

# WHEN SCIENCE BECOMES ART

The Images of Research competition reveals some pictorial gems of experiments carried out by UCD science students

**E**VERY RESEARCHER will recognise it instantly: that special picture which suddenly appears during the course of their work. It might be eye-catchingly beautiful, even to those who do not know its origins. It might effortlessly capture the essence of a project or concept. Or it might highlight a quirk, a side-avenue that your research opened up.

Unfortunately, such arresting and informative images are often destined to languish on laptops, or be hidden away in shelf-bound theses.

However, some break loose each year when University College Dublin invites its staff and students to submit entries to their Images of Research competition.

This year's winner, "Ray-zor sharp vision", was chosen by a judging panel – which included experts in research, communications, art and photography – from over 300 entries. It captures the unusual-looking iris of a ray fish caught off the Irish coast.

It's a striking sight that literally caught the eye of PhD student Edward Farrell from UCD's school of biology and environmental science, who was working on a survey ship when the ray was hauled aboard.

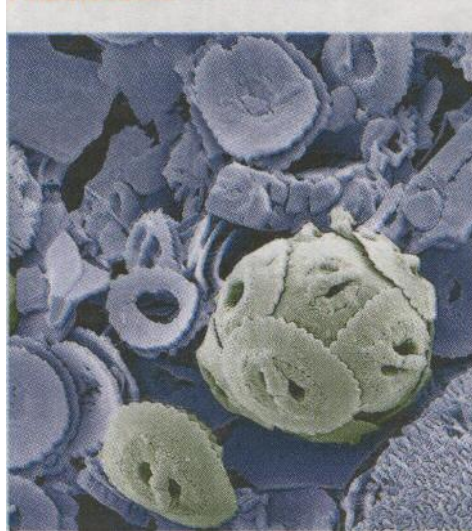
Farrell's research focuses not on rays, but also on the biology of the smooth-hound fish. He heard that he had won the competition while at sea gathering survey data.

The ocean floor holds a great many secrets and Lee Toms from UCD's school of geological sciences is sampling the sea-bed off Ireland's west coast for clues about climate change of old.

This image above of calcified nanofossils comes from a core of sediment taken from the Porcupine Bank on the sloped continental shelf. PhD student Toms analyses the layers of sedimented mud in the cores which were laid down across 400,000 years.

He is looking for indications of climate change and expanding what we know about climate and ocean conditions in this important area of the Atlantic.

FINDING NANO



"Darker mud comes from colder periods when there were rafts of icebergs in the Atlantic, while lighter mud is from warmer periods, like the one we are in now," explains Toms, whose work is funded by Science Foundation Ireland. The tiny coccolithospheres shown here can help date when the layers of mud

were deposited. These ones, which showed up under the scanning electron microscope, are about 120,000 years old, explains Toms. "The [fossils] often fall apart when they get deposited, but I came across this one and thought it was a nice image," he says.

## MEASURING METHANE AT GRASS LEVEL

The cows pictured above might look like they are about to blast off into space, but the "rocket packs" on their backs are actually devices for measuring methane.

The gas is a by-product of digesting grass, which is fermented by micro-organisms in the cows' digestive systems.

Bovine belching sounds like a harmless enough activity, but it's not entirely victimless.

Methane makes up around 13 per cent of Ireland's greenhouse gas emissions and its

production in the cow's gut also represents an energy loss for the animal, explains Dr Tommy Boland, a lecturer in ruminant nutrition at UCD's school of **agriculture**, food science and veterinary medicine.

That's why he and colleague Dr David Kenny want to reduce "enteric" **methane** production in beef herds and improve the animals' energy efficiency.

Their work, which is funded by the Department of **Agriculture**, looks at dietary strategies such as adding methane-inhibiting compounds, or soya oil, to feeds and the impact of grass quality on **methane** production.

The cows, pictured at UCD's farm in Newcastle, Co Dublin, are quite happy with the arrangement, according to Boland.

"They have no objections to the backpacks at all. They adapt very readily," he says. ■



some area for management. It means acknowledging that the future resides with a somewhat quixotic process where imagination and vision take precedence over statistical projections and

cost cutting. But how do you understand the process of creativity? Architecture often acts as a shop window for design. The quality of the built environment used to be a source of civic pride and for previous generations controversy over such buildings as the Dublin Central Bus Station brought design into public discussion.

