

HEA STEM:

Support for the Physical Sciences, Engineering and Materials

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The Higher Education Academy



The HEA champions excellent learning and teaching in higher education.

We do this by recognising and rewarding excellent teaching, bringing together people and resources to research and share best practice, and by helping to influence, shape and implement policy.

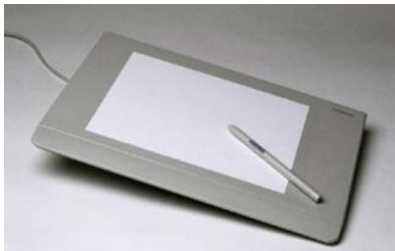


HEA Categories of work

Academic practice development

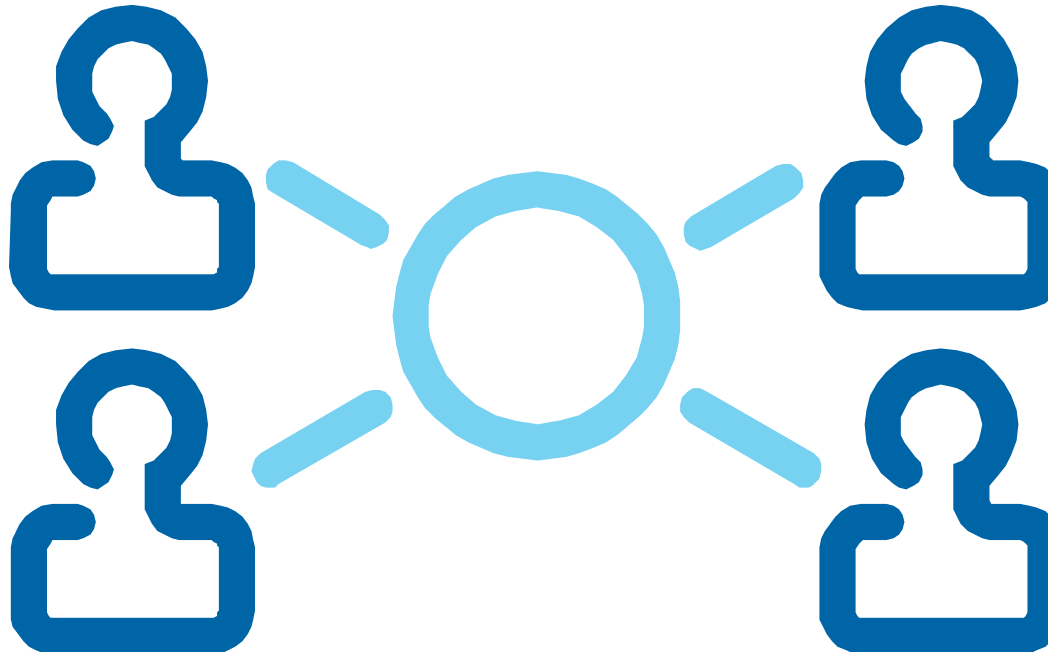
Teacher excellence

Institutional strategy and change



HEA Academic Practice

STEM



Social
Science

Health

Arts and
Humanities



HEA STEM Disciplines

Geography, Earth and Environmental Sciences

Physical Sciences

Biological Sciences

Computing

Maths Stats and OR

Engineering

Built Environment

Psychology



Physical Sciences

Astronomy

Chemistry

Forensic science

Physics

Engineering and Materials

Materials Science

General Engineering

Civil Engineering

Mechanical Engineering

Aerospace Engineering

Naval Architecture

Electronic and Electrical
Engineering

Production and Manufacturing
Engineering

Chemical, Process and Energy
Engineering

Minerals Technology

Metallurgy

Ceramics and glasses

Polymers and Textiles

Maritime Technology

Industrial Biotechnology

Other: Engineering, Materials,
Technology

Integrated Thematic Work

Internationalisation

Assessment and feedback

Employability

Flexible learning

Retention and success

Reward and recognition

Education for Sustainable Development

Students as Partners



Professional Recognition

Our recognition scheme contributes towards the professionalisation of teaching by conferring the status of:

AFHEA – Associate Fellow of the Higher Education Academy

FHEA – Fellows of the Higher Education Academy (via NAP)

