so you want to cut costs. There are the obvious techniques everyone’s considered—outsourcing, downsizing, and other painful steps. These can save a lot of money, but at this point, many companies can’t trim any more staff without cutting back on operations. Still, a few are finding additional creative ways to cut spending here and there, sometimes adding up to significant savings.

*The Scientist* explores eight ways in which start-ups and established biotechs can save up to millions of dollars per year.

1. **Do the cleaning yourself**

   Johnny Stine runs his biotechnology lab at his Seattle start-up North Coast Biologics much like he would run his household. "Instead of paying a sanitation bill, I mop my own floors, take out my own trash and drive it to the dump," says Stine. "I try not to pay for services that I can do on my own." As a result, Stine spends next to nothing for keeping his lab tidy. Biotech companies, on the other hand, can dole out about $11,000 per year for cleaning services.

   **Savings:** $1,800/year (depending on the service and provider)

2. **Buy equipment off eBay**

   Stine, whose monoclonal antibody lab is currently a one-man show, doesn’t have the budget to spend $100,000 to buy from big suppliers; he looks to cheaper options like eBay, Craigslist, and local auctions to find low-cost machine parts or used tools—even for expensive equipment, such as flow hoods, CO₂ incubators, robotics, centrifuges, PCR machines, freezers, and chemicals. "I have no problem finding equipment," says Stine. "Old lab tools are sold on eBay from companies that have been cut down or that have gone out of business." Recently, he spent $6,000 for two incubators on eBay, originally owned by biotech companies in Michigan and Washington that closed down. He saved $9,000. Stine also bought a cell culture hood for $2,000 from a local auction, shaving $7,000 off the normal price. Stine says he uses contacts he’s accumulated over the years to find a good deal. "I’ve gotten to know people and they will email or call me asking ‘xyz is getting rid of equipment, are you interested?’"

   **Savings:** $50,000–$100,000 (depending on quantity/types of items purchased)

3. **Store samples at room temperature**

   In late 2009, Life Technologies decided that storing DNA samples in a -80 degree Celsius freezer was an inefficient use of its energy and money. The biotech found a company in the San Diego area called GenVault that had developed a novel technology to store samples at ambient temperatures, and it made the switch. Using GenVault’s dry storage method, the same number of samples that costs $15,000 per year to store in a freezer can be stored for only $1,200, estimates Rene Nunez, director of marketing at GenVault Corporation. Plus, Life Technologies will save $1,500 annually on its electric bill by not using a freezer, Nunez points out, which is also more environmentally friendly. "Our technology can be used to complement existing storage methods or to eliminate the need for cryostorage of DNA and RNA altogether.”

   **Savings:** $15,000
4. Renegotiate shipping deals
Christopher Steer, chief strategy officer at PA & Associates, Inc., a Maryland-based management consulting company that specializes in parcel negotiation, works as an agent on behalf of a range of companies to negotiate better packaging and shipping agreements with UPS and FedEx. “We embed ourselves in the day-to-day operations of a company and consult with employees about their practices in order to find all possible ways to save,” says Steer. PA & Associates tries to optimize the little things, like the size of the box in which an item is shipped or how the item is protected during shipping. Even the timing of a pick-up or the way a company organizes its warehouse can reduce costs, says Steer. Using PA & Associates, companies can save up to 42 percent on local and international packaging and shipping, which can amount to hundreds of thousands of dollars or more. “We also have a unique way of billing,” says Steer. “We are only paid if our clients save.”
**Savings:** $80,000–$1.25 million

5. Switch to a cell phone
“The easiest way you can save is to use a cell phone,” says Stine. “You can save an enormous amount by not having to install data ports and phone lines.” According to Yankee Group, a technology research and consulting firm, businesses with 2 to 99 employees spend an average of $220 per month per employee for their phone service. Unlimited national cell phone plans, on the other hand, cost anywhere from $59.99 to $99.99 per month. Although this approach may not be realistic for larger biotechs, a small company with a few dozen employees can save approximately $2,000 per year per person, excluding the initial cost of installing a phone line.
**Savings:** $1,440–$1,920 per employee

6. Use a slow cooker
As a molecular biology graduate student at Harvard University in the 1980s, Andrew Papp was frustrated by overpriced and often poorly designed research equipment. He began thinking outside the box about lab tools. “A water bath might cost $750, but it is not that different from a [slow cooker], which you can buy for $70,” says Papp, and sometimes comes with a thermometer probe. Why not use that instead?

