Taking Care of Bio-business

Despite metropolitan areas' fierce competition for attracting bioscience companies, Atlanta is experiencing growth in the industry.

BY T.J. BECKER

@ Georgia Tech and Emory University, supported by the Georgia Research Alliance, are helping drive the growth of life sciences companies in the metropolitan Atlanta area.

Atlanta may not be a hotbed for life-sciences companies on the scale of San Diego or Boston, but things are heating up here. Among recent milestones:

- CardioMEMS, a company formed from Georgia Institute of Technology intellectual property, won a thumbs up from the Food and Drug Administration (FDA) to market its first commercial product, the EndoSure™ sensor, an implantable device that monitors blood pressure in aneurysm patients.
- Emory University received $525 million for selling its royalty interest in an AIDS drug developed by three Emory research scientists.
- AtheroGenics signed a licensing agreement with pharmaceutical giant AstraZeneca for AGI-1067, a drug that AtheroGenics is developing to treat atherosclerosis. Now in its third round of clinical testing, the drug has potential for blockbuster status (more than $1 billion in annual sales) if it wins FDA approval.
- Ernst & Young's 2006 Global Biotechnology Report ranked Georgia seventh among U.S. states for its number of bioscience companies.

"There has always been good science and engineering in Atlanta, but what has changed is the commercial mindset," says Garheng Kong, a partner at Intersouth Partners, a venture capital company in Durham, N.C. "Today, there are more entrepreneurs working with scientists — and more scientists who are thinking entrepreneurially."

BELOW: Celtaxsys is developing drug compounds for treating cancer, and inflammatory and autoimmune diseases. Brooke Goodhew works in the company's lab in the ATDC Biosciences Center at Georgia Tech.

PHOTO BY GARY MEEK

That's music to Susan Shows' ears. "Our universities are very skilled at producing intellectual property," says Shows, vice president of the Georgia Research Alliance (GRA). "What we've been trying to do in the past 10 years is convert those discoveries into viable companies."

Competition for bioscience business is fierce. Indeed, according to a 2004 report from the Biotechnology Industry Organization (BIO), 40 states have specifically targeted the biosciences in their economic-development efforts, hoping to bring more high-paying jobs to their communities.

Georgia has been steadily moving up in Ernst & Young's ratings for its number of bioscience companies: Now seventh among U.S. states, Georgia was No. 8 in 2005 and No. 11 in 2003. Yet when counting its number of bioscience jobs, Georgia ranks lower as smaller entrepreneurial firms are driving bioscience growth instead of the relocation of large pharma companies. That's not a drawback — in fact, entrepreneurial growth has many pluses — but it does take longer to bolster jobs and requires a different approach.

The right environment

The Advanced Technology Development Center (ATDC), Georgia Tech's incubator program, has been assisting technology entrepreneurs since its inception in 1980. Yet in 2002, ATDC opened a special center for life-science startups.

"Bioscience companies face unique challenges, with real estate being one of them," observes Lee Herron, ATDC's general manager of biosciences. "Unlike a software startup, which can practically operate out of a closet, bioscience companies need special facilities."

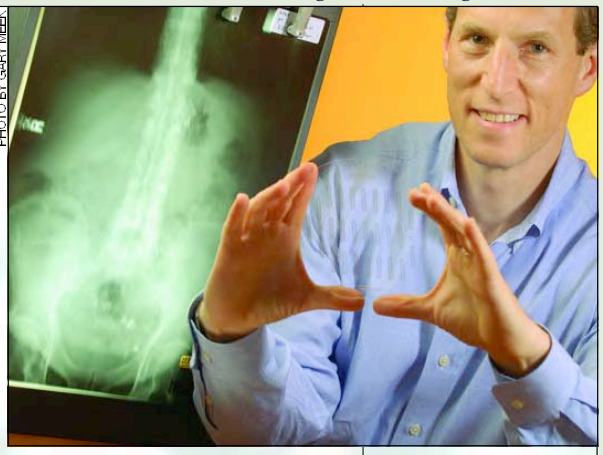
Located within Georgia Tech's Ford Environmental Science & Technology Building, the ATDC Biosciences Center has wet labs equipped with special ventilation and purified water systems. Member companies also have access to clean rooms for micromachining.

Those clean rooms were instrumental to CardioMEMS' progress, says David Stern, senior vice president of research and development at the medical device company, which graduated from ATDC last year. "If we had to build our own clean room, it would have cost millions of dollars and held us up for months," Stern says.

ATDC played a key role in Celtaxsys' decision to locate in Atlanta, says Bill Reddick, CEO of the pharma startup, which is developing new drug compounds for cancer, inflammatory and autoimmune diseases.

