

Who's Who in Tech & Biotech

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Biomimicry: Local companies borrow from nature to create better design

By REBECCA GO
The Daily Transcript

When people think of art, they think of the Louvre. When people think of nature-inspired designs and solutions, they think of San Diego.

At least, that's what local enthusiasts hope to achieve in the next several years.

Turning to nature as muse is known as biomimicry, or biomimetics. Velcro, inspired by burrs sticking to fur and clothing, is one of the oldest and most common examples.

Other examples include buildings structured like termite mounds to eliminate the need for air conditioning, and cars shaped like boxfish for better aerodynamics.

In other words, Mother Nature did it first, and what's more, she did it better.

The idea of emulating the systems, processes or elements of wildlife is starting to gain traction as an optimal way to design more efficient and/or environmentally friendly products.

San Diego could lead the way in biomimetic research and solutions, some say. The strong presence of both biotechnology and research institutions gives the region a head start in terms of human capital.

The local biodiversity and the broad industry base also positions San Diego as an ideal biomimicry center, said Jay Vavre, marine biologist and biotechnology teacher at High Tech High.

"We have the right collection of resources," he said in a recent interview.

Jacques Chirazi, program manager for the city of San Diego's Cleantech Initiative, agreed.

"The city wants to be at the forefront" of biomimicry, he said. "No other cities can do this right now because they don't have these unique assets."

The San Diego Zoo is one of those principal assets. The park and its

CRES (Conservation and Research for Endangered Species) center are spearheading local efforts to raise awareness about the benefits of biomimicry.

"We're the stewards of one of the world's largest collection of plants and animals," said Paula Brock, the zoo's chief financial officer. "What an incredibly different way of looking at our collection — not a passive observation but an active observation into the uniqueness of the creatures and plants."

The goal is to eventually establish San Diego as a "hub for biomimicry" in the next five years — a place companies will turn toward for nature-inspired solutions and products.

Brock said the zoo is already working with a few Fortune 500 companies outside of San Diego on such projects, but declined to disclose the names of the companies.

At the moment, however, the zoo and its partners — including the city of San Diego and the Montana-based

Biomimicry Guild and Institute — are focusing on education efforts first, knowing that reaching ambitious goals requires baby steps.

"It's not something that's going to pay off right away," Chirazi said. "Are we going to create biomimicry jobs tomorrow? No, but we're putting on a forward-looking lens."

The zoo currently provides three-hour biomimicry tours for both students and corporations, during which staff members highlight certain wildlife and explain potential applications.

The zoo also plans to work with local schools to create curricula and is already partnering with High Tech High students to develop biomimetic solutions to clean the San Diego Bay.

Plans are in the works for a regional biomimicry symposium in the fall, Chirazi said. While the initial focus will be on academia, commercialization will be a hot topic in the years to

See Biomimicry on 8



Qualcomm's mirasol display, which mimics the way light reflects off the scales of butterfly wings, can be viewed in direct sunlight as well as very dark environments.

In tough economy, San Diego biotechs can partner their way forward

By CAROLA SCHROPP
EBD Group

The collapse of traditional financing markets has biotech executives in San Diego and the world over exploring alliances and creative collaborations as an alternative strategy to advance their products, or to simply keep the company alive until investor confidence in biotech returns.

For this reason, the trend toward increased partnering activities among biotech executives is experiencing a dramatic spike in intensity. The frenzied pace of partnering among biotechnology firms shouldn't really be a surprise. Dependent on continual flows of risk capital to feed the development of their discoveries, biotechs are highly exposed to the perils of faltering financial markets. In the wake of the current financial crisis that has severely hampered most risk capital flows, San Diego firms, like their counterparts worldwide, need another way to fund the discovery process as well as feed into big pharma's development pipeline.

Fortunately, an alternative development path in the form of partnering exists. Partnering is the process of matchmaking between biotechs and pharmaceutical firms, where a biotech company provides the innovation and

a pharmaceutical firm provides the funding and infrastructure to ultimately get a drug to market. This partnering dynamic has become so important to the industry that analysts at San Francisco-based **Leerink Swann** have coined the term "partnerships and acquisitions" (modeled on the more familiar "mergers and acquisitions") in recognition of the power of partnering to improve a company's performance.

As one of the largest life science



Schropp

See Partner on 8

clusters in the United States, Southern California plays a large role in the remaking of our country's 21st century innovation economy. "Keeping the biotech innovation engine moving is essential for San Diego, the USA and patients around the world who will ultimately benefit from drugs discovered and developed in our region," said Joe Panetta, president and CEO of trade association Biocom.

"It is vital for local biotech firms to actively develop partnering strategies in the absence of readily available risk capital. And their approach must be global in scope and seek partners beyond both regional and national borders," he said.

The biotech industry is no longer the exclusive domain of a few select regions such as San Diego, San Francisco or Boston. Following the development path taken by most other large industries, biotech is globalizing rapidly, aided by the backing of government sponsors in many parts of the world. There is ample opportunity to secure business and financial support, but it may well lie outside our borders, and partnering is one way to get together with those who have the money.

Future of life sciences: Transformation amid rising risk

By JAMES BOVA
Deloitte Consulting LLP

Charles Darwin once said, "It is not necessarily the strongest that survive or the most intelligent, but the one most responsive to change." The same can be said of the life sciences industry. For nearly a decade, life sciences companies have struggled against low productivity in research and development (R&D), loss of patent protection, competition from generics, skyrocketing costs, an ongoing talent shortage and diminishing corporate reputations.

In 2008, the industry saw radical cutbacks to shore up profit margins — a short-term strategy at best. To survive in the long term, companies must go beyond depending on future returns from new products; they must tackle current problems and address risk in a new way. Similar to strategies adopted by other commodity industries, life sciences companies are adjusting their business models to take a more "intelligent" approach to risk.

Recently, we have seen a resurgence of big pharma mega-mergers including the proposed **Pfizer** (NYSE: PFE) and **Wyeth** (NYSE: WYE), **Merck** (NYSE: MRK) and **Schering-Plough** (NYSE: SGP), and **Roche** and **Genentech** (NYSE: DNA) mergers. These mergers may help big pharma manage the fallout from blockbuster drugs going off patent and provide some needed cost reductions; however, it may not correct the fundamental issue of pipelines drying up and the need to transform business models.

In a new survey by Deloitte Touche Tohmatsu (DTT) and The Economist Intelligence Unit, 76 percent of life sciences senior executives say their com-

panies need to undergo major transformations to address future risk. They have identified the following areas where they believe risk will rise most sharply in the next 10 years.

Pricing, sales and marketing

As the economy drives customers to cut spending, companies are under increased pressure to consider new pricing, sales and marketing models. U.S. health care payers are starting to embrace European-style reimbursement systems — where authorities rigorously evaluate new, more expensive products and reimburse only when they show significant efficacy over existing products — to keep costs down. Under such scrutiny, life sciences companies must show that products are not only cost-effective in the clinical trial setting, but also in real-world situations.

Sales and marketing investments are also under scrutiny. Companies are asking themselves whether it still makes sense to support massive field forces when reimbursement decisions are being made by managed care organizations. The sales forces of the future will need to be well versed in economic issues and adept at selling the economic virtues of products to patients, physicians and payers.

Regulatory affairs

Regulators continue to institute stricter guidelines to ensure products are safe and cost-effective. This results in a longer and costlier product approval process and, in turn, requires drug companies to invest greater amounts to earn a potential return and

See Life sciences on 8

Fresh start for biosimilars in 2009?

By ANTHONY M. INSOGNA
and MARK D. KAFKA
Jones Day

In 2007, legislative initiatives to create a generic biologics pathway stalled before they got started. In fact, innovators and generics from the pharmaceutical and biotechnology industries could not even agree on an appropriate name for these controversial products, often referred to as "follow-on biologics," "biosimilars," "biogenerics" or "comparable biologic products." In 2007 and 2008, several divergent bills were proposed, but the efforts gave way to the presidential and congressional elections. 2009 has seen a resurrection of this debate.

On March 11, Reps. Henry Waxman (D-CA), Frank Pallone Jr. (D-NJ), Nathan Deal (R-GA) and Jo Ann Emerson (R-MO) introduced legislation creating an accelerated process for approval of biosimilar products called the Promoting Innovation and Access to Life-Saving Medicine Act (H.R. 1427). The bill contains significant changes compared to the biosimilar bill Waxman initially introduced in 2007 (H.R. 1038).

Waxman, who is known as a champion of the generics industry, has

introduced a number of limited compromises into this most recent version of his biosimilar bill. For example, the original bill provided no data exclusivity or delay of approval for biosimilars to the innovator drug company. In contrast, the new bill provides for a five-year delay in approval of any biosimilar that uses data from an approved biological product (the "reference product" in H.R. 1427). This period may be extended by three or six months should the applicant receive approval for a new indication.

Under the new bill, a delay period of three years may be granted for an approval of a new use of an existing biological or a substantially similar analog. So-called "orphan" products for rare diseases are provided a delay period of seven years. And, as is the case for traditional pharmaceuticals, an additional six months may be granted if pediatric studies are performed at the request of the FDA.

