

SoCalBio SYNERGIES

The Voice of the Life Sciences Community in the Greater Los Angeles Region



The 7th SoCalBio Investor Conference held last March in downtown LA heavily drew upon out-of-region investors, given that there are only seven VC funds in Greater Los Angeles that actively invest in the Life Sciences industry.

Bridging LA's Venture Funding Gap

Public Employee's Pension Funds Should Be Tapped to Help Startups Fuel Entrepreneurial Drive with Local Capital

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During each SoCalBio Investor Conference, we are reminded that Los Angeles faces a fundamental imbalance in terms of Life Sciences research and venture capital. While our research capabilities, led by institutions such as UCLA, USC, City of Hope and Caltech, are among the best in the world, the local VC environment is too weak to support commercialization activities. In fact, the six counties of Greater Los Angeles are home to only seven VC funds that actively invest in the Life Sciences industry, and just five of these have interest in early-stage deals. This scarcity of local smart money can make it difficult for startups to develop new ideas. It can also make them vulnerable to cherry-picking by venture capital firms from the Bay Area or East Coast.

Thanks to the efforts of the Southern California Biomedical Council and supporting organizations such as LAEDC, the Life Sciences industry is an economic development priority in the Los Angeles region. But local companies need world class venture capital, as well as research capabilities, to grow.

The role of venture capital in the commercialization of Life Sciences innovations is essential. According to a recent study by Pacific Bridge Life Sciences and the Weinberg Group, more than 100 million Americans have benefited from venture-backed medical innovations developed during the past 20 years. The study, entitled "PATIENT CAPITAL: Improving the Lives of Millions," also reported that venture-backed medical innovations are developed and made available to patients as much as three times faster than those developed via the "bootstrapping" approach⁽¹⁾.

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Understanding Changes to the Rules Governing H-1B Visas

Four Key Updates Offer a Mixed Bag for Biotech Employers

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Biotech employers across the nation cite access to skilled labor as one of the most significant hurdles to commercialization. This persistent shortfall has forced many employers to rely heavily on foreign workers. Surveys of U.S. companies (including SCBC member companies) conducted from 1998-2001 found that 6% to 10% of the nation's biotech workforce (about 18,000 employees) was employed under H-1B visas.

- Surveys of H-1B visa holders in the biotech industry⁽¹⁾ show that:
- 80% were graduates from U.S. schools;
 - 75% had graduate degrees (40% PhDs, 35% MSs, 20% BSs, and 5% MDs);
 - 85% eventually acquired permanent residency in the US;
 - Their skill sets satisfied the most pressing employment needs of the biotech industry;
 - They were compensated at rates equal to or, in many cases, higher than that of their U.S. counterparts; and
 - Biotech companies spent an average of \$10,200 per visa holder on fees and legal expenses.

7th SoCalBio Investor Conference Demonstrates the Abundance of Innovations in Greater Los Angeles



Karen Newell of Newellink USA presents new therapeutics that take advantage of fundamental differences between healthy and diseased cells in energy strategy and demands.



Jerry Loeb of AMI - USC presents the "Sencil," a percutaneous optical sensor that can be used in, among other things, real-time, continuous detection of glucose levels in diabetics.

Unfortunately, comparable estimates are unavailable for the medical device industry.

To address the H-1B visa issues, CSUPERB, AdvaMed, and the Department of Commerce are currently working to determine the medical device industry's reliance on such workers.

The Ups and Downs of H-1B Visa Numbers:

As a result of lobbying by the IT and biotech industries, the annual H-1B visa cap was raised from 65,000 in the mid '90s to 115,000 in fiscal year 1999, and then again to 195,000 in fiscal year 2001. The last increase was made with the provision that the cap would revert to 65,000 on October 1, 2004. In mid-2001, BIO initiated discussions to raise the 2001 cap from 65,000 up to a higher level to ensure the biotech industry's access to talented foreign nationals. But this effort was derailed by the events of September 11th. Fortunately, the law that increased the cap also contained a provision that exempted H-1B visa holders employed by institutions of higher education, nonprofit research organizations, and governmental research organizations, thus exempting 10,000 workers from the provisions of the H-1B visa cap.

When the federal government's 2005 fiscal year began on October 1, 2004, the H-1B cap reverted to 65,000. At that time, the U.S. Citizenship and Immigration Services (USCIS) announced that it had received enough H-1B petitions during the preceding six months to use up the entire supply for the fiscal year. USCIS

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Mann Expands University Endowment Program

Plans to Create Biomedical Institutes at Leading Research Centers

Renowned Life Sciences entrepreneur and philanthropist Alfred E. Mann formally announced during the 7th SoCalBio Investor Conference an initiative to commit well over one billion dollars toward his goal of creating a new generation of university-based biomedical institutes to be modeled after the already established Alfred Mann Institute for Biomedical Engineering at USC (AMI-USC), and focus on translating early-stage technology into life-saving products (see *SoCalBio Synergies*, Volume 1, Issue 2 for a feature on AMI-USC and its director and COO Peter Staudhammer, Ph.D.). This initiative is the largest of its kind to help university researchers commercialize their intellectual property free from financial pressure.