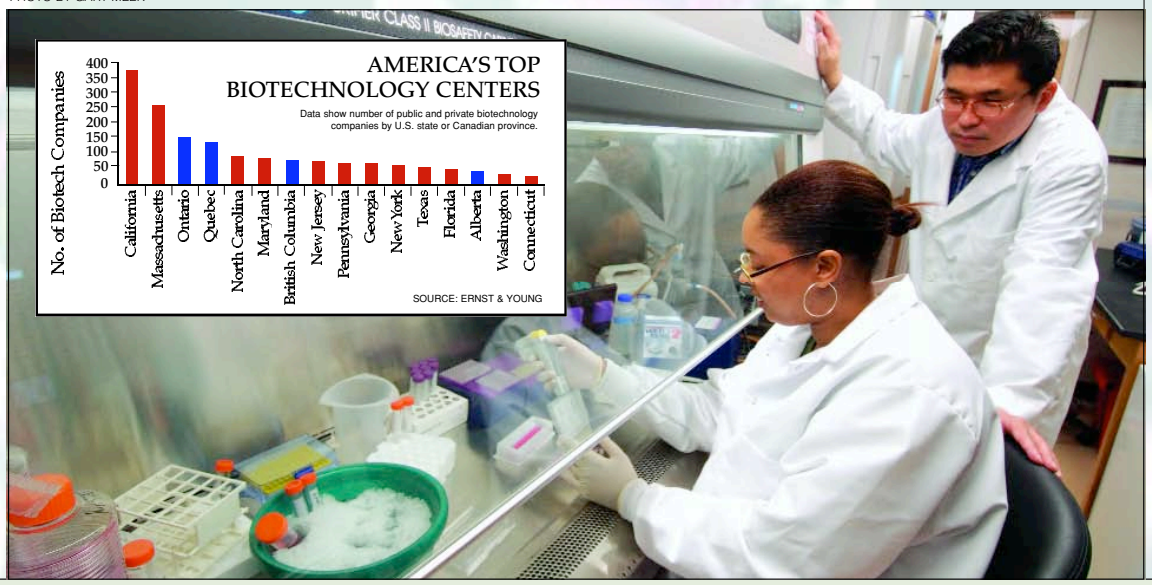
"The ability for startups to raise money is critical," Reddick explains. "When we first talked to investors, they asked, 'Why Atlanta?' But once we showed them our lab space at ATDC and the caliber of companies around us, there were no more questions. They saw the environment was one that could nurture successful bioscience companies… that we weren't off on an island." (Celtaxsys closed on $5.7 million in initial funding in December 2005).

PHOTO BY GARY MEEK



TOP: David Stern is senior vice president of research and development at CardioMEMS. The company, formed from Georgia Tech intellectual property, has developed an implantable device that monitors blood pressure in aneurysm patients.

PHOTO BY GARY MEEK



LEFT: Celtaxsys senior scientist Hyun Kang, right, and lab technician Jimmaline Hardy work in wet labs equipped with special ventilation and purified water systems.

INSET: Ernst & Young's 2006 Global Biotechnology Report ranked Georgia seventh among U.S. states for its number of bioscience companies.

