Opiant Pharmaceuticals: In the Front Line of Addictions and Drug Overdose

Cadex Genomics: Real-time Therapy Monitoring for Late Stage Cancer Patients

Biocom LA: Tale of 10 Incubators

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Greetings to all of our members across California and Japan, and welcome to our latest issue of LifeLines magazine! I’m excited about the growth Biocom has experienced since I last communicated with our membership through this column—it’s hard to believe that we are now approaching 1,300 members! This growth provides for greater group purchasing revenues that strengthen our Biocom programs across the board, and it has allowed us to add some stellar new representation to our prominent Biocom Board of Directors. As we grow, we will continue to deliver the value to our members for which Biocom is so well known.

Our theme in this issue of LifeLines is “humble beginnings”, sharing both the humble beginnings of our members and Biocom’s own humble beginnings in San Diego. I frequently find myself smiling when people who are new to the industry talk about the “overnight” successes of many of our companies. They are unaware that most of these successes are the result of many years of intensive research and development, funding challenges and just plain trial and error that we go through in drug development.

Modern biotechnology got its start in California in the 1970’s, in 1973 to be specific, when scientists first genetically engineered colonies of Escherichia coli bacteria to make them produce a foreign gene that made them antibiotic resistant. The scientists used the process of recombination to achieve this for the first time in the lab. In January of 1976, one of the scientists, Herbert Boyer, was contacted by Robert Swanson, a venture partner at Kleiner & Perkins. Swanson and Boyer talked for several hours and agreed to found a new company that could make the technology pay. By the time it was over, the two had made an initial agreement to make an investment of $500 each (the equivalent of $1,729 today). Boyer also came up with a name for the company: Genentech, derived from the words Genetic Engineering Technology. The rest of course is history!

Now the largest sequencing machine manufacturer in the world, Illumina Corporation began in 1998. Illumina was founded in April of 1998. While working with CW Group, a venture capital firm, Larry Bock and John Stuelapgam uncovered what would become Illumina’s BeadArray technology at Tufts University and negotiated an exclusive license to that technology. Jay Flatley joined as CEO in 1999. Illumina began offering single nucleotide polymorphism (SNP) genotyping services in 2001 and launched its first system, the Illumina BeadLab, in 2002. I can remember sitting with Jay in his conference room back in the early 2000’s each year being excited to hear about the progress Illumina was making toward doing whole genome sequencing!

The concept of an organization to represent the biotechnology and medical device community in San Diego was just getting off the ground back in 1988, with the creation of the Biomedical Industry Council by a small group of CEOs. I can remember hosting BIC meetings in our conference room at Mycogen where we discussed issues such as facilities permitting and environmental regulations that had an impact on our businesses. In 1995, BIC merged with the San Diego Biocommerce Association, a
service provider organization founded by Jim McGraw of McGraw Baldwin Architects, and hired its first two staff members. We gave the new Biocom San Diego office space at Mycogen for several years and when I joined in 1999 as the first President and CEO, we had a staff of six and roughly 200 members. We had a good number of committees covering key topics such as policy, facilities management, public relations and membership led by Board members, and our events schedule was limited to monthly member breakfast meetings and an annual conference called CalBioSummit. These concepts formed the foundation for the growth and popularity of Biocom in San Diego, an organization which today has a staff of 55 and offices throughout California, in Washington, DC and in Tokyo.

Humble beginnings for the California life science community and for Biocom have come hand-in-hand. We wouldn’t be where we are today without the support of our members through thick and thin, and I hear from many of our members that Biocom was there for them when they first began and that they haven’t forgotten how we have grown together in every way—from advocacy, to the ability to raise capital and with a growing global presence this California life science industry has no equal anywhere! You’ll read many stories in this edition of LifeLines that illustrate all that we are. Please enjoy it with my team’s wishes for your continued success in improving health and quality of life.

Joe Panetta
President and CEO, Biocom

California’s life science industry is a major economic engine driving the pace of innovation across the nation, attracting $4.2B in NIH funding, employing more than 428,000, and generating $85B in exported goods and services.

Visit www.biocom.org/eir to learn more about the powerful impact of California’s life science industry.
California's life science industry is a major economic engine driving the pace of innovation across the nation, attracting $4.2B in NIH funding, employing more than 428,000, and generating $85B in exported goods and services. Visit www.biocom.org/eir to learn more about the powerful impact of California's life science industry.

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California is the fifth largest economy in the world, leading the charge in everything from agriculture to entertainment—and the life sciences. Home to the world’s most impressive research institutes, early-stage biotech companies and pharma institutions, California has been responsible for major advancements that have shaped and defined our modern understanding of human health.

But it’s the sum of California’s individual parts that are responsible for this global impact. The state’s life science landscape is made up of three diverse regions that are each driving the industry forwards in their own never-before-seen ways. From San Diego’s robust ecosystem of experienced entrepreneurs, to Los Angeles’ recent influx of capital and support, to the Bay Area’s convergence of technology and science, each cluster is uniquely transforming the life sciences as we know them.

San Diego: From Incubator to Powerhouse
San Diego has long held a reputation as the incubator for big pharma. A robust ecosystem of experienced entrepreneurs has mastered the playbook of building lean businesses to establish proof of concept for innovative new therapies, selling those assets to pharmaceutical companies to ensure robust continued development and then starting anew. Yet more home-grown companies are reaching commercial stage, building robust workforces with deeper expertise in late stage development and commercialization. From biopharma companies like Halozyme, Acadia Pharmaceuticals and Neurocrine to sequencing powerhouse Illumina, San Diego companies are maturing in a way not seen for years, and this is building a deep bench of talent in product commercialization that has the potential to keep the region maturing for years to come.
Recent market research from IQVIA shows that this local biopharma trend is reflected in industry-wide numbers. No longer are big pharma companies the main owner of late stage compounds. In 2018, emerging biopharma companies—defined as companies estimated to spend less than $200 million annually on R&D and have less than $500 million in revenue—accounted for 72% of the total late-stage R&D pipeline.

“We have always had a lot of really good science in San Diego,” said Dan Bradbury, CEO of Equilium. “But I think market forces are allowing companies to grow towards commercialization more sustainably than could be achieved even 10 to 15 years ago.”

In addition to a robust talent pool and an increase in the number of resources like local outsourcing partners, economic trends are allowing the sustainable growth of late-stage companies, and this will only increase the health of San Diego’s life science industry and ensure that we see even more companies join the ranks of commercial life science companies.

“Years ago, companies were obligated to partner in order to bring their therapies to market, as there wasn’t as much capital flowing into local companies,” Bradbury noted. “We are in a golden age of biotechnology, and the opportunity to create new medicines with new technologies is so great right now, which translates into a robust investing opportunity.”

Los Angeles: Building Infrastructure and Inspiring Support

In the three years since Biocom opened its Los Angeles office, the conversation has shifted dramatically from “is there even a strong life science ecosystem in LA?” to “there has never been a more exciting time in the region.”

Growth in the last year alone has been significant. In September of 2018, Westlake Village BioPartners announced a $320 million fund devoted to life science investing with a focus on turning Los Angeles into the next biotech cluster. More incubators are establishing wet lab spaces in the county. And local government is getting behind biotech too, with the launch of BioLA, spearheaded by Los Angeles County Supervisor Mark Ridley-Thomas.