Alfred Mann announces his plans to create at least 10 biomedical research institutes around the country during the 7th SoCalBio Investor Conference held last March in Los Angeles.

As a scientist, engineer and entrepreneur, Mr. Mann has built a reputation as a pragmatic visionary with the dream of helping cure diseases that plague mankind. As a philanthropist, he is helping to fundamentally redefine how biomedical technology is transferred to the marketplace.

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Supply of Wet Lab Space Expected to Remain Tight in Greater Los Angeles

By Shaun Stiles
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The Greater Los Angeles region (mainly Los Angeles, Ventura, and Orange Counties) is home to a large number of Life Sciences startups whose growth outlook seems very promising. However, their growth threatens to be stunted by the region's scarcity of lab space. Currently, the Los Angeles region contains just 4.5 million square feet of Life Sciences lab space. Furthermore, the supply has been relatively static, increasing by just 20% since 1995.

The Wet Lab Market in California⁽¹⁾

	Total SF	Rent Per SF	TI Allowance
Greater Los Angeles:	4,503,000		
Los Angeles	2,161,440	\$25 - \$30 NNN	\$25 - \$50
Ventura	405,270	\$25 - \$30 NNN	\$25 - \$50
Orange	1,936,290	\$30 - \$36 NNN	\$25 - \$50
San Diego:	9,639,495		
Torrey-Pines	5,203,868	\$34 - \$42 NNN	\$100 - \$175
UTC - Eastgate, Campus Point	1,012,135	\$33 - \$37 NNN	\$100 - \$150
Sorrento Mesa	1,937,868	\$24 - \$36 NNN	\$100 - \$150
Sorrento Valley	1,485,624	\$21 - \$30 NNN	\$100 - \$150
Bay Area:	17,600,000		
South San Francisco	N/A	\$25 - \$50 NNN	\$0 - \$50
Downtown San Francisco	N/A	\$25 - \$45 NNN	\$10 - \$50
Peninsula/Silicon Valley	N/A	\$11 - \$42 NNN	\$0 - \$40
East and North Bays	N/A	\$15 - \$45 NNN	\$0 - \$40

(1) Colliers International, *Alchemy: Annual Review and Analysis of Real Estate Trends in the Life Science Industry*, Volume 1, Summer 2004

Demand for lab space has been moderate, with positive net absorption of 253,000 square feet over the past three years. However, most of that activity took place in 2002, with net absorption in 2003 dropping to a negative 37,000 square feet. Construction activity has been restrained due to a lack of existing lab space and the limited number of landlords who truly understand the Life Sciences industry.

Most Life Sciences companies in the greater Los Angeles region have been forced to build out and/or renovate facilities in order to create their own lab space. The region's total availability rate for lab space (including sublet space) is just 7.4%. This is significantly lower than the overall availability rate for office space, which stands at 17.1%. It is also lower than the 9.1% overall availability rate for R&D space.

Unlike most other regions with significant Life Sciences industry clusters, Los Angeles is sprawling in nature, and does not have one particular area where companies are concentrated. Nearly half of the space occupied by Life Sciences companies is in Los Angeles County, mostly in the San

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Grant Winner Spotlight



Dr. Bradley Patt speaks on molecular imaging during the December 2004 SoCalBio Networking Forum held at USC.

Since it was founded, Photon Imaging Inc. has relied on SBIR funding to support its varied R&D activities including entry into the increasingly popular molecular imaging field. In contrast to traditional diagnostic imaging, molecular imaging seeks to detect abnormalities on the molecular level that may cause diseases, rather than diagnose the end results of such molecular alterations⁽¹⁾. This task is accomplished by powerful instruments that marry imaging modalities (nuclear, x-ray, MR, and optical) to molecular and cell biology for the purpose of providing *in vivo* characterization and measurement of biologic processes at the cellular and molecular levels⁽²⁾.

During the past five years, Photon Imaging and its Northridge-based spinoffs, Gamma Medica, Inc. (the commercial outlet for Photon's medical systems), Radiant Detector Technologies, LLC (the commercial outlet for Photon's industrial and scientific technologies), and DxRay, Inc. (a recent spinoff seeking to develop direct digital x-ray detectors that could drastically lower x-ray dose in clinical exams), won 47 NIH SBIR grants totaling over \$10 million. "These grants were pivotal in developing products commercialized by Gamma Medica — including the LumaGEM[®] clinical system and the FLEX[™] pre-clinical platform of products," said Bradley Patt, Ph.D., Photon Imaging's co-founder and Gamma Medica's president.

Gamma Medica is a market leader in pre-clinical imaging. Its LumaGEM[™] is a dedicated, high-resolution solid-state gamma camera for molecular breast imaging used for the early detection of breast cancer. The FLEX[™] pre-clinical imaging systems (SPECT, PET and CT) are used for high-resolution imaging in drug development and medical research. ❖



Gamma Medica's new X-O[™] Micro CT system, part of the FLEX pre-clinical platform, performs whole body image acquisition in less than one minute.

(1) R. Weissleder and U. Mahmood, "Molecular Imaging," *Radiology*, No. 316, 2001, pp. 316-333.