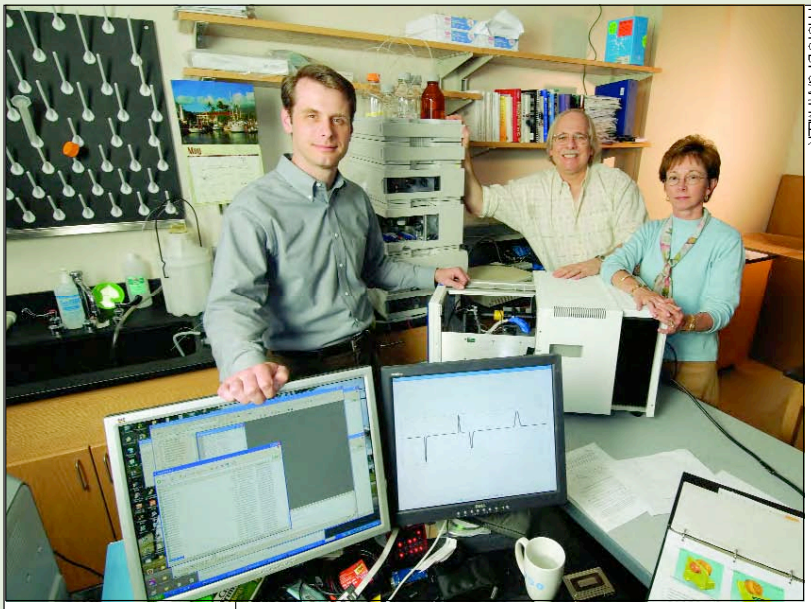


PHOTO BY GARY MEEK

ABOVE: Susan Shows, right, vice president of the Georgia Research Alliance (GRA), is helping startups such as Stheno convert research discoveries into viable companies. Stheno is headed by CEO Bill Edens, left, and is developing and marketing technology developed by GRA Eminent Scholar and Georgia Tech Physics Professor Rick Trebino, center, and Georgia Tech Chemistry Professor Andreas Bommarius, not shown.

In partnership with Emory University, Georgia Tech also operates a smaller incubator for bioscience entrepreneurs on Emory's Briarcliff campus. Like the ATDC Biosciences Center, EmTech Bio lowers barriers for new companies by providing a quick-start environment with appropriate space, equipment and resources.

Complementing the work of these incubators is a new initiative — Technology Enterprise Park. Located just south of Georgia Tech's Midtown campus, this new research park will comprise 600,000 square feet of space on 11 acres. Buildings will be designed specifically for bioscience and technology companies, and flexible space will allow tenants to expand as needed.

The park is being developed by Georgia Advanced Technology Ventures (GATV), a tax-exempt affiliate of Georgia Tech that promotes growth of bioscience and technology companies. Construction began in January, and officials expect to have the park completed by summer 2007.

Altea Therapeutics Corp., which is developing transdermal patches for drug delivery, has signed on as the anchor tenant.

"We're trying to create facilities for the full continuum," Herron says. "Technology Enterprise Park will provide important post-incubation space. Once companies are ready to move out of ATDC or EmTech, they will have somewhere to go."

Being part of a broader biotech community is especially helpful for startups, says Russell Medford, CEO of AtheroGenics and chair of the Georgia Biomedical Partnership. "An early-stage company is a new type of entity, and it's hard to have a self-identity when you only have 10 or 15 people on board," he explains. "It's nice to be in a supportive environment with other companies that have common needs and goals."

In addition to early-stage companies, Technology Enterprise Park also expects to attract established technology and bioscience companies, including multinational firms that are looking to set up shop in Atlanta. "The proximity to Georgia Tech researchers and facilities will be a big plus for more mature companies," notes Scott Levitan, vice president of real estate at GATV.

The mix of early-stage and established companies at TEP will create opportunities for each other, Levitan says. "Smaller bioscience companies often prefer to license their technology rather than setting up marketing or manufacturing operations," he adds. "And vice versa, large pharma firms may want to acquire IP as opposed to developing it in-house."

The right science

Another component of a thriving bioscience community, according to BIO, is the involvement of research institutions.

ATTRACTING TALENT

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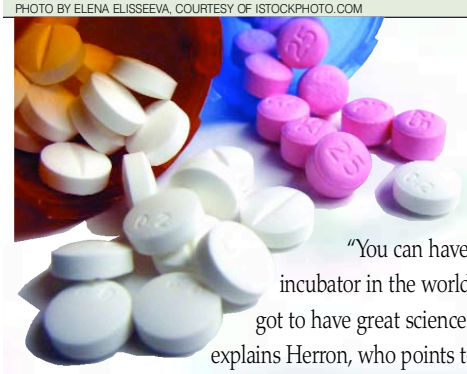
In addition to investors, bioscience companies need a skilled labor force to flourish. When Celtaxsys, a biotech startup, was looking for a home base in 2004, Atlanta was a draw because three of its four founders were from the area. "At the same time, we were concerned about an adequate talent supply," says Bill Reddick, Celtaxsys' CEO, explaining that the company needed experienced molecular and cell biologists to implement its research and development plan. "Could we get the right people? That question was answered when we posted our first job listing."

The company received nearly 150 reponses, with about two-thirds of those applicants possessing the skills and background Celtaxsys was seeking. About half of respondents hailed from the Atlanta region, and half were from out-of-state, Reddick recalls. "So being in Atlanta wasn't a hindrance, either for finding talent or attracting it," he says.

PHOTO BY ELENA ELISSEEVA, COURTESY OF ISTOCKPHOTO.COM



FAR LEFT: Drugs like those being developed by AtheroGenics have the poten - tial to create more than $1 billion in annual sales, after FDA approval.

"You can have the greatest incubator in the world, but you've got to have great science behind it," explains Herron, who points to GRA's Eminent Scholar program as a lynchpin for innovation.