Thus, Waxman's position, which is supported by the generics industry, has evolved from providing no delay or exclusivity period, to providing for a three- to six-year delay in generic competition at present.

The terminology has also changed

since the introduction of the first Waxman bill. All reference to "comparable" biological products has been replaced by the term "biosimilar," though the definition remains largely unchanged and the term "biogeneric" appears in the titles of section 3 and subsection (k). The requirement that the FDA issue guidance regarding interchangeability standards has been relaxed for one to two years.

Several significant features of Waxman's original bill remain largely intact. For example, the bill continues to provide the FDA with broad discretion to determine whether clinical studies are necessary to show biosimilarity. And, as originally written, the bill permits the FDA to find that a biosimilar is "interchangeable" with the innovator's product. This provision allows a prescribing physician to switch between the innovator product and the biosimilar without restriction — effectively providing a true biogeneric product. The bill also continues to allow the FDA to use the same name for a biosimilar as given to the reference product.

The Waxman bill continues to provide incentives for biosimilar manu-

See Biosimilars on 7

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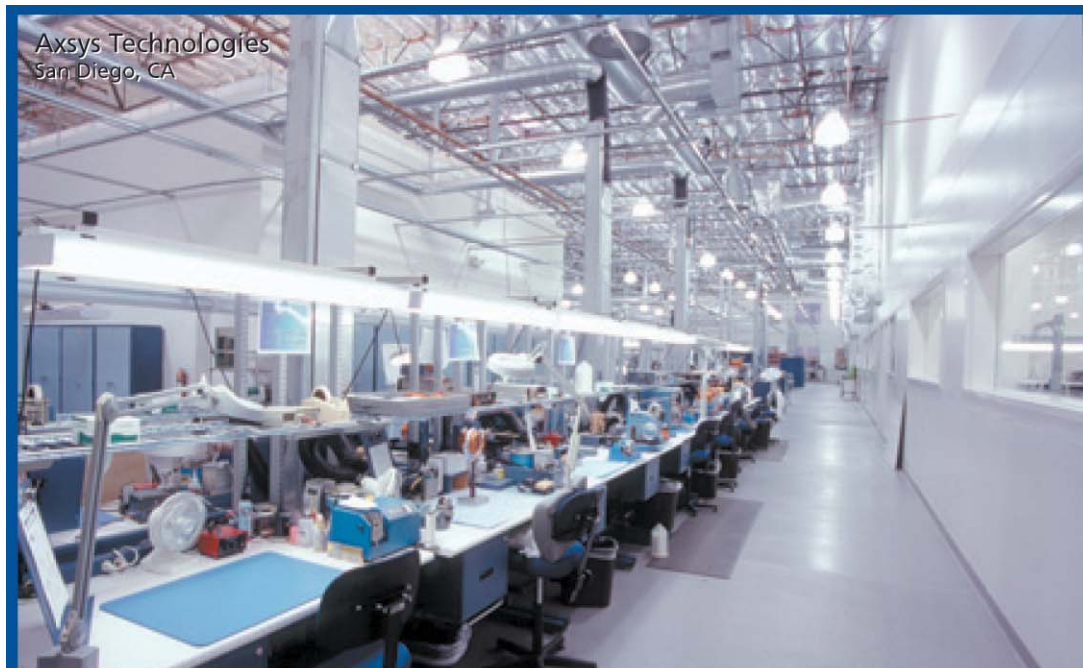


From left to right:
Brent Jacobs
Jennie Puccio
Greg Bisconti
Ted Jacobs

For over 25 years, our team has been the leader in representing life science clients and regularly negotiates over 65% of all San Diego laboratory transactions. Companies, institutes and institutions rely on us for our real estate advisory and brokerage expertise – from finding the right facility to understanding unique tenant improvement requirements and negotiating transactions that fit with their business model. Our knowledge gives life science companies the workplace platform they need to be successful in today's challenging environment.



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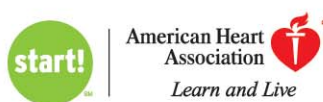
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Close-up: Dave Alberga

Active Network experiences fast growth in slow times

By PADMA NAGAPPAN
Special to the Daily Transcript

Maintaining a 70 percent growth rate via organic growth as well as acquisitions during a recession is no mean feat. It's no wonder that Active Network CEO Dave Alberga is bullish about the future, his company and 2009 revenues.

Founded in 1998, The Active Network initially debuted as an online registration site for endurance races. Event organizers quickly recognized the benefits of paperless registration and by 2000, the company was processing over 1 million transactions for event and league registrations and related e-commerce.

Today, the company has 2,500 employees, 400 of whom are located in San Diego and \$175 million in revenues for 2008.

Alberga anticipates healthy growth this year, although he steered clear of making projections and does expect growth to be slower because of the economy.

Privately held Active Network closed its most recent round of funding, Series F, in August last year, amounting to \$80 million, primarily to facilitate acquisitions and growth.

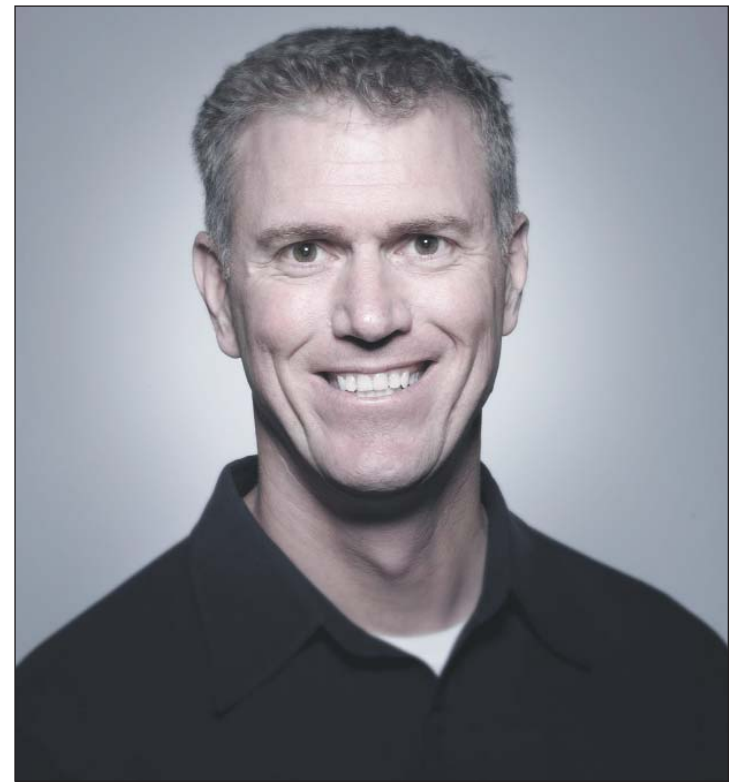
ESPN was the lead investor, along with Canaan Partners, North Bridge Venture Partners and Performance Equity Partners. Since 1999, Active has raised \$275 million.

All rounder/Versatile track star

The company is organized into three divisions that complement each other and offer one-stop shopping in event management.

"We are a software company joined at the hip with a media company," said Alberga, describing the unique business model. The firm combines technology solutions and marketing services with online communities built around the businesses run by its clients, thereby helping clients to automate and grow their markets.

The flagship is the technology solutions division, which offers software tools to help community organizations manage participation and online registrations, reservations, payments, donations and fundraising, among other activities.



CEO Dave Alberga's company helps organizations reduce the cost and complexity of managing community activities and fundraising events.

Active has developed solutions to automate these processes for an entire gamut of industries, from golf course management to endurance events, as well as sports leagues, campgrounds run by states and national parks, public and private schools, events and conferences, nonprofits, hunting and fishing licenses, and church activities.

"Eighty percent of our business is derived from the software solutions we provide and 20 percent comes from the online media properties," Alberga said.

The marketing division focuses on digital media and marketing services. It leverages its relationship with online communities nationwide to help brands connect with more than 60 million active consumers such as runners, golfers, Little League baseball players and their parents.

Active has developed or acquired key online communities built around races and recreational activities (Active.com), team sports (eTeamz), various high school sports (under the banner of Sports Power), runners (Cool Running), golf forums and tee time reservations (ActiveGolf.com).

The company is on the Inc. 500 list of fastest growing private companies, Deloitte's Tech Fast 500, and its mar-

keting group has been named one of America's top promotions agencies by PROMO magazine.

Uphill trekking

Not bad for a company that had no revenue in 1999 (when Alberga came aboard as CEO), experienced tough times during the tech bubble burst of the next two years, had to cut its staff from 200 to 85 while it searched for funding to fuel growth and hit a low point in 2001, when its management team wrote personal checks to fund payroll.

The credit goes to Alberga and his team, who never

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Eli Lilly signs lease with Veralliance Properties for Campus Pointe project

California-based developer says major renovations attract top tenants

Veralliance Properties is currently undertaking one of its largest and most ambitious building transformations in San Diego at its 465,000-square-foot Campus Pointe project located in the University Towne Center (UTC) area. The transformation has attracted biopharmaceutical corporation Eli Lilly and Co. (NYSE: LLY) to the site.

