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The power of partnerships

In the future, historians may point to the present day as the start of the new technology-driven industrial revolution. Twenty years ago, how many of us could have imagined 3D printing, driverless cars or shopping for items using smart phones?

We see economic transformation in the success of business incubators and accelerators supporting entrepreneurs across the East Bay. We see it in the way research institutions support commercial applications for new products and services. We see it in how companies are bringing back their off-shore manufacturing to protect intellectual property and position themselves for more efficient changes. We even see it in the pressure our incredibly successful regional economy is putting on housing and transportation.

These examples are just indicators. In some traditional industries, building a new factory is sufficient to attract workers. In an economy based on disruptive technology, it’s the reverse – talented workers live where they choose and companies go where they can find them.

This new, knowledge-driven economy depends on an entirely different foundation than the one we knew a few decades ago.

While the emerging economy requires research and development, it also requires a culture that supports diverse entrepreneurs who have the courage to try new things and learn from mistakes. Innovation and its financing in today’s world are not nurtured by conventional thinking. Funding innovation requires risk takers who accept that only a small percentage of the can’t-miss, never-before-seen goods and services they fund will succeed in the marketplace. Most competitive regional economies will require supportive government, education and workforce partners that recognize the value of collaboration. These cross-sector institutions understand that diverse thinking and input make for better products, applications and services.

As part of the Bay Area’s world-renowned economy, the East Bay has all the basic infrastructure to significantly grow its share of creative growth companies. However, without the ability to constantly replenish and upgrade the most basic resource, our local workforce, the East Bay’s growth – not only in tech, but in all industries – will be severely limited. Increasingly, doctors, artists, office workers, business owners, metal fabricators and others are required to have a foundation in science, technology, engineering and math (STEM). Without the proper workforce, any tech company, specialty food company, streaming music company, health care organization or almost any other type of company will face not only limits to innovation, but limits to growth.

It is therefore critical that we promote our regional partnerships between business, government and education. The cross-sector convener that the East Bay Economic Development Alliance (East Bay EDA) has been for more than 25 years, and its leadership, must push us forward through this next period of economic promise. We need to continue to find creative ways to strengthen collaborations among our diverse institutions to realize our full potential and be competitive in the global market of the future.

Our 2016 Innovation Awards Legacy winner, the University of California, Berkeley, exemplifies the extraordinary achievements that can be realized when business, government and education work together. This premier research institution is a major source of new technology, as well as a source of graduates and post-doctoral fellows highly trained in new technologies and full of new ideas. Indeed, past East Bay Innovation Award finalists and 29 Nobel Prize winners have been proud Cal graduates.

Join me in thanking our prestigious judges, facilitators and generous sponsors whose support and contributions to the 2016 East Bay Innovation Awards have enabled us to market the unique East Bay culture – a culture that is responsible for our remarkable record of innovation and business success. We must also thank the San Francisco Business Times for providing us the opportunity to tell these stories of success and share the power of partnerships with a whole new generation of leaders.

Hon. Keith Carson is Chair of the East Bay EDA, and serves as the Supervisor of District 5 in Alameda County. To learn more about East Bay EDA and the assets of the East Bay, go to www.EastBayEDA.org

About the East Bay Economic Development Alliance
The East Bay Economic Development Alliance (East Bay EDA) is a public/private partnership serving Alameda and Contra Costa Counties. We are the regional voice and networking resource for strengthening the economy, building the workforce and enhancing the quality of life in the East Bay.

We welcome your engagement!

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Keith Carson Chair, East Bay Economic Development Alliance, District 5 Supervisor, Alameda County
Want to learn more about why innovation is contagious in the EAST BAY?

CONTACT US!

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3 NATIONAL LABORATORIES

LAWRENCE LIVERMORE NATIONAL LABORATORY
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LAWRENCE BERKELEY NATIONAL LABORATORY
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Innovation gives the East Bay its competitive edge

BY CAROL PIASENTE

A spirit of innovation and entrepreneurship is the hallmark of the Bay Area economy. Brilliant researchers, inspired inventors, visionary business leaders, savvy marketers and venture capitalists eager for a new win populate a startup culture that rewards risk taking and creativity, and encourages launching new ventures.

A wealth of creativity

The enthusiasm for finding new solutions and the talent to develop ideas “from the lab to the marketplace” is what gives the East Bay its competitive edge.

“When you talk about innovation, you need to be able to hire the people who can look at a product and reinvent it,” says Kevin Kelly, CEO of Emerald Packaging. “The East Bay pulls in those kind of people.”

“Talk to 10 entrepreneurs, and you’ll likely get 10 differing views on innovation,” says Energy Recovery President & CEO Joe Gay. But most 2016 East Bay Innovation Award honorees would agree with CEO, of Caribou Biosciences, who says, “Innovation is not just about the next step in a linear process of development, but something that’s transformative and outside the box.”