"In architecture, we are certainly beginning to create absolutely beautiful buildings that stand the test of buildings any where in the world," says Sheehan. The point was underlined last month when Dublin's Grafton Architects won first prize in the learning category at the World Architecture Festival in Barcelona. Grafton won the award for the Luigi Bocconi University in fashion-focused Milan. Judges quoted the firm's "handling of space, light and local materials succeeded in distilling the essence of this tough city into a confident, contemporary form".

But if design is going to help lift the wider economy, then Irish creatives have to make an impact across the board. "Design is the key to identifying customer needs," argues McNulty, "because design is a process that adds value to customer experiences, it identifies added value whether real or perceived. It's about the ease of use, packaging of products, literature, customer support, websites, the brand."

Eugene Skelton is the design director of Dublin-based Dolmen, a product design company that specialises in medical devices. Dolmen's speciality is the ergonomic aspects of those devices, how equipment looks and feels in the hands of a skilled surgeon. The company is beginning to achieve global recognition.

"Initially we began work with a US subsidiary here in Ireland," says Skelton. "All the main medical companies have a subsidiary here. We began with Cook Medical on small projects in 2000 and they liked what we did, particularly the speed of our turnaround and our quality."

Since then, Dolmen have worked for most of the Cook Medical subsidiaries around the world, the company's workload boosted by word of mouth. Skelton emphasises that the company has been relentless in focusing on their core strengths. "It's mostly about human factors engineering," he says. But agility is also an important selling point.

The fact that Dolmen's work is mostly for overseas companies is, however, a telltale sign. There's a growing feeling that Ireland is getting many aspects of the design business absolutely right. The problem is with local take-up. As yet, Irish companies remain a missing link.

Sheehan believes the Government could do more to highlight the importance of design thinking. "You can understand the current priorities," he says. "But if we don't innovate, none of us will have medical cards and we won't be worrying about hospital beds." But McNulty

points out that policy in this area, at least at the grass roots level, is on track.

“Enterprise Ireland has been very good at getting innovation on the agenda, but companies are very slow to change. We have the right approach in place, but companies still see design as a luxury rather than a key to differentiation.”

In the Shannon region, Skillnet has been attempting to remedy that. Alan Maguire is the newly appointed network manager of the Shannon Design Skillnet. The initiative provides managers of small- and medium-sized companies with design insight around products, services, and brands. It was recently expanded with a second Skillnet Unlocking Innovation.

“Design Shannon runs Strategic Directions with 27 companies currently on the books going through a two-year design awareness programme,” says Maguire. “Last year, we had 37 companies and this year we have seven of those coming back for a third year.”

There are plans to take the initiative nationwide. “Unlocking Innovation is a new initiative at no cost to the customer. It’s feeding customers into Strategic Directions as we plan to go national with the programme,” he says. Unlocking Innovation provides half-day seminars to businesses to explain the benefits of design and innovation as well as providing practical advice and acts as a lure for the longer course.

Along with the Centre for Design Innovation in Sligo, which has launched a 15-month Innovation by Design programme, Unlocking Innovation and Design, Shannon’s Strategic Directions are evidence of growing momentum at management level.

As yet, though, there would appear to be a deficit not only in company uptake generally, but also arguably in critical mass and vision. For example, is there an Irish design identity that’s as recognisable as the Japanese or Scandinavian?

“There should be,” says Niall Scott, principal of Scott, Tallon and Walker (STW), a leading Irish architectural firm. “You can see it in Japan – a very strong design language. You can see it in Ireland in paintings, in the colours artists use; you can see they are distinctly Irish. For architecture, I don’t know.”

STW has traditionally encouraged clients to take a step beyond design and incorporate art into their buildings. Partner Dave Flannery has continued this tradition in the current generation of Irish architects at STW. “There is a massive lack of visual awareness in Ireland,” he says. “If you travel to Paris, for example, you sense a real awareness of architecture, even among taxi drivers, an awareness of the archi-

ects who are working in the city and of their work. You don’t get that in Ireland where creativity is more literary and theatre-based.”