SFHEA - Senior Fellow of the Higher Education Academy

PFHEA – Principal Fellow of the Higher Education Academy

Individual and accredited routes

<http://www.heacademy.ac.uk/professional-recognition>

The scheme is closely referenced to the UK Professional Standards Framework (UKPSF)

Publications

Newsletter – subscribe at

http://www.heacademy.ac.uk/my_academy

New Directions

<http://www.heacademy.ac.uk/journals/new-directions>



Engineering Education

<http://www.heacademy.ac.uk/journals/detail/engineering-education>

Twice yearly journal in paper and electronic forms



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| <input checked="" type="checkbox"/> HEA STEM | <input type="checkbox"/> Education for Sustainable Development |
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New Directions issue 8

Educational research: reviewing the literature

Learning chemistry through placements: building on good practice and identifying new opportunities

A blended-learning approach to supporting students in organic chemistry: methodology and outcomes

A case study exploring students' problem-solving strategies in a PBL chemistry task

A clerical error provides a unique opportunity to study the effect of previously seen exam questions on exam results

A view of first year transition from Down Under

Engineering Education vol 7 iss 2



Role of commercial software in teaching finite element analysis at undergraduate level: a case study

Unemployment of engineering graduates: the key issues

Feedback for enhanced student performance: lessons from simple control theory

Transnational education and engineering accreditations

A networked demonstrator help request system for laboratory work

Manufacturing excellent engineers: skill development in a Masters programme

A quest for helpful feedback to programming coursework

New to Teaching Events



Residential for new academic staff

One day for postgraduate students and postdoctoral researchers

HEA STEM (Physical Sciences): New To Teaching in the Physical Sciences

Date: 16 May 2013 - 17 May 2013

Start Time: 12:30 pm

Location/venue: Mercure Hotel, Manchester Piccadilly, Manchester.

This event is for academic staff who are new to teaching (have been teaching for less than five years) and would like a chance to develop their teaching skills in the context of their own discipline.

During the event, you will have the opportunity to get to know others both in your subject and across the four physical science subjects. We will also explore ways in which you can continue to work together after the event.

Registration, lunches, dinner and accommodation are free to staff members of a subscribing institution to the Higher Education Academy. Non-subscribing institutions there is a charge of £150

Thursday 16th May

1230-1300 Arrival and registration

1300-1400 Lunch

1400-1430 Welcome and introductions

1430-1500 The academic role in the physical sciences

1500-1615 Developing your lecturing skills

1615-1645 Refreshments

1645-1800 Developing your tutorial/problem class teaching skills



Related documents/links

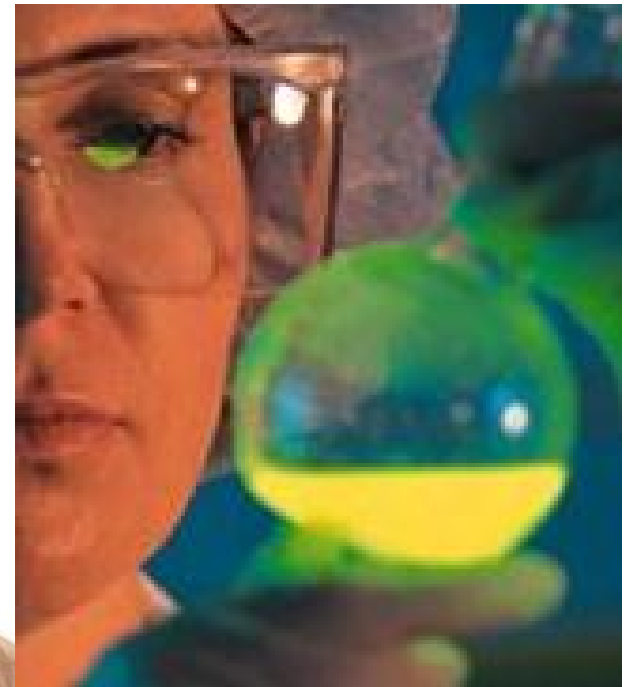
[Booking Form](#)

STEM L&T CONFERENCE

Join us in Birmingham, April 17 and
18 2013

[http://www.heacademy.ac.uk/event
s/detail/2012/17_18_Apr_HEA_ST
EM_2013_Conf_Bham](http://www.heacademy.ac.uk/events/detail/2012/17_18_Apr_HEA_STEM_2013_Conf_Bham)