Los Angeles has long had the right mix of ingredients to build a vibrant life sciences ecosystem. A 2014 report from the Battelle Memorial Institute highlighted the region’s world-class clinical development and commercial talent to move here than it was say five years ago,” she noted and added that since she relocated to San Diego five years ago to take the helm at Halozyme, many of the resources that help enable sustained growth are building infrastructure locally. “I’ve also seen an increase in the number of contract and consulting organizations that have offices in San Diego. This speaks to the opportunity these companies see, and, for companies, local expertise for outsourcing projects makes the work easier.”

We are in a golden age of biotechnology, and the opportunity to create new medicines with new technologies is so great right now.

-Dan Bradbury, CEO of Equilium

SAN DIEGO

Trends Bradbury cited include a shift away from developing drugs for primary care indications towards more specialized indications that require a much smaller sales force. He also noted that with a number of companies in San Diego that have built teams in preparation for commercialization, there is a strong talent pool that will enable sustained growth of commercial-ready companies.

Helen Torley, M.B, president and CEO of Halozyme, echoed much of that sentiment.

“We’ve found in recruiting that it is easier to get late-stage...
academic research base, with more than ten local NIH-funded research centers which brought in nearly $1.1 billion to the region in 2018, according to Biocom’s 2019 economic impact report. And those research centers graduate a qualified base of talent that companies can conceivably tap. So what is happening now that is stimulating growth?

“In the last few years, I’ve seen a massive change in support for entrepreneurship at local research institutions such as UCLA,” said Farhad Parhami, Ph.D., founder, president and CEO of MAX BioPharma and a professor emeritus at UCLA. “In addition, we are seeing increased growth in the availability of lab space. Landlords have historically not been excited about lab space, but we are seeing that changing.”

The availability—or lack thereof—of wet lab space in Los Angeles has long stymied entrepreneurs looking to start biotechnology companies. Yet a new generation of leaders dedicated to supporting the growth of life science companies in the region is pushing to develop the spaces nascent companies need to prove their concepts and, hopefully, secure funding to get them to the next step.

Marie Rippen, Ph.D., CEO of LA-area incubator Lab Launch, notes that they were established in 2014 specifically to keep would-be entrepreneurs in LA.

“Our founder Llewelyn Cox decided to establish Lab Launch when two would-be entrepreneurs locally told him on the same day that they were leaving Los Angeles to head to San Francisco,” Rippen recalled. “Something had to be done to keep people here.”

LOS ANGELES

Since its founding, Lab Launch has added a facility in Chatsworth in partnership with ToolBox LA and contracts out with other incubators to lend their expertise. And other organizations are picking up the baton and establishing wet lab space that is designed to help companies once they graduate from incubators. One of those facilities is the Hatch lab. A soon-to-be resident company is TCRCure Biopharma, which recently raised Series A money to build cell therapy manufacturing.

“We decided to build our US-based manufacturing presence in Los Angeles,” said Paul Bryson, Ph.D., senior scientist at TCRCure Biopharma. “There is local expertise in this space, and we think that the region is a big draw for people interested in relocating.”

With commitments from venture capital funds to focus in LA as well as backing from local governments, how can the region continue its growth?

“We need to promote the message that biotech is thriving in Los Angeles and that we have the room for more companies,” continued Dr. Rippen. “Conventional wisdom said for so long that biotech doesn’t exist here, and we need to counter that idea. If we don’t evangelize LA biotech, growth will be more difficult.”

The Bay Area: A Marriage of Life Science and Technology

From Genentech to Apple, the Bay Area is home to two of the most innovative industries in our world today: life science and technology. For most of their respective histories, the two have been seen as individual entities, with little crossover existing between them. But as our knowledge of biology and the genetic underpinnings of disease continues to expand, technological applications in biotech are becoming more and more prevalent. On the other end of that, an increasing number of tech companies are breaking into the life sciences, creating new applications and digital health tools to better monitor and prevent disease.
The result? A unique convergence of disciplines that is propelling both industries forward in ways never before thought possible.

“In the last four years, the life science industry has been completely reformed, with technology making it possible to do biotech more chicly,” said Jun Axup, Ph.D., scientific director and partner at IndieBio, a life science accelerator that offers seed funding and a four-month program to startups interested in launching their early-stage scientific ideas out of the lab and off the ground.

Dr. Axup mentioned machine learning as one of these emerging technologies in biotech and healthcare, which is making an impact on everything from physicians’ medical records to drug discovery on small molecules.

Ben Hwang, Ph.D., chairman and chief executive officer of Profusa, a South San Francisco-based company developing next-generation biosensors that allow individuals to monitor their body chemistries in real-time, echoed many of Dr. Axup’s sentiments on the exciting ways the two fields are impacting one another. He elaborated on how health technologies and consumer technologies are converging, enabling individuals to manage their health outside of patient care. He noted that we have now advanced to the point at which we have more contextual understanding of the massive amounts of data these technologies generate.

“The thing that has always stood in the way of the digital revolution benefitting healthcare is how you take the volumes of health information that come out of our bodies and make rhyme or reason out of them. More contextual information exists now, allowing this data to become actually useful and actionable to physicians.”

While the effects of the marriage of tech and life science have been largely meaningful and impactful, certain key differences between the two industries remain. Dr. Hwang specifically described the very different paradigm for security, precision and accuracy.

“In technology, you can always make up for mistakes or errors in a second version. You can’t have that mentality in healthcare. There’s a different threshold for what’s acceptable.”

Dr. Axup pointed out the variations in complexity.

“One challenge of the merger is that sometimes the more tech-minded individuals may think of biology and cellular systems in an overly simplified way,” she noted. “For example, in machine learning, you want to build in a validation cycle that includes the actual biology in order to train your system. You can’t have the oversimplification.”

But despite these few disconnects and learning curves, the Bay Area is an illustration of the incredible strides and accomplishments that can be made when two opposing worlds collide. Dr. Axup captured why the region is uniquely poised to usher in these game-changing advancements.

“The Bay Area is multi-disciplinary in nature, and it’s easy to gain insights from a completely different sector. People move around a lot in both their social and professional circles: Everyone is separated by one degree of connection. There’s an entrepreneurship mindset here that’s driving the innovation.”
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This year’s Advocacy Fly-In to Washington D.C. provided life science companies two days of high-level meetings with senior officials in some of the most prestigious government institutions.

In 2012, Biocom teamed with BayBio and the California Healthcare Institute to pass and secure the Governor’s signature of AB 1277 by Assemblyman Jerry Hill (D-San Mateo), legislation which eliminated inspections by the California Food and Drug branch if those inspections were largely duplicative of ones done recently by the US Food & Drug Administration.

Biocom has also played a pivotal role in the passage of a state sales tax exemption for equipment used in life science research and development, and the shaping of drug price increase disclosure and drug/sharps takeback legislation.

In 2013, the Public Policy Department reallocated existing resources to establish a full time office in Washington DC. This office quickly became a valuable resource to our members, allowing us to advocate on their behalf and influence federal legislation, and to our San Diego Congressional delegation to which we serve as a source of information. Throughout the year, we host networking events and briefings, including in partnership with life science associations throughout the country, for Members of Congress and their staff. It has allowed Biocom more direct contact with the Washington offices of its members, while also creating an annual fly-in, which enables California organizations, often small companies, to meet with regulatory officials.
(including senior officials of the FDA, NIH, CMS and others) and key lawmakers.