Lilly signed a 10-year lease for roughly 125,000 square feet of space at Campus Pointe, a two-story Class A office/life science project located at 10300 Campus Point Drive. The project sits on an expansive 42-acre site in an enclave of UTC adjacent to Torrey Pines. Lilly plans to locate its West Coast operations in the campus upon completion of renovations this month. Financial terms of the transaction were not disclosed.

"We are essentially rebuilding the entire site down to the steel structure, with a focus on being LEED certified," said Bret E. Gossett, principal with Veralliance Properties. "The result will be a state-of-the-art environmentally friendly location that is unlike anything in the market today."

Veralliance Properties' renovations of Campus Pointe will feature an ultramodern design by San Diego architect Tucker Sadler. In addition to constructing a new translucent green glass curtain wall providing floor to ceiling glass for all new tenants, the project will include a two-story atrium entrance with a "pass through" lobby leading to a two-story spiral staircase.

Amenities include a multi-purpose conference center, fitness room complete with showers and lockers, and bistro with an outdoor seating area.

"Securing a tenant such as Lilly validates the best-in-class quality of our redevelopment plans," said Veralliance's founding principal, Daniel J. Ryan. "Lilly conducted thorough due diligence and amidst numerous viable relocation alternatives, we are honored to have been selected."

Dr. Thomas Bumol, vice president of biotechnology discovery research and president of Lilly-owned Applied Molecular Evolution (AME), said Lilly is "excited to combine both AME and its recently acquired SGX Pharmaceuticals into this location as part of the West Coast Biotechnology Center of Excellence we are creating."

In addition to Lilly, Kyocera Wireless (NYSE: KYO) has been a tenant in Campus Pointe since 2000 and currently occupies approximately 43 percent of the facility.

In the transaction, Brent Jacobs, Greg Bisconti and Brian Cooper of Cushman & Wakefield's Life Science Group represented Eli Lilly and Co. Veralliance Properties was represented by Mark Wayne and Steve Wolf, also from Cushman & Wakefield.

Veralliance Properties is a corporate real estate solutions company focused on the acquisition, development and management of office and life science assets totaling more than 2 million square feet of existing and planned space.

Veralliance Properties is headquartered in San Diego at 8910 University Center Lane, Suite 630. The company Web site is veralliance.com and the phone number is 858-643-9100.

Submitted by Veralliance Properties

Close-up: Donna Janson

Local biotech company launches dentistry drug, with noticeable results

By JILL BLACKFORD

Special to the Daily Transcript

Even as news of the region's biotech industry remains bleak, San Diego-based **Novalar Pharmaceuticals** just launched its first new product and has another in development.

The launch drug, Oraverse, is phentolamine mesylate, which reverses the effects of dental anesthesia. The idea came when Eckhard Weber of **Domain Associates** was in the dentist's office himself.

"Eckhard is truly an amazing person," said Donna Janson, Novalar's CEO. "The story he told me is the epitome of innovation at work. He was at the dentist, who said his patients complained routinely about lingering numbness following procedures."

Weber in turn looked further into reversing the local anesthesia's restrictor. And in 2000, a company was born. Since the drug's mission is one of quickly visible results, it's much more consumer-friendly than most drugs. But from a marketing standpoint, Novalar is focused on dentists first.

"Our marketing right now talks about types of procedures for dentists, but also the patient population is interesting," Janson said. "The label includes children 6 and older or more than 33 pounds. I think that's significant. What we hear is that children have a higher propensity for really chewing on anesthetized

areas and can do significant soft tissue damage. So that pediatric population is something to look at along with general dentists."

There's no real way to know what dentists will charge to consumers, but the sales price point to dentists is \$11-\$18. Dentists may opt not to pass on the cost to consumers at all, instead using Oraverse as a marketing tool. Growth potential for the drug is anticipated to be high, especially with the rise of cosmetic dentistry. And right now there are no known competitors on the market.

"There are 275 million cartridges of local anesthetic sold annually in the U.S.," Janson said. "We believe two-thirds of that is our total market opportunity. It's not for post-op, because we want the patient to be comfortable before coming back to full sensation. It's for very routine dental, crowns and deep cleaning, about two-thirds of that market. And we're looking at 20 percent penetration in the next five to six years."

While Novalar hit a snag in launching the product as planned last fall due to packaging not meeting quality standards, Derek Kelaita, Novalar's director of corporate development, said it remains one of the only San Diego products to receive product approval.

"This is a product that was conceived in San Diego, developed in San Diego and now

launched from San Diego. I think we're a true homegrown success story," Kelaita said.

Novalar has another product in the pipeline, NV201, which will be used to treat and control the pain associated with root canal therapy. It is an antibiotic-coated polymer fiber, which will be placed into a tooth after a root canal procedure. While it provides more of a medical benefit than Oraverse, via preventing infection locally, its market is similar to Oraverse.

"Most endodontic procedures are performed by a general dentist. Our first product, Oraverse, is sold to the general dentist. So when we do get to market, it will be a nice complement to what we're already selling," said Kelaita. "That said, it's a much earlier stage product. There are several years of development required, probably at least five."

For Oraverse's trajectory to market, Janson led the way. She's well versed in taking companies in various stages to market, but this was the first she stewarded from an early stage. The former accountant has made a name for herself taking the lead in setting up startup companies, and she was called on by Weber to handle this role when the company she worked for in Sweden was sold.

"I'm so proud of this team, I can hardly tell you," Janson said. "We were a virtual company when I came in, with



Photo: J. Kat Woronowicz

Novalar CEO Donna Janson is well versed in taking companies in various stages to market.

only two employees. When we filed with the FDA there were only nine. That's unheard of. When we got the approval, there were 14 or 15 people, and that team has brought this project along every step of the way. It's just been outstanding. Now we're huge at 56, and that's predominantly sales and marketing."

As for the days ahead for the rest of the market, neither Janson nor Kelaita are getting caught up in the doomsday talk surrounding San Diego biotech.

"My perspective is that challenges change things for a lot

of people in a lot of locations," Janson said. "It's not just a San Diego issue. Innovation will continue to be supported in San Diego. That's what it's all about. Is it going to be harder? Yes. I think people are going to have to live a little leaner for a little while longer, but true innovation will always find a way to get funding."

"And research at places like Scripps, Salk and Burnham could all be beneficiaries of the stimulus bill," added Kelaita.

For Novalar, the future does look bright. The company was

named breakout life sciences company of 2008 by the San Diego Venture Group, and has been receiving a lot of attention by press and the industry alike since its Feb. 27 launch of Oraverse.

And, as Janson said, "Most products are pretty technical. People just get this (Oraverse). The elegance of this product is its simplicity. It's a wonderful story to tell to people. And the data is so fantastic, it sells itself."

Blackford is a Los Angeles-based freelance writer.

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Close-up: Steve Tomlin

Chumby device provides always-on Internet broadcast

By SYDNIE MOORE

Special to the Daily Transcript

The versatile chumby just might provide consumers with a little too much information. What other gadget can jolt you out of bed in the morning and then flash images of what you did the night before?

This diminutive device was unveiled about a year ago by San Diego-based **Chumby Industries** and is available for purchase online. Enabling people to receive a constant, personalized broadcast of their favorite parts of the Web, the chumby — which measures about 5 inches wide, 4 inches tall and 3 inches deep — is an intriguing amalgam: part clock radio, part Internet news reader and part music player.

Indeed, this mechanism is compact yet powerful: It can broadcast Internet radio stations; deliver Facebook, MySpace and Twitter reports; serve as a digital picture frame for online photo sites;

broadcast weather, news and stock updates; monitor sites such as Craigslist; display YouTube videos and act as a programmed audio wake-up service.

The company behind this irresistible gizmo was founded in San Diego three years ago by entrepreneur Steve Tomlin and several partners. Headquartered in Del Mar Heights, Chumby Industries now has 32 employees, and is poised for white-hot growth. Its namesake product, said Tomlin, takes key online elements and delivers them in a friendly, fresh format. On the company Web site, chumby.com, users can choose from among hundreds of customizable Web applications or "widgets."

"The Internet is a vital part of life," he said. "But it's a challenge to interrupt your real life to dash off to your Internet life." So Tomlin helped develop the chumby to make all the pieces of the Internet ambient and avail-

able continuously — eliminating the need to constantly browse on a computer.

This revolutionary concept seems to be catching on. While Tomlin will not reveal sales figures, he said there are "tens of thousands of happy chumby owners out there, and we expect the market to increase."

Tomlin, who has worked as a senior level executive for high-profile companies such as **America Online**, **QVC Interactive** and **Walt Disney Computer Software**, is well equipped to take on the challenge of making chumby a household name. Armed with an MBA from Harvard and a bachelor's degree from Yale, he has been an executive and investor in the biotechnology, wireless and Internet industries for more than 15 years. After masterminding the chumby idea, he moved quickly to tap a team of local engineers to further develop it "beyond the basic concept."

