Energy Futures Lab launched

Laura Gallagher

A NEW lab dedicated to tackling the scientific challenges posed by the world’s demand for energy was launched at Imperial this month. The Energy Futures Lab, a focal point for energy research across the College, aims to play a leading role in setting the energy agenda over the next 20 to 50 years. Its goal is to develop new multidisciplinary, cross-faculty research programmes, which will meet the broad energy challenges that we face, and facilitate the transition to a sustainable energy future.

The lab will focus its research at the intersection of diverse technologies, in order to find ways of meeting fundamental energy needs, such as heating, lighting, power and transportation, without contributing to climate change.

The lab, under the direction of Professor Nigel Braund, will enable Imperial to bring together its existing strengths in developing technologies, such as carbon capture, fossil fuel engineering, renewable energy resources and fuel cells, and its proven track record in innovation and entrepreneurship.

Energy Minister Malcolm Wicks, speaking at the launch, said: "The major energy issues we face extend far beyond just technical challenges, and so social scientist, engineers, business, economists and, dare I say, even politicians, have a key role to play in addressing these. I am happy that Imperial College London is dedicating its considerable technological expertise and its know-how in areas such as carbon capture, fuel cells and renewable energy to addressing these problems."

Urban energy use

At the launch of the lab, Imperial and BP announced a £4.5 million project to research the use of energy in cities.

The BP Urban Energy Systems project at Imperial, co-directed by Professor David Fish, will explore how money and energy could be saved in the future if cities integrated the systems that supply them with resources. It is the first to try to document and understand, in detail, how energy, people and materials flow through a city.

Keeping the nuclear option open

Increasing the safety and reliability of nuclear power, as a solution for satisfying energy needs, is the challenge addressed by a new initiative announced at the launch of the lab. The £6.1 million Keeping the Nuclear Option Open programme, funded by the research council’s Towards a Sustainable Energy Economy initiative, will investigate how nuclear power can become a more appealing option for future energy production. This represents the single largest research council commitment in fusion reactor research for more than thirty years. The researchers, led by Professor Robin Grimes, hope that the four-year project will help increase the acceptability of nuclear power as an alternative source of energy and maintain the UK’s expertise in nuclear technology.

For further information on these energy announcements go to www.imperial.ac.uk/news.

New faculty of natural sciences

Abigail Smith

A FACULTY of natural sciences has been created at Imperial, by combining the existing faculties of life sciences and physical sciences, and will become fully operational on 1 August 2006.

The new faculty creates a new academic grouping of the College’s internationally recognised scientific researchers in natural sciences, allowing them to take greater advantage of the increasingly closely aligned nature of scientific disciplines.

The rector, Sir Richard Sykes, has asked Professor Sir Peter Knight to head the new faculty, with immediate effect. Sir Peter is currently head of the department of physics.

The new combined faculty will employ over 1,100 staff, teach over 2,700 undergraduates, train over 800 PhD students, and have a research income totalling £56.5 million (2004-05 figures), bringing it close in size to the College’s other faculties, of engineering and medicine.

Professor Michael Duff, principal of the faculty of physical sciences, and Professor Sir Leszek Borysiuk, who has been acting principal of the faculty of life sciences as well as deputy rector, will step down from their faculty roles on 31 December 2005. In the interim, they will work with the new faculty principal to ensure a smooth transition.

Professor Borysiuk will remain deputy rector, an appointment he has held since August 2004.

Professor Duff will take up the Abdus Salam chair of theoretical physics, becoming leader of a strengthened theoretical physics grouping at the College.

Announcing the news to staff internally, Sir Richard Sykes thanked Professors Borysiuk and Duff for their service, support and leadership of the faculties, and said: "Science doesn’t stand still and our academic structures need to change too, to reflect new opportunities and understandings, and help us move our interdisciplinary thinking further forward. When we announced the faculty structure in 2001, we kept life and physical sciences apart, but today it is increasingly apparent that discipline areas within these two faculties are becoming more closely aligned. The scientific case for bringing the two together is compelling and exciting."

EnVision 2010

Laura Gallagher

EVOLVING the way the faculty of engineering teaches its undergraduates and prepares them for their future careers is the focus of a major new Imperial initiative, the second phase of which was launched on 14 November. EnVision 2010 aims to build on engineering’s strong record of excellent international reputation to ensure that by 2010, Imperial will be in a sustainable and recognised position within the top five institutions for engineering education in the world.