In 2017, Biocom added a regulatory affairs manager to our Washington DC office, allowing us to focus on the interface of federal regulatory agencies and our members, and coordinating Biocom comments on regulatory proposals and guidances affecting the industry, such as the FDA’s new regenerative medicine framework or the Administration’s drug pricing blueprint. This enables Biocom to represent our member companies across the spectrum of ways government can affect their operations and very existence.

With all this, Biocom will never forget that we were founded on local issues and we remain uniquely committed to them. As we expanded to the Los Angeles and Bay Area regions, the first member committee we set up in each was a Facilities/EH&S Committee so we could engage and serve those people who are on the ground facing daily operational challenges. These committees and their associated programming have already been tremendously successful in both areas, especially those programs which have begun to bring industry and regulators together in a non-adversarial environment.

The trust engendered by these types of constructive dialogue enabled Biocom to create an award-winning regulatory compliance program in partnership with the County of San Diego. We are now laying the foundation so that this level of collaboration is the norm in other regions. We are still building our local advisory groups to educate, inform and shape Biocom’s direction in each of the three regions and we welcome your participation. We recognize that each of the clusters has very different regional needs and are committed to leveraging the strengths and accommodating the needs of each of them.

This brings us back to Biocom’s humble beginnings as a group of concerned leaders who identified an issue, rallied their collective power as an industry and achieved an outcome greater than if they had approached it as individual companies. The Public Policy Department attempts to honor that effort in everything we do, as it defines the essence and strength of Biocom.

Jimmy Jackson is the Senior Vice President and Chief Policy Officer for Biocom. He oversees government affairs and public policy for the organization.

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Always Stay Humble

In this issue of LifeLines, our members are sharing how their own humble beginnings have led to amazing products and therapies. Consequently, I wanted to shed light on the humble beginnings of Biocom’s Bay Area adventure. Perhaps our beginnings are best described as quick, decisive, and single-minded. We are hyper-focused on assisting companies that are trying to bring breakthrough products to market, and our own journey has been one of fast-paced boot-strapping and grass-roots development.

Having worked in a startup, I can attest to the fact that the challenges we faced in the early weeks, months and years were very similar to those faced by some of the entrepreneurs we represent. And some of the lessons I learned at the startup—say “yes” to everything because you never know where it will lead, be fearless, go fast and be ready to make a few mistakes—were equally applicable and helpful in quickly getting us to where we are today.

When I joined Biocom in the fall of 2016, we had about 90 members in the Bay Area, most of whom had joined to gain access to our Beyond Benefits healthcare trust or our new group discount program with Thermo Fisher Scientific. They were eager to engage on a deeper level. Our two offerings provide significant cost savings to companies who enroll. My job was to support these members and make them aware of the many additional membership benefits available. The initial challenge was, all the other Biocom member benefits were located in San Diego, our headquarters and home for over 20 years. With my colleagues in San Diego, we worked to quickly overcome that—and we did.

I learned from Biocom’s CEO that building a successful life science cluster required listening. So, I visited a lot of companies, potential partners, and key stakeholders on a listening tour. The needs of the Bay Area are unique and I learned that by lots of one-to-one conversations. Getting out and visiting our members was the best way to really get a sense of what’s going on in the Bay Area life science ecosystem. We eventually started doing “Monthly Meet Ups” around the Bay and inviting all life science stakeholders to join us. And the network started to build.

Early on, we had the very good fortune to connect with representatives from the cities of Fremont, Newark, Berkeley, Emeryville and Hayward, as well as the East Bay Economic Development Alliance. This allowed us to really get a sense of the East Bay and to understand the breadth of life science activity taking place in Alameda and Contra Costa counties.

Meanwhile, I spent a lot of time in South San Francisco—considered the epicenter of biotech activity in the Bay Area (and maybe in the world). Biocom has had a long relationship with the city’s Economic Development team, including as partners in the California Pavilion at the annual BIO conferences. The South City EDC team and City Manager’s Office are amazing partners and have set the standard for how a city attracts and supports life science companies. They have been abundantly generous and welcoming to Biocom and our efforts to support our members in their fine city.

It’s been amazing to learn about all the extraordinary research and innovation occurring in the Bay Area. We immediately bring this insight and knowledge to our many influential elected and non-elected officials at the state and regional level. Our industry is working on (some would argue) THE most important problems facing humankind. My goal—and Biocom’s goal—is to make sure these cities and counties know about the critical work taking place all across the Bay.

We now have 300 members in the Bay Area and a beautiful office in South San Francisco. We host events all around the Bay and offer a wide array of benefits to our members. Our real goal, however, is to always stay humble and continue to listen to what our members are telling us so we can, in turn, provide the most value back to them.
Tale of 10 Incubators

I have reported frequently on the increase in investment capital based in or attracted to the life sciences industry in the greater Los Angeles area, which is critical for propelling us to the next level of growth in the region. As a growing regional cluster, the LA area is adding many resources and programs through partnerships and investments by public and private sources. We recognize that in addition to capital, appropriate physical spaces for our companies to grow is imperative, which is why I’d like to dive into this topic a bit more.

As we all know, the right wetlab space in the right location is a key ingredient to growth of a regional cluster. And, as always, the LA area has to forge its unique path to developing the resources we need. Rather than a small number of larger incubators placed geographically close to each other, over time we have developed a series of unaffiliated incubators across the region that serve people more locally. I think it is generally recognized that incubators must be placed near sources of innovation, such as world class universities and research institutes. Since those are spread out around LA County, so too must the incubators.

I feel comfortable saying that by the end of the year, the LA area will have sufficient incubator space for the current stage of our cluster growth—feel free to disagree, I would enjoy

By Dina Lozofsky,
Executive Director, Biocom LA Office

Representative Judy Chu visited Pasadena BioCollaborative Incubator for an inside look at the facility and to learn more about the life science industry.
Dina Lozofsky is Executive Director of Biocom’s LA office and leads Biocom’s programming and benefits efforts in the growing LA life science industry and helps raise awareness surrounding the regional cluster’s many research accomplishments.

the conversation! But, you might ask, “how did we get here?” It has been a long road. 15 years ago, LA County had one active incubator, Biocom member Pasadena BioCollaborative Incubator (PBC), which was founded in 2004. The longest operating incubator in the region, PBC has hosted companies spun out of all the major institutions in the region, but this was not sufficient to support the recent explosive growth and was impractical for researchers spinning out companies from across the region’s innovation centers.

Where there is a recognized gap/business opportunity, someone will fill it! With the rise of investment and a growing critical mass of interest in Los Angeles as a life sciences cluster, we have added nine more of these facilities around the region in the last three to five years, including Biocom members Lab Launch (with two facilities), Mothership Labs, Magnify (at UCLA), BATTS, LA BioSpace (at CalState LA, opening later this year), and BioLabs LA (you can read more about the recently opened BioLabs LA at the Lundquist Institute on page 24).

Mapping out the locations of the incubators, you can see a patchwork of locations serving our far-flung industry, which is spread out around the full 4,800 square miles of LA County.

The next step for the region—definitely step up the space! Now that we have a great inventory of incubators in the region, we need to grow the inventory of spaces for these startups to graduate into. We are starting to see an increase in the square footage available, and we hope to see a lot more in the near future to allow for continued development.