(2) For an overview, see: Joyce Ward, "From Mice to Man: Is Imaging the Magic Pill for Faster Drug Development?," *ADVANCE for Imaging and Radiation Therapy Professionals*, Jan. 17, 2005.

Photon Imaging Inc.

At a Glance

Founded: 1998

Founders: Bradley Patt, Ph.D. and Jan Iwanczyk, Ph.D.

Location: Northridge (CA)

Spin-offs: Gamma Medica, Inc.; Radiant Detector Technologies, LLC; and DxRay, Inc.

Employees: 55

Business: Molecular imaging systems

Revenues from Sale: Yes

Products: LumaGEM[®], Breast Imaging System FLEX[™] Pre-Clinical Platform, X-SPECT[®] MicroSPECT, X-PET[™] Pre-Clinical PET, X-O[™] Micro CT, and the Vortex[®] Line of Products

CLINICAL STUDIES

Orqis Medical (Lake Forest):

Orqis Medical -- a developer of novel devices for congestive heart failure (CHF) patients -- announced on April 26th that it received unconditional FDA approval to conduct a pivotal trial of its Cancion cardiac recovery system (CRST). The Cancion is the first therapy for CHF based on continuous aortic blood flow augmentation to the descending aorta, and is designed to create an environment that allows the heart to rest while it recovers from an acute decompensation event. ❖

Arbios Systems (Los Angeles):

The Cedars Sinai spin-off announced on April 22nd that it received conditional approval from the FDA to begin the first feasibility trial of its SEPET, an extracorporeal artificial liver assist device. SEPET is designed for blood purification in patients suffering from acute liver failure. The initiation of this clinical study followed Arbios' success in raising \$6.6 million via a private placement last January. ❖

Epeius Biotechnologies (Los Angeles):

Epeius -- a biotech company developing cancer therapeutics -- announced on April 5th that a Phase I clinical trial has begun in New York to test the safety and efficacy of Regin-G, a tumor-targeted gene delivery vector for treating metastatic colon and pancreatic cancer. In 2003, Regin-G gained FDA approval as an Orphan Drug based on clinical demonstrations of its medical utility in the treating pancreatic cancer. ❖

Ista Pharmaceuticals (Irvine):

ISTA Pharmaceuticals (Nasdaq: ISTA) announced on March 21st that it has submitted an Investigational New Drug Application (IND) with the FDA to conduct a Phase IIb clinical trial for ecabet sodium, a prescription eye drop for the treatment of dry eye syndrome. Pending clearance by the FDA, ISTA intends to initiate the Phase IIb trial in the second quarter of 2005. ❖

Edwards Lifesciences (Irvine):

Edwards Lifesciences (NYSE: EW), the world leader in heart valve technologies, announced on January 27th that it received conditional approval from the FDA to begin the first feasibility trial of its Cribier-Edwards percutaneous aortic heart valve. This device is designed to treat patients with severe aortic heart valve stenosis -- a narrowing of the valve that restricts blood flow -- who are not good candidates for conventional open-heart valve replacement surgery. ❖

COLLABORATIONS

Beckman Coulter (Fullerton):

On March 31st, Beckman (NYSE: BEC) entered into a licensing agreement with GenWay Biotech (San Diego, CA). This agreement will allow Beckman to access GenWay's proprietary IgY microbead technology, which can be used for enhancing the detection of biomarkers and drug targets in biomedical research. Beckman also signed an agreement last January with Critical Therapeutics (Nasdaq: CRTX) to access the latter's High Mobility Group Box Protein 1 (HMGB1) technology to develop tests for sepsis and other medical conditions. ❖

Xencor (Monrovia):

Xencor -- a biotech company developing engineered antibody and protein drugs to treat cancer, inflammation, and other conditions -- unveiled last January two important collaborations with Chugai Pharmaceuticals and Roche. Both Chugai and Roche will utilize Xencor's XmAb technology to create monoclonal antibodies with greatly enhanced potency. The XmAb technology consists of a suite of engineered antibody Fc domains that can be applied to any antibody to control the recruitment of the immune system's effector functions and to increase antibody-mediated tumor killing. ❖

M&As

Beckman Coulter (Fullerton):

Beckman announced on April 27th its plans to acquire Agencourt Bioscience Corp. of Beverly, MA -- a provider of genomic services and products -- for up to \$140 million. Agencourt developed techniques for isolating and purifying RNA and DNA. Beckman indicated its interest in using these techniques in automated sample preparation systems for research and molecular testing. ❖

BioSource International (Camarillo):

On April 6th, BioSource International (Nasdaq: BIOI) -- a maker of assays, biologicals, serum, buffers, and media for biomedical research -- received an unsolicited acquisition offer from Bio-Rad Laboratories of Hercules, CA (AMEX: BIO). The latter offered to acquire all of BioSource's outstanding shares for \$8.50 per share. On April 11th, BioSource's board turned down the \$82 million cash bid because it was considered significantly below value. In January, BioSource sold its Hopkinton, MA-based custom antibody and peptide business. ❖

Inamed Corp. (Santa Barbara):

