific/Engineering in background and assist/take part in the debate on renewable energy. The teachers have 5 or 6 weeks to teach the Rich Task Eco Power and so the debate would be approx WB 9 June 2008.

Please let me know as soon as possible **if you can help out with this school** so that they can plan for the debate and know who is helping out.

## May Reshuffle - Pearce Institute Govan 17<sup>th</sup> May

Glasgow University has supported the City Strolls Reshuffle events in the past where members of the local community come together to experience various community type activities and to discuss various community challenges. The next Reshuffle event takes place on Saturday 17<sup>th</sup> May from 12noon-6pm at the Pearce Institute in Govan. Glasgow University will be keeping the kids busy by offering “Madlab” sessions where participants can make flashing light circuits using soldering irons, as well as the wonky wire skill test. More information can be found at [www.citystrolls.com](http://www.citystrolls.com)



**If you would like to volunteer to help** with the Madlab sessions (you do not need to be there all afternoon) please let me know.

## Genetic Code and other Biology related Resources

One of our Ambassadors, Rebecca Sowden, has developed many resources, which she has used in school classrooms to help deliver biology related activities. Rebecca is happy for these resources to be available to other Ambassadors and hence if you are going into a school and would like an activity to take with you, these are ideal. Examples include a PowerPoint presentation with notes for the non-specialist on genetic code activity, how to extract DNA from a banana, making an origami DNA double helix and other great biological activities, which tie in with the genetic code presentation. There is also a day-long workshop on Microbes and Medicines and "Making the Perfect Poo" presentation on the digestive system. The last 2 are a bit more involved and not quite so easy to carry out, but Rebecca has offered to train Ambassadors on the use of these if required.



**If you would like more information on these resources** or to discuss with Rebecca what you can do in a school, please let me know and I will put you in touch with her.

This is a great example of sharing of resources and if any other Ambassador has activities that can be shared with other SEAS please let me know and I can advertise them through the newsletter.

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## Young Women in Construction Conference



Over 100 senior school girls from across central Scotland will be attending the 3rd Young Women in Construction Conference on Wednesday 18th June 2008. The event is organised by ConstructionSkills in partnership with Glasgow Caledonian University and Glasgow Metropolitan College. After the opening speech, the delegates will hear a presentation relating to construction and the Commonwealth Games 2014. The girls will then participate in six practical activities, covering different aspects of construction, from civil engineering and architecture to heritage skills and finance. They will be accompanied throughout the day by role models from industry. These successful women working in various roles will be on-hand to chat to the girls and share their experiences of being a woman in construction. The conference lunch will be hosted by employers from the industry who will also be able to give an insight into the business of construction and hopefully learn from the delegates too.

If you are involved in the construction industry and **would like to take part in the conference as a role model** please contact me and I will put you in touch with ConstructionSkills.



## Rapid Response Engineering Challenge

**Engineering for Life**

The Rapid Response Engineering Challenge demonstrates a new method of communicating engineering principles to S1 school children, based on re-building a devastated country hit by a hurricane. All pupils are introduced to a scenario where they have to imagine they are engineers going to help people who have very little infrastructure left after the storm. An inspirational introduction is given through an interactive presentation by a civil engineer. This motivational talk will last for approximately 45/50 minutes. Then, over one or two weeks, the pupils prepare their skills through their normal lessons. Following training, the pupils demonstrate the skills they have learnt at an Activities Day. After this there is on-going fund-raising for needy children in the world.

By operating across the whole curriculum, teachers find this activity runs across the whole spectrum of education and enables the pupils to see a practical usefulness to their lessons.

15 schools are running the RREC in 2007/08 (Kirkintilloch High, Barrhead High, Duncanrig Secondary, Harris Academy, Carnoustie High, Arbroath Academy, Montrose Academy, Kinross High, Pitlochry High, Turriff Academy, Currie High, Deans Community High, St Augustine's High, Fettes College and Cairngorm High) with a further 20 interested in taking up the challenge in 2009.

We need engineers to help with the challenge. Training takes half-a-day with a further half-day for the Motivational Talk and a day to assist at the Activities Day.