Up until recently, LA’s first and longest operating incubator, Pasadena Bio Collaborative Incubator, was the only way for startup companies to grow.

The map above shows the 10 incubators that are currently located in the Los Angeles area to support early stage companies.
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Illumina has always been rooted in openness, collaborating deeply, and seeking alternative views and perspectives to propel innovation in genomics. Our organization is passionate and purposeful about sourcing and selecting diverse talent at every level of the organization, while our leadership is highly focused on cultivating an environment in which everyone fully contributes to our mission to improve human health.

Competition for talent continues to increase, and it’s important for all companies to look beyond traditional resume reviews and recruiting processes for great talent. California, and San Diego especially, has a very strong military presence. Veterans are an important talent population. From their extensive skills, to their mission-driven work ethic, we recognize the importance of connecting with this population to fulfill our talent needs. At Illumina, we are continuously implementing ways to connect with this demographic.

One such way that we’ve begun to connect with our military community is through our partnership with the Biocom Institute Veterans Initiative. This program is designed to expose veterans to the life science industry, and to prepare them to transition to the life science sector after their service. The informational symposiums, mentoring programs, mock interviews, and career fairs prepare veterans for our fast-paced industry. At Illumina, we have a strong veteran employee population that we are continually looking to grow. In our partnership with Biocom Institute, we saw a great opportunity to support this important veteran community, our life sciences industry, and to connect to the extensive veteran talent that exists in San Diego.

We have a strong team of Illumina veteran employees involved in the Biocom Institute Veterans Initiative, including committee members, mentors, career fair representatives, and event speakers. This year, we were thrilled to host Biocom Institute’s Spring Veterans in Life Science Symposium at our Illumina campus in May. This informational half-day forum gave veterans insight to the life science industry and the variety of careers within, cultivating a stronger connection with the veteran community and supporting the partnership we have with Biocom Institute. Veterans and veteran Illumina employees were able to connect, network, and understand first hand insights into life at Illumina, our culture and work environment. Additionally, veterans had the opportunity to connect on specific career areas aligned with their interests and experience.

The Biocom Institute Veterans Initiative is the perfect learning ground for our HR professionals to understand the unique qualities of veteran candidates. For example, in Talent Acquisition, we are looking beyond traditional titles, and working with veterans to uncover their transferable skills.

Biocom Institute’s dedication to connecting veterans to the life sciences industry in San Diego and the training and transition support they are providing is impactful to the success of our industry and our veterans. We are excited to continue working with them to support our hiring initiatives and our broader community.

There are numerous ways that other Biocom member companies can engage with this initiative and I hope that your company considers getting involved. From building mentoring relationships, to career fair table opportunities, your company can tap into this talent pool as well. If you would like more information on the important work Biocom Institute is doing and learn how you can get involved, please email Leandra Boysen at lboysen@biocom.org.

Karen Wetherholt is Vice President of Human Resources at Illumina.
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Life Science After Service: Helping San Diego Veterans Break Into Biotech

Life science and the military are synonymous with San Diego. To keep the region on the cutting edge of scientific and technological innovation, there needs to be a new pipeline of workers, and there is an excellent fit between the needs of the life science industry and the skillsets of transitioning military.

A recent study estimates 15,000 Navy and Marines, stationed in San Diego, are leaving service annually. 50% of these veterans and their families are staying in San Diego County. They deserve quality employment opportunities, like the ones available in the life science industry, to support their families. However, despite having the skills needed to be successful within this sector, most veterans lack the strategic connections and opportunities to successfully transition into civilian jobs within the life sciences.

Biocom Institute is working with passionate and motivated veterans looking for their next career move. These veterans have the skills and potential to succeed in a career within the life science industry. Additionally, these service members possess values and backgrounds that fit with the life science industry’s mission-driven culture. With cultivation of their networks, these veterans will soon be prepared to become your best resources, and Biocom Institute’s Veterans Initiative provides a multifaceted program designed to do just that.

The program begins with an informational and inspirational symposium that teaches transitioning service members about the industry—showcasing how they could each have a place within these growing fields. From there comes a multi-month mentoring program, giving committed veterans access to a bench of mentors—veterans who have already successfully made the transition into the industry themselves. Throughout the program, there is access to Biocom events, professional development workshops, and finally, a veteran-focused life science career fair to help place these determined individuals in front of hiring managers.

The difference that this program makes in these veterans lives is truly inspiring. A current BD employee and past program participant remarks: “By providing me access to Biocom’s events and networking opportunities, Biocom expanded my awareness of the breadth of work going on in the life sciences industry. Additionally, it helped me understand where my experiences fit as a transitioning veteran. I truly feel my experience in the Navy is a great fit for my current role.”

Not only is the life science industry changing the lives of the patients our products and services benefit, the industry changes the lives of those who gain the opportunity to contribute to its success. The Biocom member community continues to make a difference, and it is remarkable to see so many members come together to support and encourage those who have served us.

There are plenty of ways for the Biocom community to support or join this initiative, both at the company-wide and individual levels. The most recent symposium occurred in May, where veteran employees of various Biocom member companies volunteered their talent and time to teach others about this flourishing industry and shared their stories. Companies can sponsor the symposiums, the career fairs, and/or the initiative as a whole, enabling access to these services to hundreds of veterans throughout San Diego County.

Additionally, the upcoming Biocom Institute Charity Golf Tournament is a fantastic fundraiser for this initiative, and a
great way for Biocom members to engage and give back while supporting veterans interested in our industry. This tournament raises awareness of, and funding for, our Biocom Institute Veterans Initiative. The golf tournament will be held September 9th, 2019 at the private Santaluz Club in Rancho Santa Fe. With over 100 life science C-level executives, this tournament provides a unique setting to network with the distinguished leaders of our industry and support a worthy cause. Your generous sponsorships and tax-deductible donations will support job-skills workshops, industry-focused veteran career fairs and educational symposiums, and help fund the programming that allows for meaningful connections between local veterans and decision-makers in the life science industry.

Join us, Thursday, September 9th at the exclusive Santaluz Club for a day of golf, games and networking, all while supporting Biocom Institute’s Veterans Initiative.

Golfer or not—there are plenty of ways to get involved and support Biocom Institute’s Veterans Initiative! For questions and information, please contact Silvana DelPiccolo at sdelpiccolo@biocom.org.
Biocom’s Capital Development initiative was introduced as a part of a comprehensive Strategic Plan that was formulated and put into effect beginning in 2004. The decision to embark on this key initiative was driven by the obvious lack of life science focused capital providers based in the greater San Diego region and inability to service the local life science industry at that time.

San Diego had established itself as one of the top three life science clusters in the U.S. and had attracted significant outside investment capital—by some standards more than any other region. The problem then was that the vast majority of this capital came from beyond San Diego and our member companies needed more investment partners that had a local presence and interest in being involved in the resident operations of these portfolio companies.

Biocom took the initiative and started engaging with the investment community to foster relationships, building a campaign to demonstrate that San Diego was a place that they needed to be and Biocom was the organization to belong to.

In these early years, the focus was on visibility and building events to attract Investors. In 2006, Biocom launched the Investor Conference (San Diego’s life science community has over 500 companies producing lifesaving technologies and products to improve quality of life for patients. The Biocom Investor Conference will highlight investment opportunities in the region’s top life science companies to the nation’s top institutional and retail investors.) The event ran for four years and was later evolved into the Global Partnering Conference.