Given that the typical

Chumby Industries customer is "anyone who makes the Internet an important part of their life," the company has a huge potential market with minimal competition. "There are many ways to access the Internet," Tomlin said, and to that extent, we "always have competition. But we do not know of a single company who is doing exactly what we do."

The biggest challenge, he said, is identifying what is important on the Internet and to whom, "as it offers something different for everyone." College students often use Facebook, while families may opt for digital photo frames to view photos from online photo services.

To better meet the diverse needs of Internet users, the company has developed the Chumby Network, a rapidly expanding pipeline of user-



The touch-screen chumby allows you to see weather and news, read posts from your favorite blog, monitor your queue on Netflix, listen to Internet radio, access Facebook and Twitter accounts and much more.

See Tomlin on 5

Laboratory market poised for opportunity

With 13.8 million square feet of inventory, San Diego County ranks as the third largest biotech hub in the United States behind Boston/Cambridge and the San Francisco Bay Area. This number will continue to grow due to the county's exceptional roster of educational and research institutions and recognition as a desirable place to live and work.

According to Brent Jacobs, senior director with **Cushman & Wakefield's** San Diego Life Science Group, funding for new and existing life science companies is waning with the weak economy and vacancy is starting to increase as a result. Countywide vacancy is at 7.4 percent, up from 5.9 percent a year ago, and could easily reach 9 percent by the end of 2009.

"The recent vacancy spike is due to a growing sublease market as companies relocate or downsize," he said. "A recent theme among local life science companies is to conserve cash above all else, often times cutting R&D for non-lead products."

"It's not all bad news," said Greg Bisconti, also a senior director with the group. "In 2009, San Diego County has witnessed several large local funding events. Additionally, fueled by lower company valuations and cash-hungry biotech, 'big pharma' is in active acquisition mode in an attempt to bolster its aging pipeline. In short, capital is available and exit strategies will continue to exist outside of the public markets."

In 2009, emphasis will be on maximizing efficiency as well as taking advantage of bargains to upgrade in quality. The Cushman &

Wakefield team notes that early-stage companies should not settle for low quality product, as often the marginal savings on face rent can be outweighed by inefficiencies (both layout and function) and recruitment/retention issues.

According to Jacobs, each class of lab space has its functional capabilities and will be priced accordingly. "The rental rate difference between Class A and Class C space will probably range from 25-30 percent," he said. "Life science companies should be careful to review the 'all in' occupancy costs for each building. A 25 percent delta in a lab rental rate may not be the most cost-effective once all of the other occupancy costs are considered."

"As in the last downturn, we expect to see a flight to quality, and only experienced lab brokers will unearth the best deals," Bisconti said. "When selecting a real estate broker, it's imperative to interview them and review their recent and relevant laboratory experience. Working with a lab expert will translate to quality and savings."

"Our 25 years of experience in San Diego laboratory brokerage allows us to provide our clients real value," added Jacobs. "We see 2009 as a year of opportunity for the local life science industry and the companies we represent. Maintaining an active pulse on the market will allow our clients to pounce on 'off market' opportunities, 'turn-key' space, 'shadow space' and sublease bargains."

For more information, call Cushman & Wakefield's San Diego Life Science Group at 858-558-5663, or visit 4labspace.com.

Submitted by Cushman & Wakefield

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Biotech roundtable

Funding biggest challenge for life sciences sector

Local companies looking to bank on federal stimulus package

By ELIZABETH MALLOY
The Daily Transcript

In 1960, when President Kennedy said he wanted U.S. astronauts on the moon by the end of the decade, it seemed impossible. But the government used this single-minded agenda as a policy guide, and in 1969 there was that famous giant leap for mankind.

Local leaders from San Diego's life science and biofuel sector said at a recent *Daily*

Transcript roundtable that while President Barack Obama's objectives to be off foreign oil and find a cure for cancer in a decade's time lack the poetic overtures of the space race, they may even more scientifically ambitious. If Obama wants the goals accomplished, the industry insiders said, he's got to make the goals — and their funding sources — far more direct.

"I worry that with the stimulus package that we see today, it lacks that focus," said Jason Pyle, the chief executive officer of **Sapphire Energy**, a company in Carlsbad that converts algae

to fuel. "We have a problem with dissemination. Who will give the money out, and to what cause and for what reason, is a considerable concern."

Pyle said that since no new entity has been created to distribute the funds, the money has been instead parceled out to various existing programs, which, while instructed on the president's agenda, may stick to their own.

Leif Christofferson, founding partner of the alternative energy consulting firm **Teotl Energy Partners**, said he is seeing an organized push in the so-called "green collar" sector, creating jobs in clean technology. He said a friend in Colorado recently started a green collar veteran's training program and received funding from the government.

Christofferson added that renewable energy grants will be important in growing the green technology sector. However, just how those grants, and green collar training, will be organized is still up in the air.

"Obviously, the rules to that game have yet to be fully defined," he said.

Judy Muller-Cohn, co-founder and CEO of the sample storage company **Biomatrix**, said that at a local level, organizations, particularly those tied to universities, are already under way to push for green collar jobs. At the federal level, however, there doesn't seem to be much concrete movement.

"As I've been researching how to tap into some of this money for research or — in our case for product development — what I've been told is that ... there's still a lot of definition going on," Muller-Cohn said.

Pyle, of Sapphire, has been to Washington, D.C., in recent weeks to try to get a handle on the stimulus package. He said Carol Browner, the former head of the Environmental Protection Agency and Obama's current "energy czarina," has been a strong advocate for alternative fuels.

Life science companies in San Diego are particularly interested in the green economy because the region has made it a priority to grow the sector. Local universities, government and private industry have invested in it, most noticeably with the nonprofit **CleanTECH** group working as an accelerator.



Mike Brown, a shareholder with roundtable sponsor **Stradling Yocca Carlson & Rauth**.

All photos: J. Kat Woronowicz



Bill Blair, chief technology officer of **RF Surgical Systems**.



Ted Schroeder, president, CEO and director of **Cadence Pharmaceuticals**.



Judy Muller-Cohn, CEO of **Biomatrix**.



John Lillig, president and CEO of **NexusBiosystems**.



Jason Pyle, CEO of **Sapphire Energy**.



Arama Kukutai, managing director of **Finistere Ventures**.



Leif Christofferson, founding partner of **Teotl Energy Partners**.

Funds from a federal stimulus package would be advantageous, because all these companies are fighting for investment that, with the economic turmoil, has either dwindled or disappeared.

The companies represented at *The Transcript* roundtable were largely successful, like **Sapphire**, **Biomatrix**, medical device company **RF Surgical Systems** and **Cadence Pharmaceuticals**. But Mike Brown, an attorney with roundtable sponsor **Stradling Yocca Carlson & Rauth** who specializes in life science and technology, said most businesses in the industry are struggling.

"The best of the best will continue to get funded," he said in an interview after the roundtable discussion. "For (the rest) this is a very difficult time.

You're seeing a lot of companies figure out ways to conserve their cash. Some are deciding to just fire everybody and put clinical trials on hold in hopes that they'll survive until better times."

In San Diego, the region's lack of homegrown capital is becoming a real detriment, according to many of the industry leaders at the table. It used to be rather common for San Diego companies to fly to San Francisco or Boston or New York for funding. Now, venture funds are more cautious, and tend to lend closer to home.

"We used to have great banks here, but they all got a acquired," said Stephen Keane, president of **Femta Pharmaceuticals**.

Arama Kukutai, managing director of **Finistere Ventures**, acknowledged that a lot of venture funds here and elsewhere are afraid to invest when they have no idea where the market will be in one, two or three years.

With competition for green collar-related industries like life sciences expanding around the globe, Kukutai said it's vital that San Diego retain its leading edge. With the venture community on the sidelines, Kukutai said the government is a good place to look, but not just in terms of the stimulus package.

"It perhaps underlines the effect, especially in this economy, the importance of the government to every sector," he said. "Certainly on the energy-related or biomass-related investments we're making, we sort of see the stimulus components, and/or funding from agencies like **DARPS**, (the Defense Advanced Research Projects Agency), **DOE** (Department of Energy), **USDA** (United States Department of Agriculture) as being crucial."

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Source Code: 20090326cra

Roundtable participants

Bill Blair
Chief Technology Officer, *RF Surgical Systems*

Mike Brown
Shareholder, *Stradling Yocca Carlson & Rauth (sponsor)*

Leif Christofferson
Founding Partner, *Teotl Energy Partners*

Stephen Keane
President, *Femta Pharmaceuticals Inc.*

Arama Kukutai
Managing Director, *Finistere Ventures*

John Lillig
President/CEO, *NexusBiosystems*

Judy Muller-Cohn
CEO, *Biomatrix*

Jason Pyle
CEO, *Sapphire Energy*

Ted Schroeder
President, CEO & Director, *Cadence Pharmaceuticals*

Close-up: Tina Nova

Diagnostic services firm finds rapid growth in niche market

By MICHAEL CHUNG KLAM
Special to the Daily Transcript

In the fight against cancer, more and more doctors are turning to Carlsbad-based **Genoptix Medical Laboratories.**

Genoptix (Nasdaq: GXDX), founded by Tina Nova Bennett, CEO, specializes in meeting diagnostic needs for leukemia, lymphoma and myeloma, a cancer of the plasma cells found in bone marrow.

