In the United States, the National Science Foundation (NSF) and the DOE fund research into lighting and cheaper photovoltaics. For instance, the NSF this year made a three-year, $1.25-million grant to the University of Denver in Colorado and the University of Colorado at Boulder to study innovative materials for organic photovoltaics. Much of the DOE's funding goes through its laboratories, in particular the National Renewable Energy Laboratory in Golden, Colorado, and Oak Ridge National Laboratory in Tennessee, which administers DOE postdoc fellowships. The department is also running the SunShot Initiative, which has budgeted $457 million to cut the cost of solar cells by 75% within ten years — researchers are looking at all photovoltaic technologies, including organics. SunShot offers two-year fellowships, based in Washington DC, with rolling application deadlines.

Industrial efforts are also generating job opportunities. Philips, for instance, announced this year that it would spend €40 million to expand its pilot production line in Aachen, Germany, to make OLEDs for lighting under the brand name Lumiblade. Dietmar Thomas, a spokesman for Lumiblade, says that the company will start mass production by the end of next year, and expects OLEDs to penetrate household lighting within two or three years. Thomas says that the company plans to hire researchers in Aachen, as well as others to study OLED production processes at its research centre in Eindhoven, the Netherlands. "We are really talking about a huge group of people that we are going to get into the company," says Thomas, although he declines to provide specific numbers.

Scientists have also been starting their own companies for years. Sirringhaus and his colleagues, for instance, founded Plastic Logic in Mountain View, California, which makes an e-reader based on flexible electronics, and Eight19 in Cambridge, UK, which is developing printed plastic solar cells. Forrest has been involved with several start-ups, including Universal Display. He says that the field is rich enough for budding entrepreneurs to follow the path that fits them best, from striking off on their own to spinning out technologies developed in university labs.

The same goes for the field as a whole, says Giebink: researchers are constantly creating molecules with properties to be deciphered, and seeking applications for them. "It's a great place to be," he says, "if you're curious, if you're motivated to explore things and if you like to tinker." ■

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TURNING POINT
John Nolan

John Nolan, a vision scientist at Waterford Institute of Technology in Ireland, was awarded a €1.5-million (US$2-million), five-year starting grant by the European Research Council (ERC) in September — a first for a researcher from an institute of technology.

S. O'NEILL

Describe your PhD experience.
I graduated from Waterford Institute of Technology in 2002 and applied to do a PhD there, looking for links between nutrition and age-related macular degeneration, the leading cause of blindness. I was also interested in conducting population studies that might help us to understand what makes someone fit or healthy. At the time, Ireland's economy was quite strong, so it was a big decision to turn down better-paid positions. But it was the right decision. My graduate adviser and I had an exceptional experience — publishing our observations of the link between macular pigment and age-related macular degeneration in more than 800 people in just two years.

What has been your biggest turning point so far?
Without a doubt, it was winning a Fulbright scholarship to spend a year at the Medical College of Georgia in Augusta. It forced me to survive on my own. During that year, I churned out publications on how the shape and architecture of the eye affects performance of the pigment. Once I returned to Ireland, I was appointed as a deputy director of the macular-pigment research group.

How much of a long shot was it to apply for the ERC award?
It is a very prestigious award given for excellence in science. Awardees have to have a track record that shows they are capable of achieving their proposed blue-sky research idea. Typically, no more than 10% of applicants get funding across the whole of Europe. With such a low probability of success, some faculty members at Waterford were concerned that the effort would be for naught.

How did you approach the ERC application?
I promised myself when I started the application that I was going to get it. I proposed a study to find ways to optimize and enrich eye nutrition by dietary means, producing a direct impact on vision in the young normal population — by reducing issues of either glare or bad contrast through diet — and protecting vision in older people. I had to give myself enough time to write and critique the proposal — roughly a year — and prioritize and sacrifice some things. For example, I changed some of the methodology and extended our study to young as well as older people. And I got external experts to assess and be critical of the proposal, which some scientists can find difficult.

You could take the ERC funding anywhere. Why stay at Waterford?
If you have the right ideas, people and expertise, it doesn't matter whether you are at the Massachusetts Institute of Technology or at Waterford. I want to add to what we have achieved here. You always have to keep your options open to change. But for now, I've agreed with the institute to represent them, and I'm very proud to do that.

What's the single best thing you've done to establish your standing in the field?
The one strength that I have is staying focused on what I'm good at. There's always a danger, maybe even a temptation, for scientists to keep moving into different fields. Ideas can get fragmented. I think it's great to collaborate, but sometimes, in big cooperative projects, nobody takes responsibility.

How will you use this money?
My colleagues and I will be able to update our infrastructure, hire five researchers and help to raise the profile of our group, which will be important so that we can continue to bring in funds. The idea is to use all the capital we have to generate a centre of excellence for vision research. Our ultimate goal is to identify ways to prevent blindness resulting from age-related macular degeneration, and to identify ways to optimize vision and visual performance for everyone — perhaps even helping footballers to see the ball better. ■

INTERVIEW BY VIRGINIA GEWIN