The project is looking at how the faculty can improve its educational ethos, its facilities and infrastructure, and its level of educational innovation. For example, it aims to find ways to increase students’ understanding of the practical application of engineering knowledge, develop their personal and professional, and celebrate exciting approaches to teaching.

Heads of department, academic staff, representatives from industry and over 1,500 undergraduate and alumni engineers have had input into the phase one scoping study, looking at the long-term international reputation of engineering education at Imperial.

Many recognised that internationally, undergraduate engineering education has seen a strong trend of innovation and radical reform over the past decade. EnVision 2010 aims to make the faculty of engineering a leader in such innovation, enhancing its international standing and ensuring that it continues to draw the best staff, students and employers.

Professor David Nettlecock, chair of both the faculty teaching committee and the EnVision 2010 steering group, said: "This project is important for the faculty, the College, and the UK as a whole. We are ambitious about the education we deliver. We need to keep on attracting the finest and brightest students and staff and we want our students to be grabbed by the best international companies when they graduate."

In the next edition...

• Archive corner

• Estates’ time capsule competition
£8.1 million grant win

Alex Platt

SQ Swata, professor of membrane protein crystallography in the division of molecular biophysics, has been awarded an £8.1 million Exploratory Research for Advanced Technology (ERATO) grant, from the Japan Science and Technology Agency. The agency assigns four grants each year to eminent Japanese scientists based on their work to date and recommendations from other senior scientists.

The grant has been awarded to continue Professor Swata’s work in researching general methodologies to determine cell receptor structures in humans. Receptors are proteins on the cell surface that interact with chemicals from outside the cells. There are more than a thousand of these on our bodies, but the chemical structures of almost all of them are yet to be established. To do so, his team uses X-ray crystallography, allowing the details of each receptor to be visualised.

Professor Swata says: “This is a hugely prestigious award. Science can be a very competitive field and it’s often difficult to get grants of this size. To be awarded this much money is great, more funding hopefully means more results, which is very exciting.”

One of the conditions of the grant is that 50 per cent of the money is spent in Japan. Professor Swata explained: “There will be three teams working on the project. Two in Japan, based at the Yokohama Kuro Institute, and one at the site associated with Diamond-MPL, based in the UK. Spreading the teams like this works perfectly, as the Japanese site will take care of its own magnetic and related technology and the UK, X-ray. Both techniques are essential to the project.

If the team is successful in establishing the methods to determine these structures, drugs of the future could be tailor-made for an individual, meaning greater success in treatment and avoidance of side effects.
New assistant directors of estates

September saw two new assistant directors of estates take up their posts at Imperial.
Steve Howe with responsibility for projects, joining John Walsh's departure, and Nick Roalle for properties services, following on from Andrew Babernek. Reporter Alex Platt went to meet them.

What is your background?
SH "I have spent 28 years in the property business, including working on the development of the Tate Modern. This has offered a real insight into both aspects of working in both the contracting and consultancy fields. I'm in this role because I really enjoy bringing these aspects together, seeing through into delivery and making sure that the end result is incredibly satisfying."
NR "I spent 16 years working at M&S in the property group. During that time I was involved with facilities management, planning and budgeting, quantity surveying and strategic programme management. Prior to that I was involved in the relocation of Associated Newspapers to Kensington, so I knew the area before moving to Imperial."

What does your new role entail?
SH "Projects at Imperial has a huge range. I oversee everything from the £30,000 revamp of a single room to the £50 million Southside redevelopment. I manage the teams allocated to each project. With £125 million annual capital expenditure on projects, this is definitely a full time job!"
NR "The facilities management portfolio I am responsible for at Imperial includes maintenance, campus services management for portergate, post, grounds, cleaning and waste disposal, security, fire, the help desk, faculty liaison link managers, building maintenance, campus energy and environmental management. These services run on each campus. This is obviously a large remit and one which costs around £28 million annually to maintain."

What particular challenges do you face?
SH "We are always working hard at keeping disruption to a minimum, balancing the work we're doing for people's benefits and the difficult balance that is a tricky one to manage. Successful real estate is a challenge too. We have a limited budget, so we need to ensure it's channelled in the right direction."
NR "I agree with Steve that funding is one of the biggest challenges. I hope to bring my experience of having worked for a company such as Marks and Spencer to Imperial."