Another key initiative at the time was the creation of the “Why San Diego” campaign. This multi-faceted program was designed to highlight the many attributes of the San Diego life science community.

Recognizing the need for physical office space by out of town VCs traveling to San Diego to conduct business, Biocom then created the VC Suites.

Biocom as an organization, has and always will be incredibly responsive to the changing times and our members’ needs. As demonstrated by the Capital Development initiative, through the years, Biocom has altered its strategy and focus to ensure that programs being developed always take our members into consideration and provide direct ROI.

Pivotal Years for the Biocom Capital Development Initiative

In 2010, Biocom shifted the focus to actively engage out of region capital and directly connect them to companies/organizations. The emphasis was two-fold: first, directly securing capital for our members, and second, continuing to raise awareness around the depth and breadth of research taking place in San Diego. This marked the creation and launch of the Biocom Venture Days, where Biocom works with one or multiple investors identifying their key therapeutic areas of stage of development and then scheduling a series of one on-one-meetings for companies that fit that profile. From 2010–2015, Biocom held 12 Venture days with 28 VCs and scheduled 85 one-on-one meetings.

Then, in 2011, Biocom, along with four of our members, launched the Biocom Global Life Science Partnering Conference, an exclusive global partnering and networking forum that brings together senior executives and business development professionals from leading pharmaceutical and biotech companies. In the inaugural year, the conference had 224 registrants and featured 32 speakers representing big pharma companies from around the globe with 241 partnering meetings taking place. In 2019, now in its ninth year, the Global Partnering Conference sold out with over 300 registrants, 40 speakers and 651 partnering meetings taking place.

Starting in 2012, Biocom held the first Partner Day event.
Similar in concept to the Venture Days, Partner Days are held with a pharmaceutical or big biotech company and are composed of one-on-one meetings carefully curated to directly target the Partner’s key areas of interest. The first Partner Day was held with Alexion Pharmaceuticals with an emphasis on ultra-rare diseases. From 2012–2015, Biocom held four Partner Days with 27 one-on-one meetings.

2016 saw the addition of a full-time staff member dedicated to Capital Development, Oscar Rodarte. This was also the year that Biocom opened its Los Angeles office and placed staff in the San Francisco Bay Area. With the addition of Oscar and of staff throughout the state of California, Biocom was able to increase the number of programs that we run each year, highlighting innovation throughout the state and holding capital events in each of three key regions. With addition of new staff, the Venture Days program grew quickly from 2016-2018: Biocom held 12 Venture Days with 17 VCs and scheduled 111 one-on-one meetings. For Partner Days from 2016-2018, Biocom held 14 events resulting in 391 one-on-one meetings being scheduled.

Another key initiative launched in 2016 was the creation of the Biocom Life Science Catalyst Awards, an annual celebration of the most inspiring and driven young academics, entrepreneurs, investors, corporate leaders and business advisers who are making their mark in the San Diego life science community before their 40th birthday.

Since Biocom’s creation, Capital Development has and continues to be one of the main pillars of the organization driving value for members. The ability for Biocom to directly connect members to sources of capital and potential partners serves as a direct benefit of membership. Highlighted above are just a few of the programs that have been held through the years. The team, along with the Capital Development Committee chaired by David Kabakoff of Sofinnova Ventures and Carin Canale-Theakston of Canale Communications, continues to look for innovative ways to help our members accelerate their own success while showcasing the innovation that is taking place throughout the state.
Cadex Genomics: Real-time Therapy Monitoring for Late Stage Cancer Patients

Q&A with Bill Haack, Founder and CEO of Cadex Genomics

What motivated you and the team at Cadex Genomics to start the company?

The founders of Cadex Genomics had all worked in the cancer diagnostics space for the last 15 plus years, including the early days at Genomic Health where, as a team, we were successful in the global commercialization of Oncotype, the leading diagnostic for breast cancer. We shared a common view that many late-stage cancer therapy options are increasingly managed much like common chronic conditions, given the effectiveness of these therapies at extending life. At the same time, we were all keenly aware of the challenges of determining if late-stage cancer therapy, especially immunotherapies, are effective during the initial stage of treatment versus waiting 10 to 12 weeks to know more definitively if a therapy is working.

How did you decide to approach the technical challenges around determining late stage cancer therapy effectiveness?

The team of founders had worked closely with Dr. Gary Spitzer during his time at Palmetto/MolDx where he performed technical assessments of oncology-related molecular diagnostics for coverage determinations by CMS. We asked Gary about his ideas and he led us to Dr. Sudhir Sinha’s work with cell-free DNA. The next 6 months were spent evaluating the venous blood-based assay that Sudhir had developed and patented which we named Alibrex. In January of 2019, we closed on our angel seed funding round of $1.5M, invited Gary and Sudhir to join the company as co-founders, acquired the related intellectual property and commenced our multi-center, IRB-approved clinical valuation study for late stage solid-tumor lung and colorectal cancers. Recognizing the need to be a part of the largest life science trade organization in California, we then joined Biocom.

Every company seems to have a different experience when it comes to fundraising. How challenging was this process?

The angel round involved experienced investors with whom the team members had long-standing relationships, many of whom are also oncologists. The angel investors all recognized the potential clinical utility of Alibrex in terms of its ability to inform therapy decisions within two weeks after therapy commenced versus waiting the usual two to three-months for Response Evaluation Criteria in Solid Tumors (RECIST) results. Traction is building with present and future investors that our burn rate would be moderated by well-defined clinical and commercial milestones. Cadex Genomics currently operates from co-working space in Redwood City, California and uses outsourced lab services that are competitively priced.

Where is Alibrex in the assay development cycle?

We have completed analytical validation for the assay and have broad freedom to operate based on issued and pending patents. Our proof-of-concept clinical studies with MD Anderson and others provided compelling evidence in terms of specificity, sensitivity and positive predictive value for the assay. We use qPCR so the turn-around time for the lab results is fit for purpose—providers get results within 24 hours—with relatively low cost of goods enabling us to price Alibrex cost effectively. Our current clinical validation study will be complete in Q3/2019 enabling us to target a commercial launch in Q1/2020.

What other applications do you envision for Alibrex in the future?

We think Alibrex could be useful to pharmaceutical companies at various stages in clinical trials of cancer drugs, especially immunotherapy drugs where pseudo-progression is a common challenge. Once we have preliminary evidence from our current clinical validation study, we are likely to expand the study to include breast cancer.

Bill Haack is a founder and Chief Executive Officer of Cadex Genomics, a molecular diagnostics company bringing real-time cancer therapy monitoring and decision support to millions of late stage cancer patients and providers.
Serving Science Together

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Visit fishersci.com/biocom to learn more.
The Lundquist Institute for Biomedical Innovation at Harbor-UCLA Medical Center (Formerly LA BioMed)

In 1952, the Attending Staff Association at Harbor General Hospital (now The Lundquist Institute) was established to study the most difficult challenges in medicine.

Since that time, the impact of the discoveries made on the 72-acre campus that The Lundquist Institute shares with the Harbor-UCLA Medical Center has been absolutely astounding.

Brevity prohibits an exhaustive listing of the significant medical breakthroughs that have occurred at the Lundquist Institute, but the list below represents some of the dozens of commercially-relevant advances that have impacted clinical practice across the globe.