"These patients are very sick and need to be diagnosed as soon as possible so that they can be treated," Nova said. "These kinds of diseases cannot be ignored."

Genoptix partners with community hematologist-oncologists (hem-oncs) to efficiently manage each patient case with expertise and accuracy.

What sets Genoptix apart from larger, traditional labs such as **LabCorp** (NYSE: LH) and **Quest Diagnostics** (NYSE: DGX) is that hem-oncs can consult directly with one Genoptix hematopathologist (hempath) — who studies blood and bone marrow. The one hempath provides individualized identification, report-

ing and support for each patient case.

In traditional laboratories, blood and bone marrow samples can pass through as many as three different labs and several doctors, leaving hem-oncs to decipher multiple results.

"The very large companies are more of a Wal-Mart, and we are more of a Nordstrom," Nova said. Where larger labs focus on a lot more products and services, Genoptix concentrates specifically on expert diagnosis of hematological malignancies, blood and bone marrow cancers.

Genoptix provides physicians with the Comprehensive Assessment (COMPASS) report, integrating and analyzing test results to deliver a comprehensive diagnosis. Patients benefit because their doctors can communicate directly with their hempath to have clear answers and take medical action.

"Physicians can speak to a hempath almost immediately," said Marcy Graham, Genoptix senior director of investor relations.

"We try to answer any calls within 10 to 15 minutes," she

said.

Genoptix then monitors disease history in patient testing results through the **Comprehensive Hematopathology Assessment and Review over Time (CHART).**

"We are fully committed to providing all we can to serve our hem-onc customers," Graham said. "Our primary focus is on helping them to navigate the ever-increasing complexity associated with diagnosing and treating oncology patients, whatever that requires."

And the Genoptix way — one patient, one hempath, one diagnosis — has afforded the company its current growth and success.

Profitable since the first quarter of 2007, and with revenues up 96 percent from 2007 to 2008, Genoptix ranked as the ninth fastest-growing company in North America on Deloitte's 2008 Technology Fast 500.

Deloitte based its rankings on the percentage of revenue

growth over five years. Genoptix grew 28,288 percent during that period of time, reporting revenues of \$200,000, \$700,000, \$5.2 million, \$24 million and \$59.3 million in 2003, 2004, 2005, 2006 and 2007, respectively, according to company documents.

Genoptix was also named the fastest growing company for the San Diego area in Deloitte's prestigious Technology Fast 50 Program.

Nova founded the company in 1999, began offering diagnostic services in 2004, and went public on the Nasdaq in 2007. Genoptix shares closed on Tuesday at \$25.90.

With 6 percent market share in 2008 and \$170 million in projected revenue for 2009, Genoptix has added staff and space to its facilities. The company plans to add 12 full-time employees to the current lab work force of 25, Nova said, and expects to have 120 sales representatives

See Nova on 7



"The very large companies are more of a Wal-Mart, and we are more of a Nordstrom," says Genoptix CEO Tina Nova, of the company's approach to providing service.

Innovative San Diego life sciences companies weather the storm

By MICHAEL BROWN and ARAMA KUKUTAI

Special to the Daily Transcript

Amid economic gloom, there are bright spots for San Diego life sciences innovators. Industry fundamentals remain favorable, technological advances continue to be made and \$10 billion in funding from the National Institutes of Health was approved in the economic stimulus package signed by President Barack Obama. For the ag-biotech and clean energy cluster growing here, federally guaranteed loans may help underwrite construction of projects with new technologies in renewable energy at a time when debt markets are closed.

With San Diego's widely recognized research institutions and excellent talent pool, our region stands ready to claim a sizable share of the technology-focused stimulus money. Our top-notch universities combined with The Scripps Research Institute, Salk Institute for Biological Studies and Burnham Institute for Medical Research should be a magnet for federal grant money.

Yet at the same time, many existing life sciences companies are finding innovation is as necessary in the executive office as it is in the laboratory. More than half of the nation's 370 public biotech companies are reportedly down to less than a year of cash on hand, and the public markets are effectively closed. The outlook for privately held life sciences companies is similarly sobering, with down rounds of venture financing and fire-sale mergers fairly commonplace.

Collaborations with big pharma and licensing of existing technologies are proving to be the answer for some. Sales and purchases of promising drug candidates are avenues for others. Meanwhile, biofuels, including those based on algae, have captured the imagination of some of our brightest scientists and key investors, and galvanized academic, industry and community support.

But not every company will make it. There will be some triage. Many venture funds with investments in the life sciences space are committed to keeping their best existing portfolio companies alive through the current downturn. As a result, they are diverting what would normally be Series A money into later stage rounds, and early stage funding is in short supply.

But for venture funds like Finistere with dollars to



Brown

invest, this is a prime opportunity to find top-quality early stage technology and business plans backed by first-rate management teams. And companies funded in the last year have a reasonable chance of not needing additional funding until the country is in its recovery phase.

For existing companies that now have 18 months to two years of financing in the bank, this is a wonderful time to be in business. Operating costs are lower, and it is an excellent time to hire from a motivated talent pool.

Still, the current environment requires us to analyze risk in the life sciences industry — not only financial risk, but also other risks like those associated with regulatory clearance. As FDA hurdles mount, the road to drug and medical device approval has become increasingly expensive, and low tolerance for risk stifles innovation and ultimately withholds products that could benefit the majority of the population. The regulatory burden increases costs for the entire industry, which are passed on to citizens as well as costing the economy.

Challenges that were burdensome in good times become critical in a recession, and this may be a good time to re-evaluate priorities and seek new solutions, not only as a nation, but also in the business of biotech and health care.

Brown is a shareholder in the San Diego office of corporate law firm Stradling Yocca Carlson & Rauth. He represents companies in venture financings, licensing/partnering, mergers and acquisitions and public financing. Kukutai is managing director of Finistere Ventures, which focuses on early stage investments in medical devices, non-therapeutic biotech, agbiotech, renewable fuels and green energy.

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Tomlin

Continued from Page 3

created and commercial widget applications from high-profile media partners. Users can share content over the network and receive streaming audio, video and data content from media venues ranging from Pandora to the *New York Times*. In fact, soon after unveiling the chumby, the company secured deals with leading content providers including CBS, MTV Networks, MySpace, The Weather Channel Interactive, AOL's SHOUTcast and Scripps Networks.

By partnering with Chumby Industries to provide content, media companies can showcase new materials on a distribution platform that reaches consumers in different parts of their lives and at different

times of the day, Tomlin said.

Penetrating the market on a broader level, Chumby Industries is also targeting the makers of electronics devices to meet soaring consumer demand for personalized Internet content on television screens and other connected devices.

"Our focus is to bring the Internet to a broad range of consumer electronics — from LCD televisions to photo frames to clock radios," Tomlin said. His ultimate goal is ambitious and far-reaching: to bring the chumby experience to all "connected" consumer devices in the household.

The appeal of this concept is evidenced by the company's growing roster of partnerships with electronics companies. In recent months, Chumby

Industries has announced ventures with key industry leaders such as **Samsung Electronics, Marvell, SMK Electronics Corp., Wolfson Microelectronics** and **Broadcom Corp.** (Nasdaq: BRCM).

Ultimately, Tomlin said, "we enable electronics makers to have more compelling products" — as demonstrated by the recently inked deal with Samsung Electronics to provide a reference design built on Samsung's applications processor for Internet-connected digital photo frames (DPPFs).

By utilizing chumby technology, the digital photo frame can now be an effective, Internet-connected appliance. "Digital photo screens offer an ideal platform for delivering

our technology and content," said Tomlin. By working with Samsung, "we are taking the DPPF category to whole new level."

As another example, Chumby Industries' recent partnership with Broadcom will enable consumer electronics manufacturers to deploy the chumby support platform to Internet connected televisions, set top boxes and Blu-ray Disc players — with no additional cost.

The bottom line? The company's options for growth and expansion are virtually unlimited. And as Internet use grows, so will San Diego's own Chumby Industries.

Moore is a San Diego-based freelance writer.

Source Code: 20090326crj

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Strategies for managing a patent portfolio

By **STEPHANIE L. SEIDMAN**
and **KAREN G. POTTER**
K&L Gates LLP

A comprehensive patent strategy requires managing all aspects of a patent portfolio, from correctly identifying inventors and their assignment obligations to tracking priority of claimed subject matter. Overlooking these issues can have detrimental effects on patentability, validity, enforceability and patent term. The following basic tips should avoid some of these pitfalls.

Ownership/inventorship

Upon filing a first application, including a provisional application, the claims should be reviewed individually to identify each contributing inventor. If joint inventors are named, they must have in some manner communicated

with another joint inventor to be properly named on the same application. The claim-by-claim identification of inventors is useful to track the contributions of each inventor as prosecution proceeds. Each time a divisional or continuation application is filed, the claims should be reviewed, and inventors identified, to track the inventive contributions.