Inamed (Nasdaq: IMDC) announced on March 21st that it entered into a definitive merger agreement with Medicis Pharmaceutical Corp. (NYSE: MRX) of Scottsdale, AZ. Inamed provides breast implants, dermal products to treat facial wrinkles, and the BioEnterics LAP-BAND and BioEnterics IntraGastric Balloon (BIB) systems to treat severe and morbid obesity. Medicis offers products addressing various conditions including acne, fungal infections, rosacea, hyperpigmentation, photoaging, psoriasis, eczema, skin and skin-structure infections, seborrheic dermatitis and cosmesis. It is expected that the merger of Inamed and Medicis will lead to the creation of a company with annual revenue in excess of \$700 million, operations in more than 12 countries, and approximately 1,500 employees. ❖

IPOs

Amphastar Pharmaceuticals (Rancho Cucamonga and El Monte):

Amphastar Pharmaceuticals -- a developer of injectable and inhalable drugs -- has filed to raise \$115 million via an IPO of common stock on the Nasdaq under proposed ticker symbol AMPR. President and CEO Jack Zhang owns 30% of Amphastar; COO Mary Luo controls 29%. Other significant shareholders include the Applied Physics & Chemistry Laboratory and the China Development Industrial Bank. ❖

NDAs

Ista Pharmaceuticals (Irvine):

Ista announced on March 28th that the FDA approved its Xibrom drug to treat eye inflammation following cataract surgery. Xibrom, also known as bromfenac ophthalmic solution, is a sterile, topical, nonsteroidal anti-inflammatory compound. The product has been sold in Japan since 2000 by Osaka-based Senju Pharmaceuticals Co. Ista acquired U.S. marketing rights for Xibrom in May 2002 under a license from Senju. In January, Ista finished a secondary public offering of stocks that netted \$52 million. ❖

PMA's

Irvine Biomedical (Irvine):

In January, Irvine Biomedical obtained FDA approval of its PMA for the IBI Therapy Cardiac Ablation System. This device is indicated for mapping the heart. It can also be used with a compatible radio frequency generator to treat tachycardia-related conditions. Last year, St. Jude Medical (St. Paul, MN) acquired Irvine Biomedical for \$47 million. Completed in October 2004, this acquisition was facilitated by St. Jude Medical's long-standing relationship with Irvine Biomedical in Japan, where St. Jude Medical distributes its products and already held a partial ownership position through the acquisition of Getz Bros. Co. in 2003. ❖

510(k)s

FDA 510(k) Decisions in Q1/2005

Month	All 510(K)s	CA 510(K)s	Greater LA 510(K)s
Jan	215	25	14
Feb	264	50	21
Mar	284	61	26

Selected Greater Los Angeles 510(k) Orthopedic and Bone Products Cleared in Q1/05

Advanced Orthopedic Solutions (San Pedro):

In March, Advanced Orthopedic Solutions obtained a 510(k) clearance for its **AOS Humeral Nail**. This device allows for intramedullary fixation of humeral shaft fractures including those that are segmental or severely comminuted. ❖

Ceremed (Los Angeles):

Ceremed obtained two 510(k)s in March for its **AOC Porous Polyethylene** and **AOC Bone Wax**. The AOC Porous Polyethylene is intended for the augmentation or reconstruction of the craniomaxillofacial skeleton. The AOC Bone Wax is designed to control bleeding from bone surfaces. ❖

Interpore (Irvine):

Interpore -- a developer of spinal, orthobiologic and vertebroplasty surgical products used by orthopedic surgeons and neurosurgeons -- obtained a 510(k) in February for its **DBM Bone Graft Substitute**. This product is used for filling bony voids or gaps in the extremities and pelvis that are not intrinsic to the bony stability of the structure. These defects may be surgically created osseous defects or osseous defects created from traumatic injury to bone. Interpore was acquired in 2004 by Biomet (Warsaw, IN) and became part of the latter's EBI business unit. ❖

Triage Medical (Irvine)