**If you would like to be involved with the RREC in 2008/09** please contact me and I will put you in touch with the ICE (Institution of Civil Engineers) who organise and run the Challenge. The Rapid Response Engineering Challenge has been developed at Carnoustie High School in association with the Institution of Civil Engineers (ICE), CITB Construction Skills, Careers-Scotland, Determined to Succeed, Learning and Teaching Scotland (LTS) and Angus Council.

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## Chemical Engineering experience sought

I have had a request from an Ambassador who is looking for the opportunity for a sixteen year old girl to have an insight, for one or two weeks, into a career in Chemical Engineering. The girl lives in Abu Dhabi and is keen to study chemical engineering at university. She is coming home to Glasgow in August 2008 and would like to meet a SEA or visit a company/university who can offer Chemical Engineering experience while she is in Scotland. **If you can offer an opportunity in this area please contact me.**



## Smallpeice Trust – Marine Technology Course for S3 pupils

The Smallpeice Trust is an independent educational charity which promotes engineering, design, technology and sciences to 12 to 18 year old students. Every year, they run over 30 different courses at universities around the UK covering subjects like nanotechnology, materials technology, nuclear marine engineering, motorsports, aerospace technology, biomedical engineering and sustainable energy.

As part of a UK wide program, they are running a Marine technology course for S3 students (14/15 yrs old) at University of Strathclyde from 29 June to 3 July 2008. On the course, students will learn about naval architecture and get to build their own vessels. It will need to carry cargo, go at a particular speed etc. Students will also go on a visit to ship building yard and learn about career opportunities in this sector.

If you are working in a school at the moment please let your contact know that this course is on offer to **any S3 pupil who would like to apply**. More information and application forms can be found at [www.smallpeicetrust.org.uk](http://www.smallpeicetrust.org.uk) and click on course information, timetable.

## Make IT Happen for Primary Schools

The IET (Institute for Engineering and Technology) is working in partnership with the Parliamentary Information Technology Committee (PITCOM) and e-skills UK to run a national competition for primary school pupils aged 9-11.



Make IT Happen encourages primary pupils to use technology such as audio-visual materials, web pages or interactive posters to describe how they would improve an aspect of their local community. It's important that the issues identified are relevant to schools eg tackling bullying, helping to improve the local environment or supporting the local community.

Judges will be looking for student-led entries which show initiative and imagination and make the most of technology skills. Generous cash prizes will be available for the winning school from each of the English Regions and Northern Ireland, Wales and Scotland. In addition, three overall winners will be selected. Winning schools will be presented with their prizes at a ceremony at The Houses of Parliament in October.

The closing date is 13 July and full details can be found at [www.cc4g.net/makeithappen](http://www.cc4g.net/makeithappen)

**If you are working with a school that may be interested in this Challenge** please pass this information on to the relevant teacher

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## Free Lectures

There are a variety of free lectures available from different organisations in May which Science and Engineering Ambassadors are welcome to attend.

**"The flight of aircraft, birds and insects: from the midge to the Jumbo-jet"**, Glasgow University Science Festival Lectures - 8th May, Boyd Orr Lecture Theatre, Glasgow University, 7pm. Dr Eric Gillies will be looking at the science of flight and, in particular, looking at how many aircraft technologies, especially in modern unmanned aerial vehicles, have been inspired by flight in nature.

**'Global Water Sustainability'**, Europe-Japan Dialogue series – 12th of May, Sir Charles Wilson Building, Glasgow University, 6:00pm. Professor Taikan Oki, Institute of Industrial Science, University of Tokyo. Water is a naturally circulating resource that is constantly recharged. Therefore, even though the stocks of water in natural and artificial reservoirs are helpful to increase the available water resources for human society, the flow of water should be the main focus in water resources assessments. The climate system puts an upper limit on the circulation rate of available renewable freshwater resources (RFR).

**"Fuel Cycle"**, British Nuclear Energy Society – 13th May, Halcrow's offices, City Park, 368 Alexandra Parade, Glasgow, 6:00pm. Adrian Bull from Westinghouse, will look into the various stages of the nuclear fuel cycle and outline some of the developments that have changed the picture over the years. For more information, see [www.bnescass.com/events.htm](http://www.bnescass.com/events.htm)

**"Putting microbes to work - from the pristine Arctic to the slums of Bangladesh"**, Glasgow University Science Festival Lectures - 15th May, Boyd Orr Lecture Theatre, Glasgow University, 7pm. Professor Bill Sloan. The lecture takes you on a journey from the genetic characterisation of bacteria, through the microbial communities of the European arctic to new technologies that could lead to carbon neutral and carbon negative waste treatment technologies to combat global warming.