It is a curious deficit in the Irish approach to innovation that it is not more visionary. Vision costs very little other than self belief. “In Ireland, we can certainly deliver first-class product design,” says Sheehan. “It is a fact though that you often have to go abroad to build a reputation, though we’re beginning to see it is possible to build a reputation while remaining here. The problem is we have a tendency to accept lower standards. It’s that old thing. We moan but we don’t complain.” ■

## DESIGN DATES

Nov 3rd: Launch of Designweek

From Nov 2nd: IDI Awards Exhibition at Substation, Caroline St, Cork

Nov 4th: Reform 08, Sustainable Design at the School of Music, Cork  
50 x 50 at the Institute of Creative Advertising and Design Original Print Gallery, Temple Bar, Dublin

Nov 5th: The Art of Design Exhibition at Áras an Chontae Offices, Charleville Road, Tullamore

Nov 6th: Irish Design Shop Exhibition, NCAD

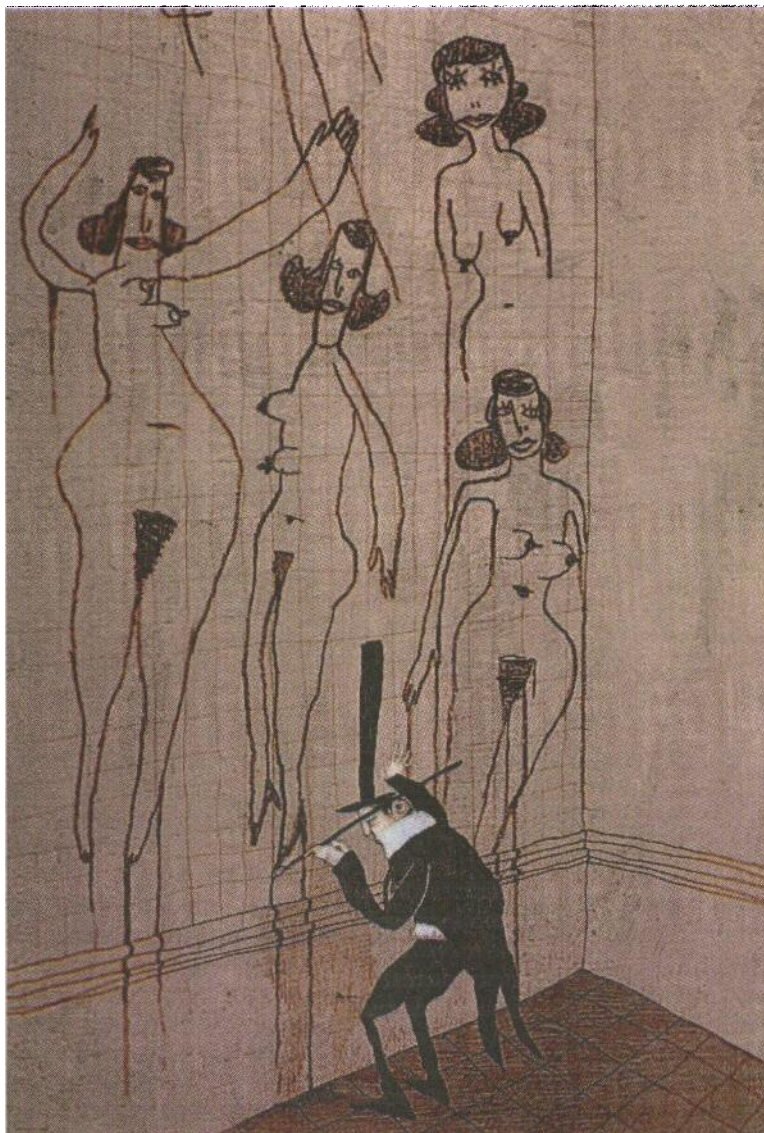
Place making (creating environments) at Univ. Ulster, York St, Belfast

Nov 7th: Irish Design Effectiveness Awards at the Shelbourne Hotel, Dublin

For more information, see: [designweek.ie](http://designweek.ie)



Ray-zor sharp vision is the unusual-looking iris of a ray fish caught off the Irish coast. Top: methane measuring at the UCD farm



**Clockwise from far left:**  
The Luigi Bocconi University in Milan, which Grafton Architects won first prize for at the World Architecture Festival in Barcelona; Candy Collective: an artwork from a presentation which will be displayed in The Roundy, Cork on November 6th; a range of design ideas that will be showcased during the week, including an equine endurance saddle, lights made from fabric and zips and a selection of rings