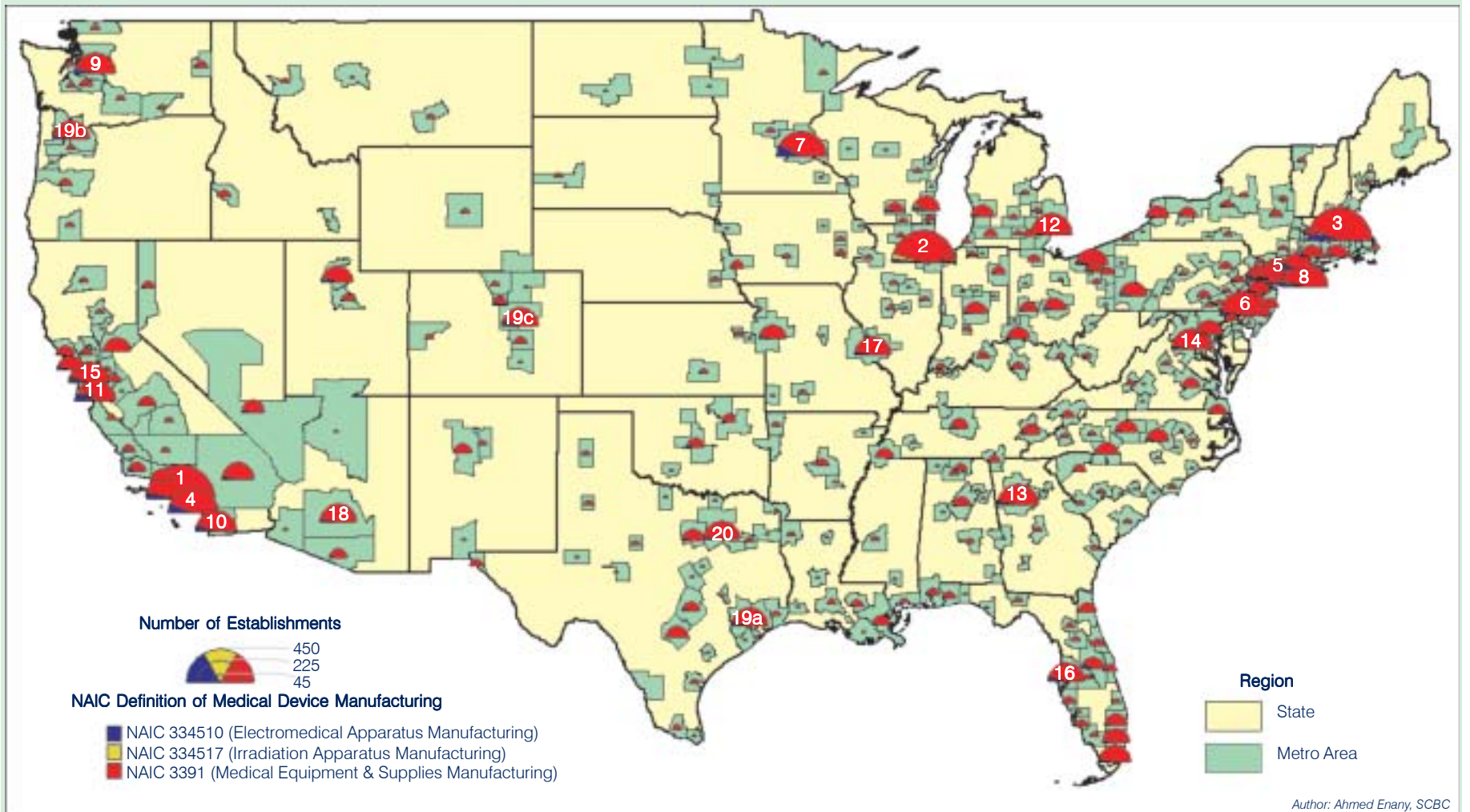
In February, Triage's Class II **4.5mm BONE-LOK Facet Screw** was cleared for marketing. This device is intended for use in stabilizing the spine as an aid to fusion through bilateral immobilization of the facet joints. The 4.5mm BONE-LOK Facet Screw is indicated for bilateral facet fixation, with or without bone graft, at single or multiple levels from L1 to S1. Triage focuses on developing products based upon its CLASP Technology for a broad range of orthopedic applications. ❖

TriMed (Valencia):

TriMed -- a firm specializing in small fragment and peri-articular fractures fixation devices -- obtained a 510(k) clearance in January for its **Ulnar Osteotomy Plate**. This is a class II bone fixation implant for use in osteotomy procedures of the ulna. The ulna (along with the radius) is one of the two bones in the forearm. ❖

Medical Device Manufacturing Establishments in the US by Metro Area

(Based on the 2002 metro area business patterns released by the US Census Bureau in March, 2005)



Author: Ahmed Enany, SCBC

Top 20 Metro Areas by Number of Establishments

Metro Area	Establishments	Number of Establishments by Employment size										Metro Area	Establishments	Number of Establishments by Employment size									
		1-4	5-9	10-19	20-49	50-99	100-249	250-499	500-999	1000+	1-4			5-9	10-19	20-49	50-99	100-249	250-499	500-999	1000+		
1 Los Angeles-Long Beach, CA	448	237	88	54	37	13	10	5	4	0	12 Detroit, MI	179	93	36	30	17	2	1	0	0	0		
2 Chicago, IL	399	205	63	59	34	13	18	3	4	0	13 Atlanta, GA	178	92	45	15	13	6	3	2	2	0		
3 Boston-Worcester-Lawrence-Lowell-Brockton, MA-NH	376	154	54	56	46	23	24	11	5	3	14 Washington, DC-MD-VA-WV	172	111	29	17	14	1	0	0	0	0		
4 Orange County, CA	269	114	39	34	32	19	18	9	2	2	15 Oakland, CA	169	73	33	20	27	4	6	5	1	0		
5 New York, NY	268	163	46	28	21	5	5	0	0	0	16 Tampa-St. Petersburg-Clearwater, FL	161	88	29	13	17	6	2	3	1	2		
6 Philadelphia, PA-NJ	267	115	54	30	38	11	15	1	3	0	17 St. Louis, MO-IL	147	80	22	23	7	4	8	2	1	0		
7 Minneapolis-St. Paul, MN-WI	259	87	38	37	35	23	24	9	4	2	18 Phoenix-Mesa, AZ	144	87	25	20	6	2	2	2	0	0		
8 Nassau-Suffolk, NY	218	115	36	29	17	16	5	0	0	0	19a Houston, TX	139	78	16	22	13	2	6	2	0	0		
9 Seattle-Bellevue-Everett, WA	190	95	36	23	19	8	3	4	1	1	19b Portland-Vancouver, OR-WA	139	70	24	18	11	9	5	0	2	0		
10 San Diego, CA	188	88	31	23	19	10	12	3	1	1	19c Denver, CO	139	69	27	15	12	6	6	2	2	0		
11 San Jose, CA	184	85	25	17	18	10	17	5	3	4	20 Dallas, TX	135	65	29	14	6	8	5	8	0	0		

