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The picturesque French city of Grenoble attracts both mountain climbers and ambitious researchers.

FRANCE

Peak of potential

Once known mostly for its natural beauty, Grenoble is becoming a centre of innovation for academia and industry.

BY KATHARINE SANDERSON

Seated beneath some of Europe's most spectacular mountains — the Chartreuse, Vercors and Belledonne ranges in the French Alps — Grenoble is more than a playground for adrenalin-seeking skiers. It is a university and research town that hosts 22,800 research jobs, including 3,500 PhD students, 11,800 posts in public research and 7,500 in private research. Grenoble is fast becoming an innovation hub.

The city is home to one of France's longest-established science parks, and to multiple institutions intent on fostering technology transfer. The local network of angel investors is one of the most successful in the country, and Grenoble is second only to Paris in the number of French patent applications filed each year. The city has plans to expand its innovation and university links through large projects that could bring in billions of euros in funding and create thousands of jobs. It also provides support for scientific start-ups. But there are big challenges — in particular the French academic environment, which many deem unfriendly to postdocs at best.

INTERNATIONAL FLAIR

There are 13 public research institutes in Grenoble. Four are international: a campus of the European Molecular Biology Laboratory (EMBL); the European Synchrotron Radiation Facility; the Institute Laue–Langevin (ILL), a neutron source; and the laboratories of the Institute for Millimetre-wavelength Radioastronomy. The other institutes include the University of Grenoble, composed of multiple institutions, and French national research centres such as the Atomic and Alternative Energies Commission and the headquarters of the National Centre for Scientific Research, the country's main research body.

The construction continues. In July, the French government announced that the Grenoble Innovation for Advanced New Technologies (GIANT) campus is to host a virtual nanoelectronics research centre that will coordinate research projects at local institutes and companies. It is expected to create 8,000 jobs, although the proportion that will be in research is not yet known. Some €460 million (US$630 million) will be invested over 10 years, half from government and half from private investors.

"There is really a tradition of applied research and transfer to the real world here," says Véronique Pequignat, head of international business investment at the Grenoble region's economic-development body, the Agency for Studies and Promotion of Isère (AEPI). In 2009, Grenoble accounted for 780 of France's 15,000 patent applications. The city's contribution made up slightly more than one-third of the entire number of patents applied for in the surrounding Rhône-Alpes region, which includes Lyons, the second-largest metropolitan area in France.

The Inovallée, one of France's first science parks, opened in 1972 in Meylan, just outside Grenoble. It focuses on collaborations between academia and industry, and hosts 320 companies. Grenoble also provides a supportive environment for ambitious and entrepreneurial young scientists. In the past 10 years, the area has seen the creation of 200 start-ups in fields ranging from the life sciences to fluid mechanics. Of those, 132 were supported by Grenoble Alps Incubation (GRAIN), which was founded in 1999 by a group of academic and government bodies. So far, it has created more than 800 salaried research and other posts by supporting start-ups.

INNOVATION STATION

Among the start-ups funded by GRAIN is Écrins Therapeutics, which was set up in July 2010 by Andrei Popov, a physician-turned-cancer-biologist. His company has six employees — four scientists and two technicians — and is developing one anticancer product. It hopes to broaden its portfolio, says Popov, who is trying to raise €3 million to expand the business. So far, his team has received two French national innovation grants, worth €220,000 each. His company is among several located at BIOPOLIS, a biotechnology hub run by Joseph Fourier University (UJF), one of the University of Grenoble's science and technology institutions.

After being selected for investment by ▶

GRAIN, Popov was given the opportunity to attend business seminars weekly for 18 months while his idea developed. GRAIN offers its start-ups a credit line (which Popov and his team did not fully use) of up to €45,000 to be paid off through investments or money earned from sales over three years, starting three years after the company has launched. The business incubator also provides a stipend of €1,150 per month for company creators who don't have a paid job. Popov still has access to a GRAIN adviser, who offers counselling on matters from team building to financing.

Popov's experience is part of a larger trend. Science and technology are "in the ecosystem here", says Cheikhou Dieye, managing director of Grenoble Angels, a network of private investors who support small companies in their initial stages. It is among the most successful of the country's 85 such groups. When Grenoble Angels first launched in 2005, the city's tradition of established technology companies led the group to focus on semiconductor, nanotechnology and Internet companies, but biotechnology is now a big part of the portfolio; last year, four of the companies in which it invested were biotech start-ups.