**"New Bones for Old - rebuilding human bones"**, Glasgow University Science Festival Lectures - 22nd May, Boyd Orr Lecture Theatre, Glasgow University, 7pm. Professor Elizabeth Tanner of the Departments of Civil and Mechanical Engineering will talk about research regarding rebuilding human bones.

**"Seeing is believing - Ten true things about vision"**, Glasgow University Science Festival Lectures - 29th May, Boyd Orr Lecture Theatre, Glasgow University, 7pm. Royal Institution Lecture - Dr Ben Craven. Our sense of vision is full of surprises. Did you know that black can be lighter than white? Or that mixing red and green makes yellow? Or that the reason that a pigeon bobs its head madly back and forth is actually to keep it still? With one mind-boggling demonstration after another, this talk explores these and other mysteries of vision. The talk will cover the eye, binocular vision, colour vision, vision in other creatures, balance, and more besides.

For more information on the Glasgow University Science Festival lectures please see [www.glasgowsciencefestival.org.uk](http://www.glasgowsciencefestival.org.uk)

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## AMBASSADOR REQUESTS

Please see below schools that have requested Ambassadors. If you are able to help please contact me as soon as possible. The first 2 school requests have been outstanding for a couple of months so if you can help with either of the schools it would be great.

SCHOOLS REQUIRING AMBASSADORS	AREA	HELP REQUIRED
St Mary's Primary, Greenock	Inverclyde	Help with K'Nex in general. Have little experience and would like to make better use of the resources they have.
Harestanes Primary	Kirkintilloch	Help with starting a new Young Engineers Club
Duncanrig Secondary	East Kilbride	Help with Renewable Energy topic (see section above)

EVENTS REQUIRING AMBASSADORS	DATE	HELP REQUIRED
Institute of Physics – <b>Lab in a Lorry</b> See schools below:		3 – 4 Ambassadors a day required to help with experiments
Gleniffer High School, Paisley	20 <sup>th</sup> and 21 <sup>st</sup> May	Lab in a Lorry
St Luke's High School, East Renfrewshire	22 <sup>nd</sup> May	Lab in a Lorry
City Strolls, May Reshuffle Event, Govan	18th May	Help with Madlab kits
<b>KNEX AREA FINALS</b> – see below		
Ayrshire Final - Loudon Castle, Galston	20th May	Judges required
Glasgow Final - Glasgow College of Nautical Studies	21st May	Judges required
Lanarkshire Final - Scottish Enterprise Technology Park, East Kilbride	29th May	Judges required
Scottish Final, Kelvin Gallery, University of Glasgow	11 <sup>th</sup> June	Judges required
Glasgow University Science Festival – Family Days	7 <sup>th</sup> & 15 <sup>th</sup> June	General help required
Young Women in Construction Conference, Glasgow Caledonian University	18 <sup>th</sup> June	Role models required
Rapid Response Engineering Challenge – various areas	2008/09 session	Motivational Speakers required

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## INDUCTION TRAINING

If you have not already undertaken your induction training, the next session will be run on **Tuesday 3<sup>rd</sup> June at 3:00pm** in the University of Glasgow. If you would like to register for this induction please email or call me and I will reserve a place for you. The training will last around 1.5 hours and will enable you to complete your disclosure form also.

## DISCLOSURES

Remember that Ambassadors **MUST** have a valid disclosure to work as an Ambassador. You are not covered by STEMNET insurance if you do have a valid disclosure. Disclosures are valid for 3 years so if yours has expired, or nearing its renewal date, please contact me to arrange to get a new disclosure processed. At the end of April we will be undertaking an administration check of all Ambassadors and those without a valid disclosure will be requested to complete a check or be removed from the SEAS program.

**If you wish to volunteer for any of the activities or schools listed please contact me as below.**  
**Remember to keep looking at our website [www.setpointscotlandseas.org.uk](http://www.setpointscotlandseas.org.uk) for updated activities**

Regards

**Aileen Hamilton**

**Science and Engineering Ambassadors Co-ordinator**

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