The Lundquist Institute is already one of the leading nonprofit independent biomedical research institutes in the country, and it is embarking on an ambitious, long-term plan to build on its storied history. With enhancements to the institute’s facilities, increased collaborative research, and added focus on product development and commercialization, more astonishing innovation is just around the corner.

A few months ago, a new state-of-the-art medical research building and bioscience incubator was opened on the Lundquist campus. The four-story, 78,000 square-foot facility contains both wet and dry labs, dozens of conference rooms, and a large auditorium. The third floor hosts an 18,000 square-foot bioscience incubator with over $1 million in shared equipment that will be operated by BioLabs. BioLabs LA at The Lundquist will host up to 30 bioscience startups.

In addition, The Lundquist Institute is in an Exclusive Negotiation Agreement with LA County regarding the potential development of a 250,000+ square-foot biotechnology park (the “BioCenter”) on 15-acres of the campus. This is consistent with the Battelle Report, which was a 2014 County economic development study that states, “research parks contribute to advancing regional innovation systems and regional economic development...by the creation of an environment that encourages innovation and entrepreneurship.” The BioCenter will be a perfect home for companies graduating from The Lundquist bioscience incubators as well as from the other incubators across the County. The BioCenter will also send a very strong signal to the scientific and life sciences business world that Los Angeles is no longer a bioscience “fly over” zone between San Francisco and San Diego.

Community support is responsible for many of our advancements and indeed, the new incubator was made possible by $6 million in donations from the LA County Board of Supervisors (spearheaded...
by Mark Ridley-Thomas) and philanthropists Melanie and Richard Lundquist, as well as a $800,000 equipment grant from the U.S. Department of Commerce Economic Development Administration. The Lundquists also recently announced a $70 million gift to help the institute undertake further discoveries and launch additional companies.

I moved from the biotech hotbed of San Diego to help grow The Lundquist Institute into a thriving center of bioscience commercialization and innovation. I also strive to assist others in their commercial efforts across LA County.

With the help of the Lundquists, LA County government, Biocom, the Larta Institute, LAEDC, BioLabs, and others, significant progress has been made to put LA on the bioscience map in a substantial way. I’m thrilled to be a part of The Lundquist Institute and the blossoming bioscience ecosystem in Los Angeles.

If you are not already involved in making LA a world-class bioscience destination, please join the effort!

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**Inside the shared lab space within BioLabs LA at the Lundquist. Interested companies looking to call LA home can now submit their application to be considered.**

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**MEDICAL BREAKTHROUGHS AT THE LUNDQUIST INSTITUTE**

- **1974** Dr. Fu, Sr. introduces a test for serum cholesterol still in use today.
- **1980** Dr. Jobe develops synthetic lung surfactants for premature infants.
- **1990** Dr. Isenberg invents low-cost eye drops that have been used to treat eye infections in millions of newborns.
- **1999** Dr. Kakosis develops Enzyme Replacement Therapy to treat Mucopolysaccharidosis (now FDA approved Aldurazyme® sold by Sanofi Genzyme).
- **2005** Kythera Biopharmaceuticals licenses LA BioMed/UCLA compound to eliminate fat deposits (now FDA approved Kybella® sold by Allergan).
- **2007** Dr. Edwards and team work on vaccine for nosocomial infections (now in Phase II clinical trial with spin-off Novadigm).
- **2013** Spin-off QT Medical develops portable, hospital-quality mini-ECG to test for heart disorders (now FDA 510k-cleared).
- **2014** Dr. Tsai identifies compounds to treat dementia and schizophrenia (now in Phase II/III trials with spin-off SyneuRx).
- **2017** FDA approves Endari®, developed by Dr. Niihara and spin-off Emmaus Medical, the first treatment for sickle-cell disease in almost 20 years.
- **2017** Launch of our first bioscience start-up incubator with outside companies taking residence in existing wet lab space on campus.
- **2018** Signing of an Exclusive Negotiation Agreement with LA County to potentially develop a 250,000 sq ft biotechnology park on 15-acres of the campus.
- **2018** Dr. Budoff’s spin-off BDI starts collecting clinical revenue and partners with Amgen to study bone density in diabetics.
- **2019** Partnership with BioLabs launched and a 18,000 sq ft state-of-the-art bioscience incubator opened.

**Keith B. Hoffman, PhD is the Vice President of Business Development and Technology Transfer for Los Angeles Biomedical Research Institute at Harbor-UCLA Medical Center.**
Opiant Pharmaceuticals: In the Front Line of Addictions and Drug Overdose

It was 2005. As a practicing ENT surgeon in the UK, I recall treating a patient with heroin addiction who had contracted a flesh-eating infection from a dirty needle. He was lying on a bed with his organs exposed and could only think about his next fix. I was deeply saddened but also inspired to make a more significant impact than treating patients with addiction individually at a doctor-patient level. I wanted to help them on a population scale. In time, from this vision, Opiant Pharmaceuticals was born.

Addiction is a Chronic Disease

Addiction is a term that we are all too familiar with these days. Despite what many people think, addiction is a medically-recognized, chronic disease of the brain. At Opiant, we believe all addictions—drug, alcohol, behavioral—should be treated like any other chronic condition. However, it is estimated that only 1 in 9 patients with addiction receive the appropriate treatment, an issue highlighted in the US Surgeon General’s landmark report in 2016. Why? The life sciences sector has historically not invested in developing medications to treat addictions. In fact, treatment options and R&D efforts for addiction pale in comparison to other chronic disease categories, even though more people are impacted. That’s right. More Americans suffer from addiction (40 million)[i] than diabetes (30 million)[ii] or cancer (15 million).[iii]

Thanks to the growing attention and support from government and institutional authorities, as well as payors, healthcare providers, patient organizations, and medical experts, this indifference is finally waning.

Addressing Growing Medical Needs

Seeing the need to help those suffering from opioid overdoses, Opiant developed NARCAN® (naloxone hydrochloride) Nasal Spray. The product went from concept to FDA approval in three years, and it is regularly used as the first line of defense to reverse an opioid overdose. However, the opioid crisis is changing. More than half of fatal opioid overdoses now involve fentanyl, which is 50x more potent than heroin. We are addressing this looming crisis, in partnership with the National Institutes of Health (NIH) and the Biomedical Advanced Research and Development Authority (BARDA), with the development of a new overdose antidote that is longer-acting and five times more potent than naloxone. It's fighting fire with fire.

Another growing medical need that Opiant is aiming to serve is acute cannabinoid overdose (ACO). ACO is most frequently linked to the ingestion of “edibles” containing large quantities of Δ9-tetrahydrocannabinol (THC) and synthetic cannabinoids that are more potent and less expensive than marijuana. It is estimated that ACO resulted in more than one million emergency department visits in the United States in 2016. While not as life-threatening as an opioid overdose, rates of ACO are expected to rise with increasing legalization of marijuana in North America, and there are currently no approved treatments. We aim to fill this void with OPNT004 (drinabant), a newly acquired asset from Sanofi that is being developed for use in an emergency room setting to treat ACO.