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Grenoble hosts international institutes such as the European Synchrotron Radiation Facility (centre).

ACADEMIC AMBITIONS

Academia is also benefiting from Grenoble's science expansion. The Grenoble-Alps University of Innovation (GUI+), a super-university that will unite many of Grenoble's existing research institutions, is part of the government's Excellence Initiative (Idex) to augment university campuses. Funded by a €400-million grant, it will open as early as 2016. To hire more faculty members and staff, Yannick Vallée, head of the project and a UJF chemist, is seeking an extra €1 billion in Idex stimulus grants; he will find out in January 2012 whether he will get the funds. He estimates that the stimulus grant would pay about €40 million a year, which would fund 20 research posts and an as-yet-undetermined number of grants to support PhD students. Vallée would like to recruit researchers specializing in technology, especially nanotechnology, electronics and computer science.

AEPI

"There is really a tradition of applied research and transfer to the real world here."
Véronique Pequignat

Meanwhile, GIANT was selected for government funding in 2008 as one of 12 international campuses of excellence. It is being developed on a 250-hectare site that houses — and will house — some of the city's large research projects. These include MINATEC, a micro- and nanotechnology innovation campus that employs 2,400 researchers and files 300 patents a year. GIANT as a whole employs 6,000 researchers at the moment, and aims to grow to 10,000 researchers, 10,000 students and 10,000 industrial jobs by 2015.

However, Grenoble scientists share some frustrations with other French researchers. "Finding a job is not easy. France creates a lot of postdoc researchers and there are relatively few permanent positions," says Popov. François Briatte, a health-policy PhD student and a member of the Young Researchers' Federation (CJC) in Paris, says that academia is "in a dire state of contractual anarchy that constrains and obscures the job prospects of young researchers in France". Briatte and the CJC assert that there are "serious, enduring shortages on the tenure-track academic market". The nation's academic institutions, says Briatte, don't have the budget from central government to employ enough researchers.

ROTATING POSITIONS

But the EMBL and the ILL offer a different employment model. The EMBL follows the same system as its locations across Europe: the Grenoble campus employs around 90 scientists, each on initial five-year contracts that are renewed for two years at a time to a maximum of nine years. The best 10% are offered permanent jobs when their contracts expire, says EMBL spokeswoman Sonia Furtado.

The ILL also has about 90 scientists on five-year contracts, but they are not offered the chance to renew. Instead, every 18 months, young scientists who are two or three years into their contracts compete for a small number of permanent positions at the centre. Over the past five years, between two and eight new scientists have been recruited each year. The arrangement, which is unique to the ILL's Grenoble location, required special permission from the French labour council, says Elizabeth Moulin, head of recruitment and integration at the institute. In France, institutions are usually allowed to give postdocs only three-year contracts or permanent positions, she says. "The new people bring fresh blood and new ideas," says Moulin. "In general, we tell our candidates that their chance to get a permanent position at the ILL is about one in three."

Employment caveats might not be the only damper on Grenoble's scientific ambitions — a national and local distaste for animal research could also have an impact. BIOPOLIS was built on the condition that it would not contain an animal house. "For oncology research we are talking about rats and mice, the workhorses of drug discovery," says Popov. "Yet we have no right even to bring a single living mouse inside — we have to use animal houses of the academic institutes nearby. That means that the technicians have to spend an hour a day walking between BIOPOLIS and the research." Concerns about the purported risks of nanotechnology have also prompted protests: in 2005, demonstrators occupied cranes involved in building MINATEC. Briatte says that industry in Grenoble should take these protests seriously and develop a social-mediation process.

Nevertheless, the area's entrepreneurial activity remains a big draw — as do its mountains. And rather than being a distraction, some argue that the natural beauty of the area encourages a culture of ambitious scientists. "People who want to scale mountains are often successful in other areas," says Imre Berger, a genome biologist at the EMBL. "These are the people you want in your lab. They play hard and they work hard," he says. "They are eager and able to scale a pinnacle." ■

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