Venture Gap

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While such facts bode well for Life Sciences companies in regions with lots of VC firms, they have done little to bolster companies in Los Angeles and other VC-challenged areas. Due to market imperfections, information impactiveness, and the need to reduce transactions costs, most VCs invest in their own backyards. History also shows that when left to their own devices, VC firms tend to favor investing in regions perceived as "safe bets" in terms of Life Sciences commercialization. This is why -- as the Ernst & Young/Venture One survey results presented at the 7th SoCalBio Investor Conference demonstrate -- most VC money for Life Sciences ventures now goes to the San Francisco Bay Area, Boston, and San Diego.

Regions such as Los Angeles, which are awash with entrepreneurial drive but short on smart local capital, must develop a mechanism to affect this regional flow of investment dollars. One drastic, but timely, measure being proposed is to start tapping local public employee's pension funds in order to increase the region's supply of investment dollars. This is not a new idea. In fact, it was first proposed by the SCBC leadership during its first City of LA Mayor's Life Sciences Industry Roundtable in 1999.

A pension fund can operate as a "fund of funds" by allocating some of its assets to venture capital firms. Several states have already adopted policies to ensure such asset allocation by public employee pension funds is carried out in a manner conducive to spurring investment in the Life Sciences industry.

One of the earliest such initiatives was "Technology 21" -- launched in 1998 by then Pennsylvania Governor Tom Ridge. This initiative was adopted in response to poaching by Boston venture capitalists who were relocating Pennsylvania companies to Massachusetts. Governor Ridge issued an executive order requiring the state's pension fund managers to invest in a public/private venture fund dedicated to providing local companies with a Pennsylvania source of capital⁽²⁾.

Most recently, Oregon launched a program to direct \$100 million to venture funds that agree to consider Oregon-based biotech and device start-ups. The money comes from the state's \$44.4 billion in pension assets. Florida also plans to devote 5%, up from 4%, of its \$101 billion in pension money to venture and other private-equity deals. Wisconsin has devoted \$50 million of its state retirement funds to biotech venture investments⁽³⁾. Even VC-rich Massachusetts made its first Life Sciences private equity investment as part of a program designed to

use pension funds to help stimulate economic development⁽⁴⁾.

In Los Angeles, there are a number of sizeable public employee's pension funds that can be utilized to perform similar functions. Candidates include the Los Angeles City Employees' Retirement System (LACERS), Los Angeles County Employees' Retirement Association (LACERA), and Los Angeles Fire and Police Pension (LAFPP). These three funds have a combined \$48 billion under management. Investing just 1% of these funds in venture funds that agree to consider LA-based startups can provide a very powerful catalyst for LA's Life Sciences industry.

Presently, the exposure of LACERS, LACERA, and LAFPP to Life Sciences private equity investment is, at most, minimal. For example, a closer look at LACERS reveals that of its \$8.2 billion under management, only \$352 million (4.3%) is considered "alternative investments," where LACERS already acts as a fund of funds allocating money to VCs and private equity investors (see table 1).

Table 1
LACERS' Fund Allocation⁽⁵⁾

	Actual (\$ Mil)	%	Projected (\$ Mil)	%
Domestic Equity	3,759.4	45.6%	3,300.0	40.1%
Non-US Equity	1,705.4	20.7%	1,485.0	18.0%
Fixed Income	2,142.0	26.0%	2,227.5	27.0%
Real Estate	253.1	3.1%	577.5	7.0%
Alternative Investments	352.7	4.3%	577.5	7.0%
Cash	37.4	0.5%	72.0	0.9%

LACERS' "alternative investments" portfolio includes only three Life Sciences VC firms -- Menlo Ventures, Essex Woodlands Health Ventures, and InterWest Partners -- none of which has a presence in LA. These firms received about \$27 million, or 0.33% of LACERS' total assets under management.

LACERS is already planning to increase its "alternative investments" by \$225.2 million, from \$352.7 million to \$577.5 million. Directing fund managers to earmark half of this amount to encourage investing in Los Angeles Life Sciences ventures, particularly if replicated by other funds

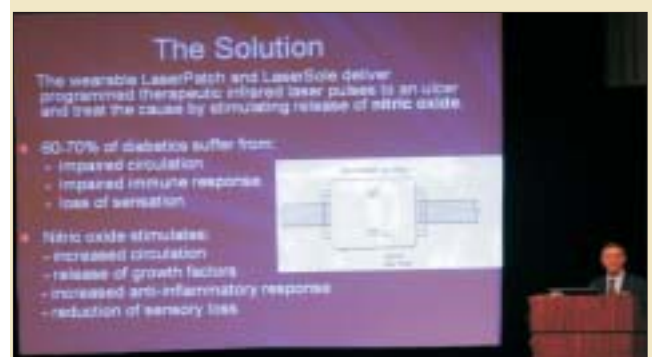
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Adam Rotunda of LA BioMed and UCLA presents a new method for treating obesity.