In the United States, a patent application is owned by the inventor, absent an agreement to the contrary. Typically, inventors have employment agreements, which govern their assignment obligations. Although employment agreements confer this ownership interest, assignments are filed before each patent office and provide third-party notice of the ownership. The employment agreements of each

inventor should be reviewed to ensure they oblige the inventor to assign his/her rights, and that the appropriate entity is named in the assignment document. Ownership review and filing of assignment documents should be completed before filing the application. This is particularly important before filing an international application or other foreign application where the owner is the named applicant. Although it is sometimes possible to correct inventors or applicants after filing, the costs and procedures to do so can be substantial. In some instances, if an applicant is omitted, the error cannot be corrected later.

Continuation-in-part applications

Any continuation application that is filed to contain new

matter can be designated a continuation-in-part (CIP) application and claim priority to an earlier filed parent application. Patent term, however, is calculated from the earliest claimed priority date, so that the added subject matter, which is not entitled to the priority date, loses valuable patent term. A patent practitioner should be wary before filing a CIP application because added subject matter that does not find basis in the earlier application does not benefit from the earlier filing date. It is a misconception that the earlier priority date will afford new matter in the CIP protection from prior art. In the United States, the parent application can be prior art to any claims to the added subject matter in the CIP application that do not share a common inventive

entity. In foreign countries, the parent application, assuming it is filed in the foreign country, is per se prior art for novelty to any new subject matter, and can be prior art for inventive step if the earlier application has published. Thus, there is little benefit to filing a CIP application. In order to preserve patent term, any disclosure that encompasses new subject matter can be filed as a separate application. The claims should be drafted to be patentable over any prior art references, including any earlier applications.

Seidman, Ph.D., is a registered patent attorney and partner in the San Diego office of K&L Gates LLP. She provides counseling to biotech and pharmaceutical companies for strategic development of their patent portfolios. Potter, Ph.D., is a registered patent agent and senior technology specialist in the San Diego office of K&L Gates, where she focuses on patent prosecution of biotech, pharmaceutical and life science technologies.

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Alberga

Continued from Page 2

stopped believing in the potential that the business had and eventually found the funding they needed to grow.

Revenue started flowing in from 2000, starting at \$2.4 million. Active experienced consistent growth every year, crossing the \$100 million milestone in 2007. Despite the impressive growth, it was not until last year that the company turned a modest profit, getting out of the red. "Our business model is unique. No separate media company or technology provider could compete with us. The economics are tough — (even) two companies trying to partner would not be able to do what we do unless they have a structure like ours," Alberga said, pointing out that, "Even with \$175 million in revenues, my EBIT (earnings before interest and tax) is not a lot."

Moving forward

Speaking about plans for the future, Alberga said part of the focus will be on recent acquisitions.

"We are going to spend '09 in digestive mode. We've done a fair number of acquisitions and we are going to focus on acquisition integration." Noteworthy among these transactions are several software firms that were either No. 1 or No. 2 in the United States in campground reservations and hunting and fishing permits, both key growth areas.

Active will also concentrate on installing enterprise-level information systems internally, and tackling significant investments in new technology for its clients.

"We are making a significant bet that the market will grow. We are really reinventing ourselves inside and outside this year. We will go to market with the new products by the end of this year," said Alberga. He explained that as a result of all the acquisitions, the firm manages a sizeable number of separate systems and plans on replacing those legacy systems.

The company also plans to create an Active Outdoors division, consisting principally of campground reservations, hunting and fishing permits and licensing, and will build a media division around this niche area. The idea is to focus on and expand this market. To this end, Active recently acquired ReserveAmerica, a portal site for campsite reservations.

"A total of 45 states and national parks use us. Now that we are partnering with the states in automating their reservations, we are going to grow this market. We also want to grow the media audience around it — then we will have the capability to help our clients with marketing," Alberga explained.

This two-pronged strategy of simultaneously developing a target market and a supportive community that enhances the market is not new for the company. It has successfully utilized the same tactics in the past to help clients such as endurance event organizers by drawing on its communities to grow their market.

With all the measures that will be put in place this year, Alberga expects Active will be poised for tremendous growth when the economy turns around.

Nagappan is a San Diego-based freelance business writer.

Source Code: 20090326crf

Telecommunications Companies

Listed by Number of Local Employees

Company Name Local Phone URL	Number of Local Employees		Business Description	Executive(s) & Title(s)	Year Established
		Number of Companywide Employees			
1 Qualcomm Inc. (858) 587-1121 www.qualcomm.com	6,000	12,800	Develops and delivers digital wireless communications products and services based on the company's CDMA digital technology.	Paul Jacobs, Chairman/CEO; Steven Altman, President	1985
2 AT&T Inc. (800) 310-2355 www.att.com	5,800	309,050	A worldwide provider of wireless, high-speed Internet access, local and long distance voice, and directory publishing and advertising services.	Randall L. Stephenson, Chairman/CEO	1908
3 Cox Communications (619) 263-9251 www.cox.com	2,300	22,000	A full-service provider of communications solutions including high-speed Internet, voice and long distance services, data and video transport services.	Patrick Esser, President, Corporate; William K. Geppert, Sr. VP/GM, San Diego	1898
4 Time Warner Cable (858) 695-8285 www.roadrunnerbiz.com	978	86,000	Cable, high-speed online and digital phone services provider.	Glenn Britt, President/CEO; Judy Walsh, President, San Diego Division; Tad Yo, VP/GM	1964
5 Kyocera International (858) 576-2600 americas.kyocera.com	622	1,170	San Diego-based Kyocera Wireless produces mobile handsets and other wireless products.	Rodney Lanthorne, Chairman of the Board/President, Kyocera Wireless Corp.	1959, 1969 in the U.S.
6 Leap Wireless International Inc. (Cricket Wireless) (858) 882-6000 www.leapwireless.com	400	1,507	Digital wireless service, including voice and data services under the brand Cricket.	S. Douglas Hutcheson, President/CEO/Director	1998
7 Novatel Wireless (858) 888-9231 www.novatelwireless.com	300	250	Provides wireless broadband access solutions for worldwide mobile communications.	Peter V. Leparulo, Chairman/CEO	1996
8 HM Electronics Inc. (858) 535-6000 www.hme.com	300	249	Provides customer-focused solutions that enhance the performance and productivity of businesses worldwide.	Harrison Miyahira, Founder; Chuck Miyahira, CEO	1971
9 Teldata Enterprise Networks (858) 874-2151 www.teldata-usa.com	99	99	A telecommunications and installation services company.	Robb Hajar, Owner	1989
10 Continuous Computing Corp. (858) 882-8800 www.ccpu.com	95	300	Provides integrated systems and services that enable telecom equipment manufacturers to rapidly deploy Next-Generation Networks (NGN).	Mike Dagenais, President/CEO; Amit Agarwai, Sr. VP, Engineering	1998

Data Source: The Companies and their Web sites. Listed by Number of Local Employees. This is a partial list; a more complete listing can be found at sourcebook.sddt.com. N/A: Not Applicable, n/a: not available, wnd: would not disclose. It is not the intent of this list to endorse its participants, nor to imply that a company's size or numerical rank indicates its quality or service. We reserve the right to edit listings or to exclude a listing due to insufficient information. The following companies did not respond to our survey: Pulse, Remec Broadband Wireless LLC, Atel Communications, L-3 Communications Titan Group. Compiled by Robin Scott, robin.scott@sddt.com. Last updated 3/2009.