Papp turned his instinct for cobbling together makeshift equipment to save money into a company, Tritech Research, which invents, manufactures, and sells more than 700 discounted pieces of lab equipment to biotech companies, including Genentech, Merck & Co., Inc., and GlaxoSmithKline. One of Papp’s creations is a manual microinjection controller, a machine used to control the pressure during in vitro fertilization and transgenics experiments. A digital microinjection controller typically costs anywhere from $4,405 to $8,600. Papp, on the other hand, does not purchase the specialty, custom-made parts other companies typically use. Instead, he finds similar parts that are manufactured in bulk and adapts them for his machines. He charges as little as $595 for the most modest manual version and up to $2,995 for a fancier digital one. He keeps costs so low by spending next to nothing on marketing and advertising, instead relying on word of mouth to get new clients.
**Savings:** Microinjection controller: $1,405–$9,175; Petri dishes: $94,480 (no discount)–$33,790 (best discount); Total: $100,000+ (depending on type and quantity of equipment purchased)

7. Move into an incubator
If scientists want to launch their own biotech company from scratch, but don’t have $200,000 to do it, they may come to Michael Dailey, the executive director of one of Maryland’s most successful business incubators. Dailey’s government-funded incubator, Frederick Innovative Technology Center, can provide 12 to 15 emerging bioscience companies with wet lab and office space as well as large ticket lab tools, like an autoclave, centrifuge, and a ~80 degree Celsius freezer, says Dailey. Incubator users only pay to lease the facility, which runs about 20 to 40 percent below the market rate for typical lab spaces. “Included in that rate is all of the equipment the company may need,” says Dailey. “And on top of that, we provide further assistance with funding, mentoring, and marketing to potential investors.”

Maryland-based Martek Biosciences, which develops algae-based nutritional products, is one example of an incubator success story. Martek, which started at an incubator in Maryland in the late 1980s, now earns approximately $340 million in annual sales and has grown from a handful of scientists to 525 employees, with facilities in Maryland, Colorado, Kentucky and
South Carolina. Martek is not alone in its success as an incubator graduate. According to one survey conducted by State of the Business Incubation in Wisconsin in 2007, about 80 percent of businesses that began in an incubator are still in business, while 80 percent of small businesses overall typically fail within the first 5 years.

**Savings:** $150,000–$200,000 per year

8. Relocate to Sioux Falls, SD

In a 2009 report, the New Jersey–based location consultant firm Boyd Company calculated the costs of operating a bioscience R&D facility in 35 US and Canadian locations, assuming a 5,750-square-meter R&D center with 150 workers as well as funds for construction, shipping, and travel. The company found that Sioux Falls ranked at the bottom of the list, with operating costs amounting to $12.5 million per year, relative to the #1 Nassau County, NY, which cost $18.8 million.

Apart from paying less rent in Sioux Falls, companies will spend markedly less on electricity. In 2002, Hematech, a private company that develops antibodies, moved from Stamford, Conn., to Sioux Falls, South Dakota, and now pays approximately 4 cents per kilowatt, whereas companies in California or Pennsylvania may pay 12 or 16 cents per kilowatt for as much as 150,000 kW per month (amounting to $216,000 per year). In addition, the cost of living is 20 to 30 percent lower in Sioux Falls, so Hematech can expect to dole out 10 percent less in wages compared to companies in big business hubs, says John Boyd, president of Boyd Company.

"With the success of companies like Hematech, there is now a growing trend towards building and moving small companies to lower-cost locations," says Boyd. In 2005, a start-up called Envoy Therapeutics, which develops drugs for neurological disorders, decided to open its doors in Palm Beach, Fla., and just several months ago, the colorectal screening company Exact Sciences left Massachusetts for Madison, Wis. "If companies plan for the long-term, they can save $100 million in just over 15 years by moving to a lower-cost city," says Boyd.

**Savings:** $2–$6 million per year

---

**BREAKTHROUGH IN RNA ISOLATION**

The single step method without phase separation

**RNAzol® RT**

isolates total RNA, with mRNA and small RNA (200 - 10 bases) in separate fractions.

- Higher RNA yield and quality than with previous single-step reagents.
- No chloroform-induced phase separation. Just add water.
- RNA is ready for RT-PCR, microarrays, poly A⁺ selection, northern blotting and RNase protection.
- No DNase treatment necessary.
- No need for a refrigerated centrifuge. All steps performed at room temperature.

**MOLECULAR RESEARCH CENTER, INC.**

5645 Montgomery Road, Cincinnati, Ohio 45212

Phone: (888) 841-0500

*Piotr Chomczynski, patent pending. RNAzol® is a trademark of Molecular Research Center, Inc.*