Robert Freedman of Hurel presents a microfluidics-based device for cell-based studies. This device promises to eliminate animal testing in drug discovery.



Marvin Prescott of Arterial Light Sciences presents a new therapeutic device for wound healing.

Alfred Mann

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Mr. Mann recently spoke with **SoCalBio Synergies** to provide specifics about the new endowment initiative –

Q: When was this initiative conceived?

A: I first started thinking about the concept nearly 20 years ago, when it was becoming clear that public companies in the U.S. were losing their ability to invest in long term projects outside their immediate core business. This focus on short-term results was a double loss for the U.S. in terms of innovation and Nobel prizes. The idea behind the Alfred Mann Institutes is to help research institutions develop and commercialize technologies that require a commitment to long-term thinking.

Q: What do you hope to accomplish with the new institutes?

A: What many people in academia don't fully grasp is that ideas and intellectual property don't by themselves have that much value in the real world. The unfortunate fact is that very little intellectual property developed at universities ever makes it to the commercialization stage. Our goal is to foster development of promising new technology to create products that benefit mankind, while at the same time generating substantial value for universities and inventors.

Q: How will the institutes be structured?

A: Each will be based on the existing model for AMI-USC, which is incorporated as a distinct and separate entity from its host university. They will operate under affiliation agreements with their universities, and function as nonprofit "angel" investors, shepherding new technologies through the development process. Products will be commercialized via license agreements or the establishment of new start-up ventures.

Q: How does this model benefit universities and inventors?

A: Our approach maximizes the rate of return to both universities and investors by postponing the need for outside capital until an invention reaches the commercial stage. Early stage licensing deals heavily dilute the value to universities and investors. Conventional incubators and technology transfer tend to force inventions prematurely into the marketplace, which can stifle their commercial prospects. Our institutes will create substantial value for each university because we will share the proceeds.

Lab Space

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Fernando, Conejo, Santa Clarita and San Gabriel Valleys, which are all north and east of downtown Los Angeles. An additional 9% is in the Thousand Oaks portion of Ventura County, which is immediately adjacent to Los Angeles. The remaining 43% is in Orange County, primarily in the South County area near University of California at Irvine.

Tenant Improvement costs for lab space range between \$75 and \$125 per square foot, although many landlords will fund only a portion of the cost. Annual rental rates average between \$25 and \$36 NNN per square foot, with rents generally at the low end of the range in Los Angeles and Ventura Counties, and at the upper end of the range in Orange County.

Interest in the region's future requirements for lab space has picked up recently, with demand projected to increase during the remainder of 2005. Driving this growth in demand is: (1) a strengthening economy (*the number of employed residents in the Los Angeles region grew by 138,000, or 1.6%, in the 12-month period ending February 2004 - a rate that greatly outpaced the nation*), (2) a growing concentration of startup firms that continue to expand, (3) generally

Venture Gap

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such as LACERA and LAFPP, can generate significant benefits to the region's economy. This money will expand the capital pool for local venture capitalists interested in launching new funds. Also, out-of-area VC firms that receive such money will be required to establish a presence in the region. The bottom line is that Los Angeles Life Sciences entrepreneurs would have more local VC funding options to draw upon.

To the detractors who argue that "economically targeted" investments often perform poorly, we say take a lesson from your colleagues in other states and adopt a more far-sighted view. Targeted pension fund investing can work because there is no inherent contradiction between increasing a fund's return on investment and, at the same time, serving the region's economy. Of course local fund managers should continue to pursue strategies that increase investment returns. But they should also be directed to give preference, *ceteris paribus*, to investment options that generate benefits to the Los Angeles economy. ❖

Q: How will the proceeds be shared?

A: Royalties from licenses or equity income will be split four ways between the inventor, the Institute, the university and the Alfred Mann Foundation.

Q: How many universities will be involved?

A: Our goal is to establish institutes at an additional 11 universities in the U.S., bringing the total, including AMI-USC, to 12.

Q: Which universities are under consideration?

A: We're currently looking at two to three dozen public and private universities. On the west coast, our short list includes Stanford and select UC campuses, as well as the University of Washington and University of Utah. In the east, the list includes Johns Hopkins, Duke, the University of Pennsylvania and the University of North Carolina/North Carolina State, which will collaborate. In the future, we're also looking at setting up Institutes at research institutions outside the U.S., including the Technion in Israel, and at least one in Europe.

Q: What is the timetable for dispersing the funds?

A: We will announce two grant endowments per year until all of the planned Institutes are established.

Q: Can you describe the selection process?

A: We have a committee of nine people evaluating universities to determine if their biomedicine programs are a good fit. Those that will be selected must share our vision and demonstrate a substantial commitment to research, entrepreneurial spirit and creative new approaches.