Publicly Traded Biomed & Biotech Firms

Listed by Market Cap on March 23, 2009

Company Name Phone URL	Market Cap on 03/23/2009	Ticker Symbol	Business Description	Executive(s) & Title(s)
1 Life Technologies Corp. (760) 603-7200 www.lifetechnologies.com	\$5,645,042,000	LIFE	Biotechnology tools company.	Gregory T. Lucier, Chairman/CEO
2 Illumina Inc. (858) 202-4500 www.illumina.com	\$4,706,297,000	ILMN	Development, manufacture, marketing of integrated systems for the analysis of genetic variation and biological function.	Jay T. Flatley, President/CEO
3 ResMed Inc. (858) 746-2400 www.resmed.com	\$2,555,676,000	RMD	Design, manufacture, marketing of equipment for the diagnosis and treatment of sleep-disordered breathing and other respiratory disorders.	Peter C. Farrell, Exec. Chairman; Kieran Gallahue, President/CEO
4 Gen-Probe Inc. (858) 410-8000 www.gen-probe.com	\$2,387,080,000	GPRO	Develops, manufactures, markets nucleic acid probe-based products used for the clinical diagnosis of human diseases, and for screening donated human blood.	Henry L. Nordhoff, Chairman/CEO; Carl W. Hull, President/COO
5 Amylin Pharmaceuticals Inc. (858) 552-2200 www.amylin.com	\$1,694,152,000	AMLN	Discovery, development and commercialization of medicines for diabetes, obesity and other diseases in the United States.	Daniel M. Bradbury, President/CEO; Mark G. Foletta, Sr. VP, Finance/COO
6 Isis Pharmaceuticals Inc. (760) 931-9200 www.isispharm.com	\$1,394,634,000	ISIS	Engages in RNA-based drug discovery and development for its product pipeline and its partners.	Stanley T. Crooke, Chairman/CEO; B. Lynne Parshall, Director/COO/COO
7 NuVasive Inc. (800) 455-1476 www.nuvasive.com	\$1,022,476,000	NUVA	Medical device company, engaged in design, development, marketing of products for the surgical treatment of spine disorders.	Alexis V. Lukianov, Chairman/CEO; Keith Valentine, President/COO
8 Sequenom Inc. (858) 202-9000 www.sequenom.com	\$1,002,469,000	SQNM	Provides products, services, diagnostic testing, applications, genetic analysis products, translational research, molecular medicine, and agricultural and livestock applications.	Harry Stylli, President/CEO
9 Genoptix Inc. (760) 930-7127 www.genoptix.com	\$437,991,700	GXDX	Provides specialized laboratory service that focuses on delivering diagnostic services in the United States.	Tina Nova, President/CEO/Co-Founder; Douglas Schuling, Exec. VP/COO; Samuel Riccitelli, Exec. VP/COO
10 Halozyne Therapeutics (858) 794-8889 www.halozyne.com	\$406,404,700	HALO	Engages in the development and commercialization of products targeting the extracellular matrix for the drug delivery, oncology, dermatology markets.	Jonathan E. Lim, President/CEO

Data Source: Bloomberg and the firms' Web sites. Listed by Market Capitalization on March 23, 2009. This is a partial list; a more complete listing can be found at sourcebook.sddt.com. N/A: Not Applicable, n/a: not available, wnd: would not disclose. It is not the intent of this list to endorse its participants, nor to imply that a company's size or numerical rank indicates its quality or service. We reserve the right to edit listings or to exclude a listing due to insufficient information. Compiled by Robin Scott, robin.scott@sddt.com. Last updated 3/2009.

Close-up: Peter Shaw

President of networking forum: Less funding raises bar for tech startups

By ELIZABETH MALLOY
The Daily Transcript

Count Peter Shaw among the chorus of investment industry executives who say they've never seen a financial climate worse than the one we're in now. But don't count him among those without hope.

"Good ideas, smart people, innovation — there's always an opportunity to get them funded," Shaw said.

Shaw is the current board president of the San Diego Venture Group, a nonprofit organization designed to bring together entrepreneurs, investors and service providers for networking and education. He also owns a consulting firm, **Shaw Management Advisors International LLC**, which advises early-stage companies.

Shaw has also worked as an executive at about four companies through the course of his career, generally coming on early-stage. His expertise as both an investor and an executive has been in the technology sector.

He said that even in today's economy, San Diego will likely remain a leader in the wireless industry, thanks largely to the presence of **Qualcomm** (Nasdaq: QCOM) and the smaller companies it's helped generate.

Biosimilars

Continued from Page 1

facturers to promptly file regulatory applications and challenge innovators' patents. For example, the first biosimilar manufacturer to receive approval receives 180 days of exclusivity. And with regard to patent challenges, a biosimilar manufacturer is awarded one year of exclusivity if it successfully defends an infringement suit, or is not sued by the innovator. Further, the first approved biosimilar is awarded 36 months of exclusivity if litigation is pending in that time period. In sum, while the Waxman bill could be characterized as a compromise bill, it still undoubtedly favors generics.

On March 17, Reps. Anna Eshoo (D-CA), Jay Inslee (D-WA) and Joe Barton (R-TX) introduced a competing piece of legislation called the Pathway for Biosimilars Act (H.R. 1548). This bipartisan bill also provides an accelerated process for licensure of biosimilars, as did the 2008 bill sponsored by Eshoo (H.R. 5629). Eshoo's bill differs from Waxman's legislation in a number of fundamental ways.

First, and foremost, innovators would be entitled to a 12-year period of exclusivity after initial licensure, extendable to 14 years if the innovator obtains FDA approval for a supplement that demonstrates



"The best ideas are still going to get funded, it's just the average ideas that may have gotten funded in the past will not," said Peter Shaw, board president of the San Diego Venture Group.

Web 2.0 companies have a strong base here as well, and the gaming sector is growing. Most gaming companies are based closer to Los Angeles, but Shaw said North County San Diego has seen an influx

in recent years.

Shaw said he is no expert on the biotech and life science sector, but he has seen some good deals continuing in that space.

Entrepreneurs have com-

a new use that is a significant improvement over other products on the market. Similar to the Waxman bill, these exclusivity periods can be increased an additional six months for pediatric indications. The first interchangeable biological product also receives exclusivity for 24 months after the biosimilar is first commercially marketed, or the date the product is determined to be interchangeable (whichever is later).

The Eshoo bill also contains safeguards to protect patients, absent in Waxman's proposal, that require generic manufacturers (absent FDA waiver) to submit analytical, animal and clinical studies that include assessments of immunogenicity. Eshoo's bill also requires the FDA to publish guidance regarding the feasibility of making an interchangeability determination, and the data required to support making an interchangeability determination, before a clinical trial to assess immunogenicity may be waived. Likewise, Eshoo's bill does not contain provisions that encourage patent challenges.

Much has changed since 2008. Waxman is now chair of the House committee that will be largely responsible for the introduction of biosimilar legislation. Congressional democrats, generally viewed as favor-

ing generics, have increased their majorities. Notably, Rep. Jay Inslee, who in April 2007 introduced his own bill (H.R. 1956) providing a 14-year exclusivity period for the innovator product, has now signed on to Rep. Eshoo's more moderate proposed legislation. And last, but certainly not least, the current resident of the White House is seen as much more sympathetic to the interests of the generic industry than his predecessor.

Indeed, in President Barack Obama's 2009 budget plan, he calls for increased access to cheaper biosimilars. Thus, in view of these recent changes, if a bill is passed this year, it is likely to be more in line with Waxman's proposal than Eshoo's. The Waxman and Eshoo bills represent the starting line in the 2009 race to create a pathway for follow-on biologics — a race that will likely end with a new regulatory design for biosimilar products.

Insogna is a partner in the San Diego office of Jones Day. His intellectual property practice focuses on the pharmaceutical and biotechnology industries. Kafka, an associate with Jones Day, focuses on U.S. and foreign patent prosecution in the areas of biotechnology, chemistry, pharmaceuticals and medical devices.
Source Code: 20090326cr

plained for months that venture capital has dried up. According to Dow Jones, venture funding in both technology and biotechnology decreased drastically in 2008 from 2007. Two years ago, about \$461 million was invested in technology in the San Diego area, compared to \$299 million last year. Biotechnology took an even bigger dip, going from \$1.2 billion in 2007 to \$561 million in 2008.

Dow Jones didn't have numbers available yet for the first quarter of 2009. Shaw said he expected it would be down even more.

He insisted, however, that it's not that there's no venture funding, just that the bar has been raised.

"The best ideas are still going to get funded, it's just the average ideas that may have gotten funded in the past will not," he said "something that just makes something faster or less expensive is not what folks are looking for." he said. They are looking for "truly breakthrough technology; things that are going to

change your world."

A native of New York City, Shaw has lived and worked in San Diego since the mid-1970s. He co-founded a computer graphics company that was later sold, which sent him on a path of working with early- to mid-stage companies, usually in technology fields. Shaw said he's drawn to those kinds of companies because of the freedom they offer, and because that's where his skill set lies.

As the board president at the San Diego Venture Group, Shaw helps set the agenda for the group's monthly meetings. Once a month, members get together for a networking breakfast that features a discussion on issues important to getting a business off the ground.

While the Venture Group's board meets once a year to plan its meetings, Shaw said the agenda can change with the situation on the ground, as it did after last fall's economic nosedive.

"We're focused a little less on traditional ways to raise

money, and more on ... what should companies look for to continue growing their companies," he said.

Shaw suggested that for startups, the most important thing right now is to get to market as quickly as possible. A mid-stage company should focus on holding onto cash reserves rather than expanding, he said.

Not being an economist, Shaw said he couldn't really say just how long or how bad the economic downturn will be, and said companies should be as prudent as possible with their money right now. But that doesn't mean there are no business opportunities.

"As long as I've been in business, I've never seen anything as severe as right now," Shaw said, assessing the current economic climate. "The key is that companies or entrepreneurs need to be truly innovative and have a well-qualified team available to execute."

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Nova

Continued from Page 5

within three years.

Genoptix increased its laboratory space by 75 percent. It now occupies approximately 100,000 square feet in two facilities for its corporate headquarters and diagnostic laboratories.

"We keep performing and outperforming the guidelines we've been given," Nova said.

Despite the current financial downturn, Nova said, "The important thing to know here is that diagnoses of leukemia and lymphoma are not affected by the economy." Patients with these illnesses cannot put off diagnosis and treatment, she said.