GRA's Eminent Scholars program recruits world-class, entrepreneurially minded scientists to six Georgia educational institutions — Clark Atlanta University, Emory University, Georgia Tech, Georgia State University, the Medical College of Georgia and the University of Georgia. Of the 52 scholars now in residence, 34 work in bioscience disciplines.

"We have existing talent here in Georgia, but not enough," says GRA's Shows. "Recruiting these scholars has all kinds of ripple effects, such as federal grants and industry collaborations — it creates an ecosystem that leads to economic gains."

Complementing its Eminent Scholar program is GRA's VentureLab, which helps commercialize innovations being developed at research universities. Piloted at Georgia Tech in 2001, five of Georgia's research universities now have VentureLab programs up and running.

VentureLab's staff scouts the campus for promising technologies and helps faculty and students understand what's required to form a company — and determine if a market need exists. The program also provides grants to help fledgling companies validate their technology and conduct proof-of concept studies.

"Orthonics wouldn't exist if weren't for VentureLab, at least not in its present form," says CEO Steve Kennedy. Orthonics, which is developing novel biomaterials for orthopedic applications, was co-founded by Barbara Boyan, a GRA Eminent Scholar and Georgia Tech biomedical engineering professor.

"Bioscience companies require a lot of time and a lot of money to get to market," says Kennedy, explaining that two VentureLab grants helped Orthonics prove its concept and paved the way to funding from a prominent New York venture-capital company. Orthonics is now a member of ATDC.

Critical collaborations

Atlanta's bioscience community has also benefited from Georgia Tech and Emory's joint Wallace H. Coulter Department of Biomedical Engineering, which blends the expertise of medical researchers at Emory with Georgia Tech's engineering panache. *U.S. News & World Report* ranked the program No. 2 among 2005 biomedical engineering graduate programs.

Among those who praise the collaboration is Bruce Robertson, a managing director at H.I.G. Ventures, an

PHOTO BY GARY MEEK

LEFT: Lee Herron is the general manager of biosciences at the Georgia Tech-based Advanced Technology Development Center.

MO' MONEY

Atlanta may not attract as much venture capital as bioscience meccas like Boston and San Diego, but investor activity is increasing. "We're just at an earlier stage," says Lee Herron, general manager of biosciences at Georgia Tech's Advanced Technology Development Center.

"Venture capital follows; it doesn't lead. We'll get more VC opportunities as we create more companies."

PHOTO BY GARY MEEK

ABOVE: Bill Reddick is CEO of the pharma start-up Celtaxsys, which is housed in the ATDC Biosciences Center at Georgia Tech.

> "We've certainly progressed beyond the point of explaining, 'Why Atlanta?'"
>
> **Bill Reddick,** CEO of Celtaxsys

Atlanta venture-capital firm. "A top medical school and a top engineering school working together is a great match," says Robertson, referring to potential innovations that can result from multidisciplinary research. "Too often you see startups that are one or the other — and they don't understand each other's worlds."

At the time it was launched, the joint program was the first of its kind between a public and private institution. But other universities are now following suit, reports Larry McIntire, chair of the joint biomedical engineering department.

Admitting its first students in 2000, the department now has 700 undergraduates and 200 Ph.D. students. "That's amazing growth by any standards," McIntire says. "We're turning out some of the brightest people in the country in the field of biomedical engineering — a talent pool that didn't exist five years ago."

Illustrating the ripple effect that GRA's Shows mentioned, the joint department has also sparked two major funding success stories. A cancer nanocardiology research center led by Professor Gang Bao won $11.5 million from the National Institutes of Health (NIH), and a cancer nanotechnology center led by Professor Shuming Nie is scheduled to receive $20 million in NIH funding over a five-year period. What's more, the NIH has designated both research initiatives as national "centers of excellence."

PHOTO BY GARY MEEK

ABOVE: Startup company Orthonics is developing novel biomaterials for orthopedic applications. It was co-founded by Barbara Boyan, right, a Georgia Research Alliance Eminent Scholar and Georgia Tech biomedical engineering professor, and CEO Steve Kennedy, left.

Gaining critical mass

With a stronger bioscience infrastructure in place, Atlanta's life-science community is poised for continued progress.

What would accelerate growth? More funding would certainly help, experts say, although strides are being made. Even though Atlanta may not have as large a concentration of investors as other parts of the country, more venture-capital dollars are starting to flow here. In fact, three out of the top four venture-capital deals in Georgia last year involved bioscience companies, notes Charles Craig, president of the Georgia Biomedical Partnership.

"Atlanta is no longer off the beaten path," agrees Kong of Intersouth. "Investors are willing to fly to Atlanta and consider deals."

