



Pictured at the 'Delivering on Discovery' event (l-r): Michael Sweetman CEng, MIEI, MSD; Pat McIntyre, MIEI, DPS Engineering; guest speaker Chris Davis, Jacobs Engineering; guest speaker, David Shanahan, IDA; guest speaker, Brendan O'Callaghan, MSD; Professor Brian Glennon CEng, MIEI, UCD; Caroline Rocks MIEI, Rottapharm; and Patrick Leonard, MIEI, Savault Engineering. Committee members absent from photo: Kevin Smyth, MIEI, Jacobs Engineering, Louise Walsh, MIEI/Servier and Justine Butler, DPS Engineering.

Chemical and Process Engineers division holds inaugural event

The Chemical and Process division held their inaugural event entitled 'Delivering on Discovery' in Blackrock Castle Observatory, Cork recently. The evening was attended by over 60 professionals across the chemical and process industries in Ireland. Caroline Rocks of the Chemical and Process Division Committee reports

In December 2009 a number of like-minded process engineers from industry, consultancies and academia across Ireland came together and launched the new Engineers Ireland Chemical and Process division. The Committee's motivation was based on the belief that there has been a 'support vacuum' for the chemical and process engineering profession for many years in Ireland. Such a support system is needed for a profession which has made a significant contribution to development and growth in Ireland and which has been instrumental in putting us on the world stage across many sectors, including pharmaceuticals, biotechnologies, medical technologies, food and beverage processing, oil and gas, consumer healthcare, microelectronics, energy, environmental, science and education.

What do our members want?

The Committee developed an online survey to ensure that the support network developed by it is relevant and tailored specifically to what members want. A range of questions was devised to identify key considerations for the committee including the types of events members would find most beneficial (lectures, industrial tours, training, networking etc), their preferred locations and what members saw as the main benefits of joining a professional institution in the first place.

The committee also realised from the survey demographics that the support structure must be capable of delivering to the needs of all

grades of process professionals, from students and graduates to highly experienced engineers.

Reaching across Ireland

One of the Committee's highest priorities is to make events as accessible as possible across Ireland and not to limit event locations to Engineers Ireland's headquarters in Dublin. The first event was held in Cork and in order to reach more than one area, the Committee had some of their members based in Engineers Ireland headquarters on Clyde Road showing a webcast of the event.

This allowed attendees from Dublin and surrounding areas to see the lectures and experience the networking aspect of the event. The event was also available via webcast countrywide allowing participants access from their office, home or hotel.

'Delivering on Discovery'

The Committee were delighted to present three highly experienced and leading professionals in the industry as their first guest speakers at the inaugural lecture: Brendan O'Callaghan, vice president, Biologics, MSD; David Shanahan, global head of life sciences, IDA; and Chris Davis, biotechnology specialist, Jacobs Engineering.

The division would like to express its gratitude to our speakers for giving so much of their time to help us with our launch event.

The event was held in the unique surroundings of Blackrock Castle

The Committee welcomes new members for 2011.

If you are interested in becoming involved, please email chemical@engineersireland.ie

The Committee meetings are mostly held via conference call, so little travel is necessary.

The Committee are actively trying to improve the Division's support and services and using feedback to reshape the division, therefore, suggestions of activities that you, your team and your employer would benefit from are most welcome at any time at the same email address, chemical@engineersireland.ie

Observatory. Refreshments were provided before and after the lectures where attendees had the opportunity to network. Free tours of the Blackrock Castle Observatory were also arranged before and after the lectures. The lectures each lasted approximately thirty minutes with time allowed for questions and answers from both the live audience and the webcast audience.

The event was attended by over 70 people, showing the interest among Ireland's process engineers in supporting the Chemical and Process division in Ireland.

Pharmaceutical innovation

Brendan O'Callaghan, vice-president of MSD's biologics therapeutic proteins and contract manufacturing operations, provided insight on 'Pharmaceutical Innovation – How to Make it Happen' and particularly on MSD's strategy for innovation. The driver for pharmaceutical innovation is a mix of both external factors (healthcare reform and the economic downturn putting pressure on pharmaceutical pricing, along with increasing regulatory requirements) and internal factors (patent expiries, generic competition, low R&D productivity and the impacts of recent industry consolidations). There is also a fundamental shift occurring in the market place, with over 90 per cent of pharmaceutical sales growth expected to occur in the emerging markets of the so-called BRIC countries (Brazil, Russia, India, China), and only modest growth in the developed world markets of Europe, USA and Canada.