And the numbers are considerable: According to Genoptix, there are currently 850,000

hematological malignancy patients in the United States, with an additional 150,000 new cases annually. The Leukemia & Lymphoma Society estimates 138,530 people in the United States were diagnosed with leukemia, lymphoma or myeloma in 2008.

In the testing market, the company estimates 375,000 bone marrow samples and 250,000 blood-based tests per year, resulting in potential revenue of \$1 billion.

Genoptix expects its bone marrow market share to grow to 15 percent to 20 percent in the next three to five years.

The company also will expand its solid tumor service, Nova said.

There are 11,000 hem-oncs in the United States as poten-

tial clients, 79 percent of them working in the community setting, according to Genoptix.

And the laboratory will continue to enhance its offerings to its current customers - physicians, and ultimately their patients.

"We understand the customer really well, and they like the way we do what we do," Nova said.

Genoptix serves its customers high-quality, comprehensive testing and diagnosis, providing immediate help for patients to get the right treatment.

The goal, Nova said, is to improve patients' lives.

Chung Klam is a San Diego-based freelance writer.
Source Code: 20090326crh

ROEL Construction, American Heart Association challenge corporate San Diego to Start! walking

Heart disease and stroke continue to be the nation's No. 1 and 3 killers, and 142 million American adults — 66 percent of Americans — are overweight. Physical inactivity is a major risk factor for heart disease, and is a comparable risk to other modifiable risk factors such as high blood cholesterol, high blood pressure and smoking. About 70 percent of the American population engages in no regular leisure-time physical activity, which is defined as light-moderate activity for more than 30 minutes, five times a week, or vigorous activity (like brisk walking) for more than 20 minutes, three times a week.

At a time when companies are laying off workers and cutting benefits, some local businesses are taking a different approach during the economic downturn. Rather than cutting benefits, some businesses are investing in keeping their employees happy and healthy. San Diego-based **ROEL Construction** has committed to lead the American Heart Association's Start! Wellness Program — a no-cost corporate wellness campaign promoting healthy lifestyles. Start! serves as both a smart fiscal choice and a powerful catalyst for positive change in the culture of American businesses by helping to promote wellness in America's workplaces. The focus of the campaign is simple: Walk more. Eat well. Live longer.

Here are some things that people can do to reduce their risk for heart disease and stroke:

- Don't use tobacco — It's the No. 1 preventable cause of serious illness such as heart disease, stroke, lung cancer and emphysema.
- Be physically active — It can build endurance, control blood pressure, reduce cholesterol levels, aid in weight control and reduce your risk of developing diabetes.
- Eat healthy foods — Foods high in saturated fat, trans fat and cholesterol contribute to atherosclerosis, a primary cause of heart attack and stroke. Consuming too much salt (sodium) can cause high blood pressure in some people.
- Watch your weight — Obesity is a major risk factor.
- Avoid excessive alcohol — One or two drinks a day may help increase "good" HDL cholesterol, but heavy drinking can contribute to high blood pressure, heart disease and stroke.

Start! encourages corporations and individuals to promote physical fitness and help break down the obstacles that keep Americans from being physically active. The movement focuses on walking as an activity because it is accessible, free and has the lowest dropout rate of any type of exercise. Join ROEL Construction and AHA to kick-off the Start! movement in San Diego at the National Start! Walking Day celebration on April 8, downtown at the San Diego Concourse Plaza. Visit www.americanheart.org to learn more about how to get involved.

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Life sciences

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recoup the cost of development.

A few high-profile adverse effects with some recent blockbuster drugs have prompted regulators to view new medicines differently, especially those created through advanced technology. Given the novelty of scientific approaches within biotechnology, emerging products are being evaluated carefully by regulators. Companies can help facilitate the approval process by cultivating better relationships with regulators and reimbursement authorities and involving them early and often. According to the DTT survey, industry executives recommend engaging regulators by demonstrating product value early in the commercialization process and working closely with patients, clinicians and academics.

Talent management
Finding and retaining R&D

resources has escalated in the last decade as companies look beyond the blockbuster model. Increased mergers and acquisitions and concerns about the industry's stability have also strained the ties between employees and companies. As a result, overall employee turnover has reached record highs at life sciences companies — and this turnover, when paired with the increasing costs of R&D and manufacturing, is squeezing margins further.

Under pressure, companies will depend more on key employees to help the organization succeed. As the industry transforms, the need for talent will expand well beyond R&D to a far more diversified set of skills, such as regulatory and government relations and working with third parties across the enterprise.

R&D
Risks associated with R&D

are set to rise sharply through the next decade, placing R&D at the root of the industry's transformation. Historically, R&D strategies have largely depended on generous funding for scientists, in the hope of finding a few products capable of producing significant revenue. No longer is this formula very effective. Instead, life sciences firms must improve the efficiency of their R&D operations and evolve from a high-risk, high-reward model to a more managed risk approach.

One transformative approach is to focus on finding "nichebusters," highly effective therapies for smaller, targeted markets, instead of blockbusters — a strategy that could deliver a healthy profit margin and reduce the development risk.

The survey results also showed industry leaders see value in forming collaborations with academics, providers, payers and regulators to share not

only R&D risk but also its innovative approaches.

Sharing risk through outsourcing is also popular. In the future, R&D will involve a variety of players, each contributing their unique capabilities toward the generation of a single product.

Life sciences companies are realizing that their business models must change dramatically, and may face strategic transformation as an ultimatum rather than an option. Although this transformation may prove uniquely challenging in the heavily regulated world of life sciences, companies, regulators and payers can work together to find new approaches that work for everyone.

Bova is the life sciences sector leader for Deloitte's Pacific Southwest region and has 15 years of consulting experience in health care and life sciences.
Source Code: 20090326crd

Biomimicry

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come as the symposium eventually builds to a national scale.

Some companies are already ahead of the curve. Carpet company **Interface Inc.** (Nasdaq: IFSIA), whose carpet can be seen in zoo buildings, produces carpet tiles inspired by the "organized chaos" of the forest floor.

The tiles, made of recyclable materials, are glued down using nature-inspired adhesives. If stained or damaged, they can be switched out easily, thus minimizing waste.

San Diego, too, has its own batch of companies with biomimetic products.

Qualcomm (Nasdaq: QCOM) subsidiary MEMS Technologies commercialized technology in 2007 that borrows from butterfly wings and peacock feathers.

Qualcomm's mirasol displays mimic the way light reflects off the scales of butterfly wings,

absorbing and reflecting certain light wavelengths to create color. The displays can change color rapidly, remain vibrant under low-light conditions, and require less energy.

"With converged mobile devices encouraging consumer adoption of sophisticated multimedia applications, the mobile industry must overcome challenges such as draining batteries, low-quality images and lag times when showing video," said Jim Cathey, vice president of Business Development for Qualcomm MEMS Technologies, in an e-mail.

Another San Diego company, **H2OFutures**, copies nature's processes of using biological filters to reclaim dirty water and saltwater.

"This is what nature's been doing for billions of years," said co-director Ned Daugherty.

Vista-based **Assure Controls** takes a slightly different tack, using bioluminescent plankton to measure the toxicity of water. The organisms give off less light when in toxic water and are touted as a quicker method of testing water.

Biomimicry is by no means new, but it's catching on.

When the San Diego Zoo first launched its biomimicry initiative in 2008 with a free public informational event in June, attendance expectations of 40 were trounced when nearly 400 people showed up.

"It's paradigm shifting; it's transformational," Brock said, "and we're really promoting it."

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Source Code: 20090326crn

Partner

Continued from Page 1

This broadening of the opportunity horizon can already be seen in the fact that 12 of the top 17 most valued mergers and acquisitions between 2007 and September 2008 involved non-U.S. companies, with half of those deals involving European pharma on the buying end, while Japan and Canada accounted for one acquisition each. Seven of those European acquisitions targeted U.S.-based biotech, reflecting a potential lifeline trend for the pipeline-deficient overseas big pharma industry, as well as concurrently indicating a bargaining advantage for the U.S. targets, according to data compiled by BioWorld Today.

Ted Torphy, CSO and head of external research and early development at **Johnson & Johnson Pharmaceuticals**, said "the inexorable move toward partnering is being driven by economic forces within big pharma, the growing strength of innovation from external sources and the worldwide commoditization of R&D expertise. These trends will fuel a surge in partnerships between the pharmaceutical industry, biotech and academia that will fundamentally and irreversibly change the model by which new drugs are discovered and developed."

Partnering isn't recession proof, but it is proving to be an effective strategy that can keep the drug development markets functioning and solvent through the current economic crisis. Given the demonstrated successes of partnering over these past few years, the positive dynamic is likely to continue.

In today's uncertain times, the partnering trend is providing an important surrogate role for biotechs while IPOs and VCs stay clear of the market for now. The globalization of biotechnology will only increase. Few can take the risk of not exploring the opportunities offered by partnering to find a perfect match for capital or discoveries elsewhere in the world. Local companies will find their prospects curtailed if their partnering sights are not set internationally.

Schropp is founder and president of Carlsbad-based EBD Group, a partnering firm in the life science market. EBD Group runs five international partnering events on three continents that generate more than 30,000 one-to-one meetings annually.

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