Special Sessions for Lab teaching
Technicians of the Year Awards



Workshop Series 2012-2013



Clickers Reloaded: Current practice and future trends in the use of electronic voting systems for teaching and learning

Improving learner experience in forensic science higher education and practitioner training

Lectures without lecturing

Investigating and enhancing students' problem-solving strategies

New developments in laboratory work

Teaching thermodynamics

UK Travel Fund

Conferences, network meetings,
special interest groups

Up to £300

Open call

Decisions within one month of receipt

Need to be made at least a month
before the event

<http://www.heacademy.ac.uk/travel-fund>



Academic Associates

The Academy is building a community of Academic Associates to deliver and develop support for learning and teaching in higher education.

This consists of academics with current experience, who are leaders in their field, can work as part of a team, and who share the HEA's ambition to improve learning and teaching and the student learning experience.

<http://www.heacademy.ac.uk/academic-associates>

Academic Associates 2012-2013



Repository of forensic science undergraduate research projects

Virtual Teaching Fellow Network in physics

Library of video clips showing teaching scenarios

Building a community of astronomy teachers

Mapping UKPSF to Chartered Engineer Requirements

Teaching Maths to Engineers: summary of resources

Reviewers

Teaching Development Grants

- Individual

- Up to £7k

- Departmental

- Up to £30k

- Collaborative

- Up to £60k



Key themes are assessment and feedback and flexible learning

<http://www.heacademy.ac.uk/tdg>

Funded Projects

A comparative study of the expectations and attainment in assessment of international students in science, engineering and mathematics

Enhancing Employability for Chemists Through Personal Marketing and the Language of Industry

Research Environments For International Research Students (REFIRS)

The development of a set of student self study concordancing activities for the scientific foundation level corpus - FOCUS

Doctoral Programme

The HEA Doctoral Programme forms part of the Academy's strategy to undertake research to develop pedagogical knowledge and evidence-based practice in HE. The Academy invites supervisors in UK Higher Education Institutions (HEIs) to bid to host one or more of these doctoral studentships.

The proposed topic should be discipline specific learning and teaching research or interdisciplinary/generic pedagogical research and should have a clear benefit to either practice or to policy on practice. The research should be aligned with the HEA themes.

<http://www.heacademy.ac.uk/doctoral-programme>

Funded Doctoral Project



Using Peerwise to develop student problem solving skills

International Scholarships

The HEA's international scholarship scheme has been designed to benefit the UK Higher Education sector by bringing back interesting, challenging and innovative learning and teaching practice to the UK after visits of 3-6 months.

This scheme is aimed at supporting individuals in the sector to undertake specific investigations outside of the UK and deliver specific outcomes for dissemination within the UK sector at the end of the scholarship through various means, as appropriate to enhance the UK student learning experience.

Maximum £20k

<http://www.heacademy.ac.uk/international-scholarship-scheme>

Funded International Scholarship



An investigation of interactive technology's potential impact on student success and its ability to support flexible learning

External Examiners in Chemistry

Why not participate in this interesting research project on using standards in the external examination process? Participation will allow you to:

- reflect on your practice as an external examiner
- enrich your academic development
- contribute to the debate on standards in higher education

Your involvement requires a total of three hours for which you are offered **£70** in acknowledgement of your time. For further information about the project and how to become a participant see <http://www.brookes.ac.uk/aske/> .

Consultancy

Two free days available per institution per year

Additional days may be purchased

Example: Developing appropriate assessment at Masters level

Change Services

Higher education providers are experiencing unprecedented changes which are challenging traditional approaches to learning and teaching. The HEA offers a range of services designed to help institutions, faculties and/or departments adapt to these changes and thereby enhance the student learning experience.

<http://www.heacademy.ac.uk/change>

Key Contacts

E-mail: paul.yates@heacademy.ac.uk

Website:

<http://www.heacademy.ac.uk/disciplines/physical-sciences>

Twitter: @HEAphyssci

Email: gill.cooke@heacademy.ac.uk

Website:

<http://www.heacademy.ac.uk/disciplines/engineering>

Twitter: @HEAengineering