Brendan demonstrated the growth challenges that pharmaceutical companies face, by providing an example whereby a pharmaceutical company with a strong revenue base (greater than \$40bn) will require an additional \$10.8bn in revenue over five years to grow by a modest 3.5 per cent, which is the equivalent of three new blockbuster drugs coming onto the market. He commented: "Our only solution is to innovate and diversify."

Brendan pointed out that biologics will grow from comprising five of the top ten drug products to making up eight of the top ten in 2015.

He provided positive feedback in regard to MSD's experience in Ireland, with MSD re-investing more than €200m in their new vaccines sterile filling facility in Carlow, which will employ more than 150, coupled with their recent announcement of a shared business service in Dublin, employing another 150 people, in addition to their existing six manufacturing sites and two sales offices in Ireland.

Consolidated strategy

David Shanahan, the IDA's global head of life sciences highlighted the need for the consolidation of all strategies across the many organisations associated with life sciences in Ireland.

David emphasised the success of the life sciences industry in Ireland to date with over 48 per cent of life science projects in Europe based in Ireland. Six of the top ten blockbuster drugs are produced in Ireland and Ireland is the second largest European exporter of medical devices. Ireland also has an excellent track record with the FDA regulatory body (USA's Food and Drug Authority), with 33 FDA approved manufacturing sites and no warning letters received from the FDA in over ten years.

David's message was that the pharmaceutical and medical device industry in Ireland and globally can no longer rely on blockbuster drugs as drivers for the future but must diversify into marketing commodity medicines, nutraceuticals, convergent technologies (dynamic drug devices), connected health, 'polypills' to combine current discrete medicinal products and regenerative health platforms (e.g. using a drug's active product ingredient on prosthetics to reduce infection).

David stressed: "Engineers are needed more than ever to improve healthcare processes. Currently, we lack an electronic health record or infrastructure to support optimal patient care between our GP and hospital system and within our hospital network. Improvements in IT and process development and improvement in healthcare delivery would transform our national healthcare system in costs

and quality, and engineers have the critical skillsets and capabilities to address these sorts of challenges.”

Biologics trends

Chris Davis, biotechnology specialist from Jacobs Engineering delivered the closing lecture entitled ‘Trends in Biologics’ introducing the basics of biopharmaceuticals to the attendees and elaborating on trends in the industry.

Chris discussed the industry’s future products becoming more diversified from vaccines, therapeutic proteins and antibodies to stem cell therapy, tissue engineering, gene therapy, biosimilars and personalised medicines.

On a technical level, Chris illustrated the ongoing trend of decreasing bioreactor size due to increased protein productivity of host cells, one of the major improvements within the industry, and explained how biopharmaceutical companies have embraced the use of disposable technology to make their processes much more flexible.

Importance of the division’s role

The Chemical and Process division mandate is to widen the traditional Engineers Ireland strong civil and structural engineering remit by representing the chemical and process engineering professionals in Ireland. The Committee has a focus on science and engineering

learning and on providing access and exposure to the many sectors within this industry including medical technologies, pharmaceuticals, biopharmaceuticals, food and beverages and oil and gas. Committee member Pat McIntyre, chairman and director of DPS Engineering commented: “There is immense talent and knowledge in this country in the chemical and process industries. For the most part, we are ahead of the game in terms of experience. With this experience, Ireland has a head start but we need to think smarter and act smarter in order to progress against significant global competition. To achieve this, it is essential we strengthen the network of chemical and process engineers in Ireland.

“The chemical and process engineering profession has a significant part to play in Ireland’s future development and growth and can achieve this with greater success by having a strong professional support structure in place.”

The Chemical and Process division Committee would like to thank the staff at Blackrock Castle Observatory, the staff at Engineers Ireland and Mark McCarthy from Barry’s Photographic Services for their contribution to the event’s success.