

# GEORGIA ON THE MIND

Increasing investment in people is raising the Atlanta region's profile — and attracting a stream of internationally acclaimed researchers. **Paul Smaglik** reports.



A source of growth: the Centers for Disease Control and Prevention in Atlanta.

**C**NN and Coca-Cola are probably the best-known companies in Atlanta, Georgia. But investment in science by the state and federal governments and by research foundations is helping the city to gain scientific visibility. A programme to attract world-class scholars is at the heart of Georgia's rise in research rankings, international scientific recognition and job growth. It has brought in scientists who have been awarded individual grants, large federal projects, foundation funding and business involvement.

Georgia's research institutions began rising to prominence in 1990, when administrators from several of the state's universities banded together to form the Georgia Research Alliance (GRA). Since 1993, the group has invested more than \$350 million in an effort to recruit 'eminent scholars', by offering salary top-ups and infrastructure. Those staff, in turn, have brought in existing grants and are better positioned to compete for additional funds. So far, 54 such renowned researchers are estimated to have brought \$2 billion into Georgia's economy, says Mike Cassidy, president of the GRA.

The investment is paying dividends. Every year, consultancy firm Ernst & Young assesses US states in terms of the number of biotech companies that

they have within their borders. For years, Georgia has languished outside the top ten, but last year it reached the number seven slot. Perhaps more impressively, the state has seen the amount of funding it attracts from the National Institutes of Health (NIH) more than double from \$166 million in 1998 to \$375 million in 2005. The single biggest recipient of this money is Emory University, which rose from number 31 in 1996 to 19 in 2005 in the NIH rankings of single institutions receiving grants.

As well as improving the rankings of Georgia research institutions, the GRA programme has had a knock-on effect on recruitment. The quality of Emory's seven 'eminent scholars' attracts graduate students, postdocs and junior professors, says Mary Delong, the university's director of postdoc education, who herself was attracted to Emory a month ago after working at the NIH in Bethesda, Maryland. "It's like a lightning rod for attracting capable young people," she says.

## Attractive forces

One of Emory's high-profile names is Rafi Ahmed, director of the university's vaccine centre. Since he arrived from the University of California, Los Angeles, in 1995 to start the centre, he has recruited 22 faculty members and averaged \$17.5 million a year in NIH funding. He has managed to draw in the money by winning a series of large programme grants in vaccine development, including several NIH-supported HIV vaccine and immunology projects and, most recently, a \$4.5-million grant from the Bill & Melinda Gates Foundation for AIDS research. Ahmed says his interactive, collaborative approach helps in both grant-writing and research success. "We run a focused, coherent programme and we recruit coherently," he says.

The GRA recruited Julia Hilliard to Georgia State University in 1997. Apart from granting her eminent-scholar status, it built her a biosafety level-4 facility so that she could continue her work on pathogens that affect the central nervous system. "That was really appealing to me," says Hilliard, who supervises a team of 30. Georgia State

University and the GRA shared the \$1-million cost of building the facility, but Hilliard has received another \$1 million a year from the NIH to run it.

Some of the area's most ambitious efforts go beyond single institutions. Donald Edwards, whose research spans physics and biology, helped obtain one of the largest single grants from the National Science Foundation ever awarded — \$20 million to start the Center for Behavioral Neuroscience. The centre involves eight institutes, including Emory,

**"We are able to recruit high-quality talent as a result of the 'eminent scholar' programme."**

— David Hartnett

## SWIMMING WITH SHARKS

The Georgia Aquarium is Atlanta's newest tourist attraction. Housing more than 100,000 animals in 8 million gallons of fresh and salt water, the site has been visited by more than 4 million people since it opened in November 2005.

A slice of every visitor's admission fee goes towards research targeted at conservation efforts. So far, the initiative has raised \$500,000, says Bruce Carlson, vice-president for education, exhibits and conservation at the aquarium. "Our research is focused on our exhibits and animals we have here," he says. In particular, the aquarium's largest and most popular attractions are being studied: three whale sharks. "There's no textbook on the biology of whale sharks," Carlson notes.

The shark work extends beyond the aquarium's 50 or so professional staff — the centre is also funding

researchers at the Mote Marine Laboratory in Sarasota, Florida, to study the sharks' habitat to help the Mexican government understand the role of environment and tourism on the sharks' population in the Gulf of Mexico. "By understanding these animals, we're hoping to help the Mexican government better manage them," Carlson says. The aquarium also funds a postdoc in Taiwan, who tags and monitors the sharks.

Closer to home, the aquarium offers veterinary students at the University of Georgia in Athens a great training opportunity. Student interns can get experience of treating animals at the aquarium. "There aren't a lot of opportunities for students in veterinary medicine to get hands-on aquatic medicine experience," says Carlson. As visitor numbers — and the revenue from them — keep growing, the

**The Georgia Aquarium is funding conservation research on the whale shark (inset).**



aquarium intends to expand its research efforts and has already begun sponsoring a coral-reef

research conservation effort for coral reefs of the Solomon Islands in the South Pacific. **P.S.**

Georgia State University and the Georgia Institute of Technology. Edwards is looking for multidisciplinary postdocs to help staff the facility.

In several cases, winning these large grants built upon earlier investments by universities and the GRA. That is the case for a nanomedicine centre set up by the Georgia Institute of Technology, Emory University and the Medical College of Georgia. The centre will receive between \$6 million and \$10 million from the NIH over the next five years, and almost \$3 million from the GRA.

### Strong partners

"It's a very successful collaboration between a medical school and engineering school using the strength of both, as well as a collaboration by a public school, a private school and a medical school," says Gary Schuster, provost at the Georgia Institute of Technology. Schuster says that the GRA has been successful at matching up each institute's strengths with others' needs — for example, having engineers

at 'Georgia Tech' develop instrumentation for experiments at Emory or the Medical College of Georgia.

The GRA's eminent-scholar programme has also had an impact on Georgia-based businesses. David Hartnett, vice-president of technology industry expansion for the Metro Atlanta Chamber, and former chief executive of four area start-ups, sees the programme as a way to draw talent into the region's high-tech businesses. "We are able to recruit high-quality talent as a result of the programme," he says. BresaGen, an Australian company, chose Athens, Georgia, as its US headquarters in part to continue its work with eminent scholars Steven Stice and Clifton Baile at the University of Georgia. Several eminent scholars are also involved in starting and managing businesses. Nikil Jayant, for example, co-founded EGT, an Atlanta-based telecommunications software firm.

The biggest infrastructure development in Atlanta is at the Centers for Disease Control and Prevention (CDC). Since the terror attacks of 11 September 2001, the US government has pumped more than \$1.5 billion into the centre to make it better prepared to handle bioterror threats. The Emerging Infectious Diseases Laboratory triples the CDC's capacity to research pathogens that require the highest levels of safety precautions, such as Ebola, viral haemorrhagic fevers, monkeypox and avian influenza. It includes new biosafety level-3 and level-4 facilities, which have been constructed but not yet commissioned.

But the new facilities don't necessarily mean a plethora of new positions, says CDC director Julie Louise Gerberding. The new facilities replace outdated ones, she says. Still, Gerberding says that the CDC's role in infectious disease ensures a steady stream of fellows and visiting scientists. In US epidemiology, "all roads lead to the CDC", she says. And with more programmes to attract world-class scientists to Georgia, many more roads are leading to Atlanta.

**Paul Smaglik is editor of Naturejobs.**



Atlanta is seeing a rise in biosafety facilities and related work.

G. KNOBLOCH/CDC

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