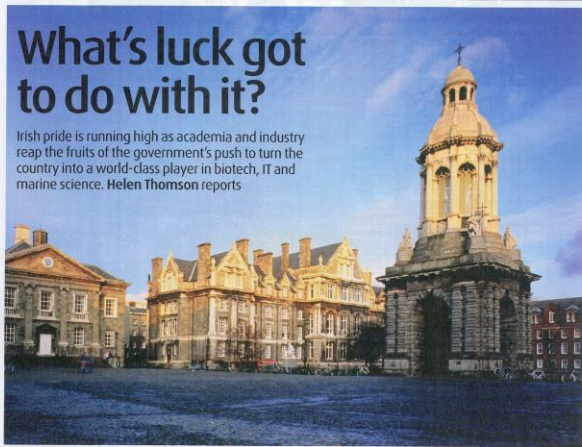


Science, work and business

The insider Ireland

What's luck got to do with it?

Irish pride is running high as academia and industry reap the fruits of the government's push to turn the country into a world-class player in biotech, IT and marine science. Helen Thomson reports



Diving into Dublin

"Why do I love Dublin? Because it's an Irish city with a New York attitude," says Tom Rondosa, a PhD student from the US studying at the University of Dublin's Trinity College. And he's right. Dublin's city centre may be surrounded by Georgian architecture, the Wicklow mountains, and be home to the main Guinness brewery, but with more than 1.6 million people living there – a quarter of Ireland's population – the city is big, busy and brimming with attitude.

Another enthusiastic resident is Linda Doyle of Trinity College's electronic and electrical engineering department. She is a lead researcher in network architectures at the

Centre for Telecommunications Value Chain Research – a group developing the next generation of telecommunications. While she loves the place, she warns that "if you don't like big cities, it won't be for you".

The cost of living in Dublin is high, with house prices much the same as those in London. This is a side effect of the economic boom which Ireland has enjoyed since the late 1990s, due in part to the government's commitment to science. The country's research landscape was transformed when prime minister Bertie Ahern launched the Strategy for Science, Technology and Innovation.

The cornerstone of this strategy was Science Foundation Ireland (SFI), which funds a variety of research, particularly in

biotechnology and information technology. Earlier this year, SFI announced that it has now allocated more than €1 billion (£170 million) into research and development. "Our only prerequisite for funding is that you are doing science of great quality," says Frank Gannon, the SFI's director-general. "That's how we've created an environment that attracts clusters of expertise in academia and industry – and why we are now competing on an international level in science."

In just a few years, burgeoning investment has revitalised science in Ireland and changed the landscape – literally. Many impressive new dedicated science buildings have sprung up. For example, Ireland's first purpose-built nanoscience research institute, the Centre

Ireland's capital is an exciting place to live, attracting cutting edge research to its universities and institutes

for Research on Adaptive Nanostructures and Nanodevices (CRANN), recently opened its doors for business. The centre cost €100 million and contains state-of-the-art underground laboratories with super-controlled environments. These labs are virtually vibration free, crucial for nanotech experiments because they are vulnerable to the tiniest changes in their environment.

CRANN's top-notch facilities – and the pioneering research opportunities they provide – are designed to attract internationally renowned trailblazers in nanotechnology and healthcare. A number of labs are dedicated to industry collaborations which will help transfer new research to the public domain. "We have been in the building for a couple of months now," says John Boland, principal investigator at CRANN, "and the performance of our ultra-low vibration space in the basement has been excellent."

The city is now also home to cutting-edge astrophysics. At University College Dublin, researchers are helping the European Space Agency with its Columbus laboratory, which blasted off to the International Space Station earlier this year. "Ireland may still be some way from producing its first astronaut, but we are developing the scientific ideas which will keep Europe's ISS astronauts busy in years to come," says David Browne, who is leading the project. "Having access to unique, weightless labs provides Irish industry with the opportunity to develop novel technologies and new materials, particularly renewable energy sources to help combat climate change."

Such novel projects and brand-new infrastructure are creating an attractive research climate in Ireland. Gannon says that overseas scientists can now find Irish universities and research institutes where they can work in a team that precisely fits their backgrounds. Doyle agrees, and adds that "the most exciting thing about coming to Ireland is the critical mass that is beginning to develop, which allows us to compete on an international scale. It's really important that we encourage international links with other universities, when you're doing research these days you have to acknowledge that you work on an international stage. Irish universities are much better at doing that now."

At Trinity College, Doyle's students

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regularly exchange with students from Virginia Tech in Blacksburg, University graduates and postdocs also benefit from the great funding environment, says Doyle. "In my group, I am finding it hard to hire all the people I need. The funded positions are there, I just need the people!" But she concedes that there is a downside to being a graduate in Ireland. "There is still a lack of permanent positions here which can be unsettling for students." This problem is widely acknowledged, says Doyle, and universities are putting in a lot of effort to encourage graduates to develop extra skills. "All the universities tend to have innovation offices now and provide entrepreneurship and business courses for students, which gives them the chance to branch out into other areas of industry and academia."

Cash in on Cork

The coastal city of Cork boasts beautiful farmland, rocky headlands and city skyscrapers. It holds Ireland's second-largest population – about half a million – but the city is nevertheless eclipsed by the rolling hills and coastal houses that overlook the river Lee.

"Cork is the ideal compromise between big city and small town," says Gene Freuder, director of the Cork Constraint Computation Centre (c3). "I walk everywhere, I don't need public transport in the city, the rest of Europe is a short plane ride away, and the beauty of the west of Ireland is on our doorstep." Based at University College Cork, c3 develops computer technology for "constraint

programming", which enables compute help humans make optimal decisions w faced with many choices. "I like to tell people that if they have solved a sudoku puzzle that they are constraint program Freuder explains.

Cork has opened its doors to the world pharmaceutical industry, with 10 of the biggest pharmaceutical companies own

"Cork is the ideal compromise between city and a small town"

manufacturing operations along the har Tax incentives and growing clusters of expertise at Irish universities are now encouraging these international compan to extend their research and developm expertise into Ireland.

"Although our main source of funding the SFI, investors include GlaxoSmithKil and other pharmaceutical companies are starting to show interest in our work," say Ted Dineen, project leader at Cork's Allmer Pharmabiotic Centre (APC). "These are the indications that big pharma is prepared to research in Ireland," he says, adding that pharmaceutical investment in Ireland is focused more on knowledge and research than manufacturing.

This transition is also visible in Dublin where Wyeth has recently started research production at a new campus at Grange Ca International Business Park in Clonsilla (than 15 kilometres from Dublin's city cent The new site is a €1.4 billion drug development and production facility – the largest biopharmaceutical development a manufacturing investment in the world.

Ireland is a fantastic place for scientists looking to collaborate with industry, says Freuder. Enterprise Ireland funds industry collaboration through its Innovation Partnership programme, and the Irish Development Agency, which entices foreign companies into Ireland. They work together to provide scientists with the support to successful collaborations with other academics and industry. "The number of people working in science is rather like the numbers in Silicon Valley so it's not possib to feel isolated within your subject," says Gannon. "The probability of meeting someone doing research of interest to you

BIOTECH BUZZ

Where Science Foundation Ireland spends its investment in biotechnology research