Countdown to Commemoration

Wendy Raasdien

MORE than 1,500 Imperial College students graduated in style at the Royal Albert Hall on Commencement Day this month.
The ceremonies were smoothly from start to finish and everyone seemed to enjoy the special occasion. However, the outward picture of calm belies a huge amount of behind-the-scenes planning that starts before the graduands have even completed their studies.
First on the 20-page action list, overseen each year by events manager Pamela Michael and her team, is booking the Hall. The Royal Albert Hall is reserved by Imperial up to the year 2012, giving some idea of the hall's enduring popularity.
Planning begins in earnest in May with room bookings for receptions and robing. As soon as the degree results are announced in July, events officer Carol Marsh sends out invitations to all students in the class, setting a date for the Hall before 08.00—this year to find the floor still being repainted to cover traces of a lively National Television Awards party the night before. A help desk is set up to deal with any last-minute queries—from advising one participant which colour shoes to wear with her robe to dealing with an LSU student trying to join Imperial’s ceremony.

In August, while many are enjoying annual holiday, invitations are sent out to up to 2,000 students. Staff are asked to act as stewards and marshals, and the orchestras and choir are booked. In early September, flowers are ordered and the big screen and lighting for the hall are organised. Towards the end of the month, issuing the tickets is a major event in itself—this year, more than 9,000 were sent out over three days.

Two weeks before, a detailed running order for the ceremony is agreed, from procession lists to seating plans.
On the day, photographers start setting up at 05.00 and the events team arrives at the Hall before 08.00—this year to find the floor still being repainted to cover traces of a lively National Television Awards party the night before. A help desk is set up to deal with any last-minute queries—from advising one participant which colour shoes to wear with her robe to dealing with an LSU student trying to join Imperial’s ceremony.

Pamela Michael and her team are able to relax slightly as the first ceremony, this year for faculty of engineering and life sciences graduates, gets underway, with a two-hour interval for the second ceremony for the faculties of physical sciences and medicine.

Some of the 4,200 candidates served on the day

The day is rounded off with a presentation to the Chancellor, a reception for the Venkataraman family and speeches from the Chancellor, the President and the Provost. The last guests have left by 20.00 when the last tidying up takes place. The next day: it all begins again. The only thing that doesn’t change is the feeling of excitement.

A graduation day worth waiting for

Zol Perkins, Office of Alumni and Development

SIXTY-FOUR years after originally being awarded his first class honours degree in mathematics, alumnus Sydney Garvey finally returned to Imperial College to receive his certificate on Commemoration Day. Sydney, 85, was presented with his certificate by Professor Christopher Isham, dean of the faculty of physical sciences, at the departmental reception.

Although the campus has changed beyond recognition since Sydney was last here, he has fond memories of Imperial, not least because he met his wife here.

A prominent memory for Sydney took place just before one of his examinations in 1946, when one of his lecturers advised him not to be distracted by the day's news. It was not until after the exam that he actually heard that France had fallen to Germany. It was also WWII that prevented Sydney from collecting his degree certificate, as degree ceremonies could not be held during the war.

Sydney’s daughter, Helen, and husband, Margaret, accompanied him to the reception. They had managed to keep his visit to Imperial a secret until a few days before, only giving his family away when it was informed that he would need to bring his suit along with him on his trip to London.

MEDIA MENTIONS

Abigail Smith

Why male brains fall apart more easily

The gender divide that makes men more prone to Parkinson’s disease is all down to brain structure, according to researchers at the Netherlands Institute for Brain Research, who hope their findings could lead to more gender specific treatments for a range of conditions. Parkinson’s expert Glenn Gillies, neuroscientist and mental health, comments to BBC News Online (13.10.05): ‘A fascinating... we are realising that drugs have to be personalised and that one drug is not necessarily going to be the same for each individual.’

Living on the edge

Kerb-crawling pedestrians should take a step back and want to avoid the worst of London’s air pollution, says Swati Kaur of Imperial’s DAPPLE project, which aims to tackle urban contamination hotspots. The group’s latest research tested air quality along Marylebone Road and found that volunteers walking near the kerb were exposed to 10 per cent more polluting particles than those closer to buildings. “It is something that susceptible people like asthmatics and those suffering cardiovascular disease should be made aware of,” she tells New Scientist (05.11.05).

Natural home for the gifted and talented

The success of Imperial’s programme of summer schools, aimed at giving bright young people the opportunity to try out hands-on science, is highlighted by a report in The Guardian on gifted and talented education in the UK (08.11.05). Describing her time at the College learning about robotics, 14-year-old Lucy Conielle of St Marylebone School says: “Both my sisters were amazed. They go to fee-paying schools and they’ve never had the chance to do anything like that.”