Looking Ahead

As the number of people with addictions increases, so will the demand for solutions and the ambitions of the team at Opiant to create best-in-class medicines for the treatment of addictions and drug overdose. To learn more about Opiant’s pipeline, visit Opiant.com.
Don’t miss the following Biocom events happening across California:

EH&S Committee & Occupational Services Inc.
Business Continuity Presentation
June 6th | Biocom Offices, San Diego
San Diego, CA

Lunch & Learn: “How Healthcare IT Delivers the Right Treatment”
June 11th | CHLA
Los Angeles, CA

Venture Day with Medicxi, Venrock & Osage University Partners
June 19th | The Alexandria at Torrey Pines
San Diego, CA

Biocom CEO Reception
June 19th | Estancia La Jolla Hotel & Spa
San Diego, CA

Capitol Hill Life Science Reception
June 19th | Tortilla Coast
Washington, D.C.

Biocom Open House & Supplier Showcase
June 20th | Farmer & The Seahorse
San Diego, CA

Annual Biocom PAC Legislative Staff Appreciation Reception
June 24th | HATCH (New multi-tenant lab space)
Los Angeles, CA

USPTO & FDA Workshop
July 15th | Biocom Bay Area Office
Bay Area, California

Navigating China’s Life Science Market
July 17th | Biocom Bay Area Office
Bay Area, California

EPIC+ Workshop
July 23, 2019 | Alexandria at Torrey Pines
San Diego

Biocom CFO Breakfast: Do You Have What it Takes to Join a Board
July 24th | The Alexandria at Torrey Pines
San Diego, CA

Biocom Los Angeles Open House + Supplier Showcase
July 25th | Location TBD
Los Angeles, CA
Imagine searching online for some important information, but the search engine you use takes days to return your results. That would be useless, right?!

Today we all enjoy instant access to traffic information, web banking, social media connections and everything else on the internet.

But no one has instant insight to their biology. Knowledge about your current health or food quality could take days or weeks, often so long that the answer comes too late to take action.

Our bodies know when we’re sick long before any lab test could; why can’t we? It turns out that no technology could provide instant knowledge about this important information.

Solving a technology paradigm problem of this magnitude takes new thinking and the unbreakable spirit of startup people. Where are the right people to build the “Internet of Biology” that could give us instant insight to biology like everything else in our modern lives? It turned out the winning team in that tech race started with a couple of San Diego natives in a garage.

I met Ross and Brett (the cofounders of Nanomedical Dx., now named Cardea Bio) more than five years ago, when they were pitching for early stage funding and support—while still working out of Brett’s garage.

We thought, “If only we could take optics out of life science projects so that the stream of data from the relevant biology could be much faster, cheaper, easier, cleaner, and more relevant.” Optical detection of biochemistry limits the potential of biology to match the modern data transfer pace (aka the problem described in the start of this article). Optics are the heart of bioanalysis from DNA sequencers to protein analysis instruments, but optics makes instruments big, expensive and hard to use as they require a ton of modification from the biology’s natural state in order for the optics to “see” what is happening.

We understood the issue at hand; the real problem was that we didn’t have an alternative.

But Brett had an idea.

Why not build a sensor that could record the molecular interactions directly instead of messing up the biology we cared about, only to make it easy to see it with optics?

It wasn’t perfect, and it took “only” 4-5 years of optimizing but we finally produced a commercially reproducible and consistent graphene biosensor that functions as it should and is created inexpensively.

Today, Cardea produces biology-based computer connected transistors at a scale that makes them commercially interesting to have inside of a new generation of “Internet of Biology” products.

We now have our way of asking and getting instant answers from biology and it’s all due to the strong effort of the core Cardea team and many loyal supports that never pulled their support away—even in the darkest hours.

It takes entrepreneurial minded groups of talented employees and investors with a goal greater than making money short term to make this kind of technology pan out. The Nanomed/Cardea group spent 4-5 years taking low salaries, high risks and leaned in to a degree where most people would just have given up.

You might have read about the first “Powered by Cardea”
Michael Heltzen is the Co-Chief Executive Officer for Cardea Bio and a past Biocom Life Science Catalyst Award winner.

product as it was featured here in a LifeLines article entitled “Democratization of Biosensing”. This first Internet of Biology product, which uses the graphene biosensors, is the Nanomed Agile (Nanomed is by the way a fully owned Cardea intrapreneurship group). The small, easy-to-use device allows pharma drug developers to do binding confirmation themselves on-the-fly, saving days or weeks.

The next “Powered by Cardea” product was recently announced (March 25, 2019)—this time made by an external Cardea partner called Nanosens Innovations Inc. The CRISPR-chip leverages the graphene biosensor combined with the CRISPR-cas9 protein complex, allowing the user to see “CRISPR at work” so that people can “Google a genome” without having to bring it to a lab instrument in real time—a game changer in a number of different industries.

Our lives have been transformed in ways unimaginable by the Internet; our biology is now becoming a part of that impactful network.

Please join us in building the next part of the internet and help us ensure we construct a strong foundation for the Internet of Biology.

Michael Heltzen is the Co-Chief Executive Officer for Cardea Bio and a past Biocom Life Science Catalyst Award winner.
Peripheral Artery Disease (PAD) is a common circulatory problem in which plaque builds up in the arteries and reduces blood flow, causing severe pain and cramping in people’s legs. PAD affects over 8.5 million patients nationwide and over 200 million patients worldwide.¹

The statistics around PAD are staggering: in the U.S. and Europe alone, PAD is responsible for 240,000 amputations every year². Nearly one-quarter of these patients die within 30 days, and almost half die³ within a year of their amputation. What’s more, people with diabetes have an especially high risk for PAD, and those with PAD have a higher risk of coronary artery disease, heart attack or stroke.

Enter DABRA Excimer Laser: for the past 40 years—from ophthalmology to dermatology to vascular—excimer laser technology has been utilized in a variety of clinical applications in practice today. After seeing the high, unmet need for a better PAD treatment we, at Ra Medical Systems, decided to create DABRA, which stands for the “Destruction of Arteriosclerotic Blockages by laser Radiation Ablation.”

DABRA is a minimally invasive excimer laser and disposable catheter system that is used by doctors to treat PAD. DABRA is unique, because it reduces all plaque types into their fundamental chemistry, water, proteins, lipids and gases, eliminating blockages by dissolving them.

Additionally, DABRA uses non-thermal photochemical plaque ablation to remove plaque and clear blockages with no unwanted acoustic, mechanical, or clinically significant thermal byproduct. Unlike many treatments for PAD that risk arterial wall injury, DABRA dissolves plaque with minimal vascular trauma.

The power of DABRA really hits home when we look at one California patient’s recent treatment experience. After suffering blood clots and developing PAD, Jay, a 68-year-old male and avid golfer and tennis player, was told by his physician that the only option for treatment was amputation. For someone as active as he, the news was devastating.

Luckily, Jay was referred to Athar Ansari, MD of the California Heart & Vascular Clinic and immediately underwent the DABRA procedure, which resulted in restoration of blood flow in his leg. Against all odds, he was back to playing tennis just days later.

Since its FDA market clearance in May 2017, DABRA has been saving limbs all over the world. Our team at Ra Medical Systems leveraged innovative, out-of-the-box thinking to tackle PAD with DABRA, and since our inception, we have invested significantly in research and development.

At the same time, since our inception in 2002, Ra Medical’s overarching vision has always been to develop better, safer, faster, and less-expensive treatments. Through our work with DABRA, our goal is to empower interventionalists everywhere to perform procedures in accessible, outpatient settings, dramatically expanding access to care for people who live in remote areas.