Intersouth made its first investment in an Atlanta bioscience company two years ago when it led a $26.75 million round of funding for Alimera Sciences, a pharmaceutical startup that focuses on eye-care products. The deal marked one of the biggest rounds of initial funding in the Southeast during the past decade.

Entrepreneurs are buoyed to see more investor interest, but they would like to see more Georgia-based investors to

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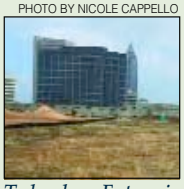
CHANGE OF VENUE

Moving can be a major pain, but Altea Therapeutics Corp. is happy to embrace the logistical headache. Having outgrown its present facility in Tucker, Ga., Altea spent more than two years hunting for new headquarters. Bioscience companies have special mechanical and electrical needs, notes Joe Medlin, vice president of finance, information technology and administration for Altea, which is developing a new breed of transdermal patch. "You can't go into an existing commercial property and retrofit it very easily," he adds.

Altea's search for space ended with Technology Enterprise Park (TEP). When the new research park opens its first building in July 2007, Altea will move into 45,000 square feet on two floors. With wet labs and HVAC systems designed specifically for bioscience companies, TEP will be a pleasant change of venue for Altea.

PHOTO BY NICOLE CAPPELLO



Technology Enterprise Park will open in July 2007.

prevent the kind of uprooting that can occur with out-of-state money. For example, when Richard Otto launched Corautus, an ATDC graduate company that is developing new gene therapies for cardiovascular disease, one of his early funding opportunities was with a California-based venture-capital firm. Yet the investors wanted Otto to move the company to Palo Alto, so he took a pass. "When startups relocate, the state loses out on a growing workforce," Otto says.

A strong management team is a cornerstone of any startup's success. In the past, the fact that Atlanta was not a biotech hub meant local managers with life-science expertise were in short supply, and it was difficult to import CEOs. Out-of-towners, quite naturally, want back-up options if something goes wrong.

Bill Johnston, CEO of Inhibitex, admits that he was a bit gun-shy about moving to Atlanta in 1998 because of the lack of large biotech firms here then. Recruited from Baxter Healthcare Corp. in Chicago, Johnston initially joined Inhibitex on a part-time basis. (Inhibitex relocated from Texas to Atlanta in early 1998 after it received funding from Alliance Technology Ventures.)

"Yet a lot has changed since 1998 … slow, but meaningful changes," Johnston says. He points to an increase in publicly traded companies, private companies that are attracting significant venture-capital funding and state support that has "gone from verbal to real dollars."

As a result, Johnston believes it's getting easier to recruit management talent. "It's a lot of little things, but when you stack them up, it points to a pattern of real growth," he says.

Underscoring that growth, BIO has selected Atlanta to host its 2009 international convention — an industry event expected to attract more than 20,000 life-science professionals from around the globe.

Hosting the convention is a major coup. "The Southeast and Georgia specifically are now viewed as real players in the industry," Johnston says.

Reddick at Celtaxsys agrees: "We've certainly progressed beyond the point of explaining 'Why Atlanta?' "

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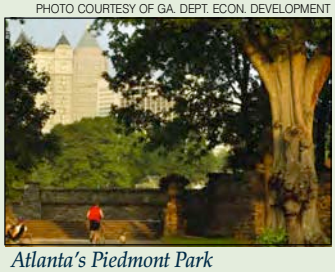
ILLUSTRATION COURTESY OF SCOTT LEVITAN

RIGHT: Technology Enterprise Park will be located south of Georgia Tech's Midtown campus. The new research park will comprise 600,000 square feet of space on 11 acres.

BETTER LIFESTYLE, MORE SUPPORT

Biotech hotspots like Boston may have a greater concentration of investors and critical mass, but Atlanta has plenty to offer biotech businesses, says Rafael Andino, founder of Biofisica, a medical device company that Andino launched in 2000. "The standard of living is high here, while the cost of living is relatively low compared to other cities — something I don't see Atlanta playing off as much as it could," Andino says. The weather is also decidedly better than for many other bioscience clusters, he adds.

PHOTO COURTESY OF GA. DEPT. ECON. DEVELOPMENT



Atlanta's Piedmont Park

From an infrastructure perspective, being a member of ATDC's Biosciences Center is another plus of being in Atlanta. "Besides the exposure to funding sources and service providers, it's great to be in a facility where almost everyone is in the same situation — growing their companies from scratch," Andino explains. "There's a tremendous level of energy and excitement. If I could clone myself, I would love to work on two or three other projects that are going on here."