Don’t go quackers over bird flu

The UK is well-prepared to deal with an outbreak of avian flu, thanks to backing from the “very strong” scientific community, according to Professor Roy Anderson, epidemiology, public health and primary care. Telling Reuters (29.10.05) that the most likely place for a human strain of the virus to develop is China rather than Britain, he says: “The density of ducks and geese and chickens per human is very high there, and the social environment means that humans have a great intimacy with their poultry livestock.”
A day in the life of...

Subo Shanmuganathan has been at imperial College for just over a year and is the staff development advisor for research staff, based at South Kensington. He explained: "I came from a research background where I had worked as a post-doctoral scientist in immunology and then a lecturer for several years. Then I changed career direction, because I valued the time spent in education and training more broadly and decided to return to Imperial, so years after completing my PhD here. It's interesting to see how the College has changed and progressed in that time." Reporter Alex Platt went to meet her to find out about a typical day in her working life.

9.08 If Subo doesn't have to run a training course, she starts the day by checking her emails. She said: "I find most researchers communicate mainly by email and have questions or concerns that they want to follow up on in a meeting. It's important to deal with emails regularly, so if researchers feel more confident about sharing their concerns and we can tailor our provision accordingly." 9.30 Meeting with Mary Ritter (pro-rector for postgraduate and international affairs) to discuss the strategic direction of the College's work carried out under funding from the Roberts Review. The review highlighted at national level the importance of transferable skills training. This aims to give both postdoctoral scientists and PhD students the skills they need to continue their knowledge gained in an academic context, but also to make a successful transition to future careers in academia, industry and elsewhere. Subo explained: "Since this initiative began in 2004, more and more researchers have become aware that there is a programme of development opportunities tailored especially for them, published in our booklet Think Ahead, Get Ahead. The 10 days that form the foundation for the training and development courses are now widely publicised and PIs (principal investigators) are equally starting to recognise the importance of the initiative." 10.30 Meeting with Christine Yates, HR's diversity and equality consultant, about the role of mentoring for female subordinates and a mentor to black and minority ethnic (BME) students. She said: "One of the most rewarding aspects of my job is the difference opportunities it presents to act as a mentor to other BME staff and students. The obstacles in conjunction, your GP can prescribe a range of nicotine replacement products or medicines to help reduce craving.

It's good to talk

LIz Gregson, Office of Alumni and Development

THE 2005 autumn telephone for the Student Opportunities Fund began last month, aiming to make contact with over 5,000 alumni of the College. The campaign will raise funds to provide scholarships for students at Imperial, based on academic excellence and financial need.

Until early December, from Monday to Thursday, around 12 students per evening will be making the phones of ICT's daytime help desk. As in previous years, callers have been recruited from a variety of departments.

Spotlight on Spectrum

Peter Gillings, New Media Manager

If you are new to Imperial and haven't already consulted the College's information web pages, or just haven't looked lately, it's well worth taking the time to explore (spectrums) huge range of topics. It's full of information for staff and students, including internal and external events, key College notices and up-to-date Imperial news.

With the introduction of the College web content management system (CMS), the dedicated Spectrum web pages will gradually disappear. In this newsletter and on our website, we shall focus on different information each time or point you towards an section's new home on the CMS.

To begin the series, the recently revised human resources section at www.imperial. ac.uk/spectrum/hr/ is an absolute must-read. Handy if you want to see where you sit in the salary scales or would like to be considered for a season ticket loan. Dr Sue Bower, who put all of your courses you can take to increase your transferable skills or confidence at work?

Please contact me at p.gillings@imperial. ac.uk if you have any questions about Spectrum's move to the CMS.

Noticeboard

While on campus, staff, students and visitors must wear their College identity cards or visitor's cards in a visible manner at all times and not wear clothing which covers their face.

The new dress code has been instituted as part of the College's continuing commitment to the health, safety and security of all members of the Imperial community. The College has also set new rules on personal safety and it cannot fail this if unwelcome visitors are able to move around campus unchallenged. Security within the College is not based solely on the ability of the Security staff to match a photograph with a face, but also on other members of the College recognising who is present on site.

The code has not been designed to dictate how people dress, but to ensure that no individual has their face obscured, thus making them unrecognisable.

Reporter is published every three weeks during term time. The copy deadline for issues relating to 12 November, Publication date is 7 December. Contributions are welcome on any topic, but must be 300 words or less. Please note the editor reserves the right to cut or edit any articles as necessary. Information correct at time of going to press.

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