DABRA’s early adopters are changing the way PAD is treated nationwide, saving limbs and improving lives through expanded access to care. Two key interventionalists speak about their experience with DABRA.

Sources:
1 https://www.heart.org/en/health-topics/peripheral-artery-disease/pad-resources?s=q%253D200%2526sort%253Drelevancy

![Before and after of an artery treated using the DABRA excimer laser.](image-url)
“DABRA is fundamentally changing the way that I practice medicine,” said Dr. Ansari, who practices in El Centro, California. “DABRA can treat all types of plaques in arteries both above and below the knee. Best of all, patients are discharged in just two to three hours, allowing them to quickly return to their daily lives.”

Charles Bailey, MD, of the Heart Endovascular and Rhythm of Texas in San Antonio, Texas, said “DABRA has given me a treatment for PAD that is safe, versatile and efficacious. With the high rates of the disease in my San Antonio community, DABRA has allowed me to save limbs and deliver improved quality of life for my patients.”

Today, we are proud that Ra Medical is bringing DABRA to office-based interventional suites throughout the U.S. and around the world. It is our mission to help every individual suffering from PAD with this transformative new technology, helping our valued physician partners save their patients’ limbs and lives.

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Deliver partnering strategies and action plans (exploratory, narrow, or structured that reflect the needs and aspirations of all parties)

Grow relationships to create long-term value

The USC MESH Academy Business Development and Industry Relations team provides a holistic approach to meeting academic and business needs that go beyond a single-transaction experience.
ANNUAL BIOCOM GLOBAL LIFE SCIENCE PARTNERING CONFERENCE
From February 26th–February 28th, Biocom hosted the sold out premier partnering event with attendees who came from all corners of the country and the world, representing 10 countries and 19 states. The conference’s packed agenda kicked off with pharma heavy hitters discussing ‘The Future of Deal Making’ while later in the program biotech executives shared “What’s Hot” and touched on anti infectives, neuroscience, cell therapy, and CRISPR. Guests were treated to a sunset overlooking the ocean on the lawn at The Lodge at Torrey Pines during the evening reception.
Your science is critical...

...thank you for your trust.

Our entire team thanks the more than 100 life science clients that trust us everyday with their security needs.
SAN DIEGO FESTIVAL OF SCIENCE & ENGINEERING EXPO DAY
A little rain didn’t prevent more than 20,000 students, parents, teachers, and life science professionals from heading over to Petco Park in downtown San Diego for a day of interactive demonstrations, hands-on activities and dynamic speakers to engage kids and families in all that encompasses STEAM. Several Biocom members had booths at Expo Day showcasing the work they do, answering questions about careers in life sciences and explaining their company’s worldwide impact.
We’re making history for her

As the US leader in the field of cannabinoid prescription medicines, we’re not just changing an industry – we’re changing lives. Because at Greenwich Biosciences, our groundbreaking work fulfills our mission of helping patients who have limited or no treatment options.

Lily, living with a rare disease.

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PREMIUM MEMBER SPOTLIGHTS

**Name:** David Jean Charlot, PhD  
**Title:** Chief Executive Officer

Favorite book: *The Great Gatsby*  
Favorite TV show: *The Wire*  
What music can we find you listening to?  
Anything from FKJ (French Kiwi Juice), Masego, and Mos Def

If you could meet one famous person, who would it be? Barack Obama  
What was your first job? Cart Boy at the Patch Barracks base commissary in Germany  
What is the best part of your current job? Learning from others. I share my knowledge of bioengineering and hear from my interested customers how industry challenges can be solved with technology.  
What should Biocom members know about your company? CBio uses innovative electric field based microfluidics solutions to help companies cleanup environmental waste and study microbiology bias-free.  
If you could have another career, what would you choose? Host for science themed comedy show on Netflix  
Why did you start working in the industry you’re in? Hurt my ACL playing a pick up game of basketball in college. I switched my major from accounting to physics after learning about disparities in medical technology access at hospitals.  
Best tip for someone working in your industry: Persistence is key. Everyone agrees how dots connect after you’ve show them.

**Name:** Catherine Hanley  
**Title:** Vice President, Marketing

Favorite book: *Blue Ocean Strategy*  
Favorite TV show: *Mad Men*  
Favorite restaurant or meal: Anything Mexican  
Favorite technology, program, or app: GPS

If you could meet one famous person, who would it be? Michelle Obama  
What was your first job? Cell Therapy Lab Technician  
What is the best part of your current job? Building successful teams.  
What should Biocom members know about your company? Alcami is an end to end supplier offering VIP service to all customers.  
If you could have another career, what would you choose? Olympic diver  
Why did you start working in the industry you’re in? I wanted to be a part of improving and saving lives.  
Best tip for someone working in your industry: Work hard, hustle, and never burn bridges. Success is all about building relationships regardless of what industry you’re in.

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- Ernst & Young
- Ferring Research Institute
- Fisher Scientific
- Hologic
- Illumina
- Ivantis
Name: Simon Terry-Lloyd
Title: Managing Principal
Favorite movie: Monty Python and the Holy Grail
Favorite restaurant or meal: Pacific Coast Grill in Cardiff
A quote I live by would be: “Integrity is doing the right thing, even when no one is watching” – C.S. Lewis
What music can we find you listening to? Cody Jinks
Favorite technology, program, or app: Apple CarPlay—I’m in the car a lot
If you could meet one famous person, who would it be? Winston Churchill
Favorite hobbies you enjoy: Spending time outdoors with family and friends.
What was your first job? I started mowing the neighbor’s grass when I was 11 and never stopped working.
What is the best part of your current job? The people, both at Cresa and our clients.
What should Biocom members know about your company? Cresa is the preeminent commercial real estate firm focused exclusively on representing corporate occupiers. With over 80 offices and 1,200 employees throughout the globe, we service our clients wherever they need us to be.
Why did you start working in the industry you’re in? To serve others.

Name: Hai Blankinship
Title: General Manager
Favorite movie: I love most chick flicks – Pride and Prejudice with Keira Knightley
Favorite book: The Rosie Project by Graeme Simsion
A quote I live by would be: Do something hard every day.
Favorite restaurant or meal: Sushi or Mediterranean Food
What music can we find you listening to? Any type of music from Yo-Yo Ma to Adele to Chromatics to Alabama Shakes to Bob Marley.
If you could meet one famous person, who would it be? Queen Elizabeth
What was your first job? At 15, I worked at a local dry cleaner as a cashier.
What should Biocom members know about your company? Longfellow partners with leading universities, institutions and companies to deliver holistic real estate solutions for life sciences and technology organizations. We invest in and develop real estate assets to create transformational work environments. We also provide leasing, facilities and property management services for our tenant partners.
If you could have another career, what would you choose? I would be a wine and cheese maker.
Best tip for someone working in your industry: I’m passing along a tip that someone once told me and I’ve met some truly great people along the way because of it. Every person you meet is a potential door to a new opportunity—personally or professionally so don’t be shy, smile and say hi.
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Alcatel-Lucent
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Bayer
Biogen
BioLabs San Diego
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Ansun Biopharma
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Ascendis Therapeutics
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BriGene Biosciences
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Bristol-Myers Squibb
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Cairos Biosciences
CalcMedica
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