Q: How will the funds be dispersed?

A: The 11 new U.S. universities will receive initial grant endowments of \$100 million, which may be increased significantly in the future. For example, AMI-USC is on track to receive an additional \$50 million, making our total commitment to the university about \$162 million.

Q: Are these institutes going to support only medical device projects?

A: Some of the institutes will concentrate on medical devices, while others will work on pharmaceuticals and biotechnology. It depends on each university's existing expertise. ❖

Q&A with Alfred Mann was conducted on April 15, 2005 by Erik Deutsch, managing editor (erik@socalbio.org).

strong industry-wide growth projected for Life Sciences companies, and (4) the region's potential to increase its market share of national activity, particularly in the biopharmaceutical segment.

There are a number of plans to develop Life Sciences industry parks in Los Angeles, particularly in prime locations adjacent to major research institutions. Such projects would help ease access to lab space. The list of projects includes:

- ◆ The City of Hope's plan to develop a research park to accommodate biopharma companies on 29 acres in Duarte;
- ◆ The ambitious plan to create a biomedtech park next to the USC Health Sciences Campus;
- ◆ Arden Realty's proposed 400,000 sq. ft. of dedicated bioscience space in the Howard Hughes Center in West Los Angeles; and
- ◆ The Innovation Village adjacent to CalPoly Pomona.

Until one or more such projects materialize, the supply of lab space in the Los Angeles region is expected to be tight. ❖

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H-1B Visa

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indicated that it would continue to process petitions that were received before October 1, but would not accept any new H-1B petitions that were subject to the cap. It also announced that it would start to accept petitions for fiscal year 2006 on April 1, 2005, six months before the start of the fiscal year. Many employers expected that USCIS would receive enough petitions to exhaust the year's supply well before October 1, 2005, and thus made plans to file their petitions in April 2005.

Current Status:

With pressure applied primarily by the IT, semiconductor and engineering industrial sectors, especially the National Association of Manufacturers (which BIO has partnered with on H-1B visa issues since the mid-'90s), legislation was introduced in the 2005 Omnibus Appropriations Bill which was passed by Congress and signed by the President into law. This legislation made important changes to the H-1B and L-1 visa categories⁽²⁾.

First, new additional H-1B visas exempted from the annual cap have now been made available for up to 20,000 foreign nationals who have earned a master's degree or higher from a U.S. university. This exemption is vitally important for foreign nationals who graduated from U.S. universities during 2004 and are now working under F-1 or J-1 visa status with practical training authorization. This will benefit SCBC member companies and other biotech industry companies substantially, since as seen in our previous surveys, most of the biotech industry's H-1B workers have graduate-degrees from U.S. universities.

USCIS published regulations on May 5 announcing that it will accept visa petitions for the 20,000 slots starting on May 12, 2005. We expect that these 20,000 slots will be taken very quickly. Therefore, we advise SCBC companies to immediately contact their immigration attorneys if they wish to compete for these slots.

For companies having H-1B visa petitions pending for an October 1st, 2005 start date, or who have already received H-1B approvals with a start date of October 1st, 2005, the new regulations provide an opportunity to upgrade to an earlier start date if the H-1B beneficiary has a Master's or higher degree from a U.S. institution of higher education.

All of these petitions must follow special filing procedures outlined in the regulations. Additional information can be found on the USCIS web site at http://uscis.gov/graphics/publicaffairs/newsrels/H-1B_050504.pdf.

Second, employers also face sharply higher filing fees for H-1B petitions. Effective immediately, USCIS will require an increased training fee of \$1,500 for most H-1B visa petitions. The fee is reduced to \$750 for employers having no more than 25 full-time equivalent employees.

This fee will fund job training and scholarships for U.S. workers, as well as government processing of H-1B cases. Since 1999, more than \$500 million of such training fees have been collected by the U.S. Department of Labor (DOL) to fund new training programs that may eventually reduce dependency on foreign nationals. Unfortunately, these funds have yet to produce their desired effect.

Third, the Appropriations Act also imposed an additional \$500 "fraud prevention" fee for each petition seeking an initial grant of H-1B visa status or authorization to change employers in H-1B status. This fee does not apply to petitions to amend or extend H-1B status with the same employer.

These new fees are separate from the mandatory \$185 base fee for an H-1B visa petition and the optional \$1,000 fee for faster processing by USCIS.

Fourth, for H-1B petitions filed on or after March 8, 2005, employers must pay H-1B workers at least 100% of the "prevailing wage," which is defined as the average wage paid by other employers to workers with similar qualifications who perform similar duties in the same geographic area.

Confronting the Root Source of the Problem: Clearly, the H-1B visa route provides a temporary solution to shortages in the nation's biotech labor pool. These shortages are the result of an inadequate supply of trained U.S. nationals by U.S. institutions of higher learning. The reality is that universities have inadequate resources for expanding their industry training pipelines.

But even when they receive DOL training dollars, universities don't address the core problem: the insufficient number of U.S. students interested in pursuing a career in biotechnology. It is clear that creating graduate-level training programs will not reduce the demand for H-1B visa workers unless U.S. students choose to enroll in those programs. ❖

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