Business needs to innovate

In today’s marketplace, companies have no choice but to innovate, says CallidusCloud Chief Marketing Officer Giles House: “Customers don’t want you to stand still. But innovation doesn’t need to be a brand new product. Innovation can be taking an existing product and improving on it with amazing new features and faster delivery.”

Silicon Nano CEO Gene Berdichevsky reminds entrepreneurs – and those thinking of taking the plunge – that it’s critical to be passionate about what you do, because when the going gets tough, you have to be willing to stick with it.

“Understanding the problem, and what’s hard about solving that problem, is where innovation starts,” says Berdichevsky. “Just because others haven’t succeeded should be no barometer of whether it’s solvable or not. You have to believe you can do it.”

Business of business is business

“The main advice I would give to someone just starting out is to remember that ‘the business of business is business,’ says Corey Rennell, CEO of CORE Foods. “There’s more to it than a great idea. You have to be prepared to learn the ins and outs of human resources, financing, sales, marketing, going public – all things that may seem far removed from your core passion.”

“You also have to be prepared to say ‘no,’” he adds. “You have to keep your focus and be really clear about what things you do not want to do.”

Making lives better

There is widespread consensus that “innovation is going a step beyond the new technology and really thinking about how its going to actually make people’s lives better,” as Motiv Power Systems Jim Castelaz describes it.

“It’s incredibly satisfying to be at the epicenter of a culture that’s leveraging great new technology to make a large impact on people’s lives,” says Castelaz.

The desire to make a difference is also strongly reflected in the growing trend toward innovative, social enterprise business models like The Bread Project.

“For me, innovation means coming up with solutions to society’s most pressing problems and being persistent in tackling those issues with new ideas,” says Alicia Polak, The Bread Project’s executive director.

“In addition to being a visionary, you have to be concerned with the practical implementation of your vision. To be an innovator, you have to be willing to buck the trends.”

While many innovators share a commitment to making the world a better place, Dr. Venkat Srinivasan, a staff scientist at Lawrence Berkeley National Lab, says that coming from an academic setting it’s not always obvious what impact an innovation may have.

“In response, Srinivasan convened the CalCharge consortium to “use our expertise and resources to help companies be successful.”

Another important difference between national labs and startup companies is the pace of research and development, explains Srinivasan.

“Companies have a very fast timeline to prove the worth of their enterprise. They’re up against funding challenges and boards who want to see results. If LBNL was to help, we needed to cut what can be a very long and drawn out engagement process.”

East Bay manufacturing

Two important developments – specialized manufacturing and public-private collaboration to advance technology for the public good – are taking hold in the East Bay and stimulating economic prosperity.

While the East Bay, anchored by the Port of Oakland, has been the historical center of industrial activity in Northern California, the region’s diverse manufacturing sector is undergoing a transformation. Drawn in by lower rents, access to national and international markets, demand for services and the large pool of highly skilled workers, East Bay manufacturers are growing in numbers and influence.

The advanced manufacturing taking hold in the East Bay consists of more than making high-tech products. It also includes using new, cutting-edge machines and processes to make products that are unique, better and sometimes even cheaper.

East Bay manufacturing encompasses electronics, lighting, metalworks, artisan food production, medical devices and biotech, and, as Motiv’s Castelaz says, “there’s even automotive and aerospace in the Bay Area now.”

East Bay companies are “leveraging advanced technology and streamlined design to offer a more efficient manufacturing path,” says Stan Sutton, president & CEO of Inland Metal Technologies.

New ways to get it done

Sometimes innovation is not in the invention of new products, but in creating new ways to work together and take advantage of current technology.

Gary Darling, general manager of Delta Diablo, led the formation of the Bay Area Biosolids to Energy (BAR2E) Coalition, a public-private partnership that’s serving as a kind of “tech incubator in the service of the public good.”

“We’re taking carefully calculated risks to open up public facilities to test out and adopt leading technologies that have the potential of advancing wastewater treatment, clean tech and energy in the Bay Area.”
UC Berkeley powers innovation & economic growth

The University of California, Berkeley, widely respected as the top public university and one of the leading research universities in the world, is powering innovation, entrepreneurial and economic growth in the Bay Area and beyond.

Berkeley graduates, faculty and other affiliates have been translating knowledge into products and services and founding companies since the university’s beginnings.

With more than 25,000 undergraduate and 10,000 graduate students in almost every major field of study and a faculty that has included 22 Nobel winners, seven of whom are currently active or emeritus professors, “Berkeley plays a pivotal role in the Bay Area’s innovation ecosystem,” says Darien Louie, executive director of the East Bay Economic Development Alliance.

“Many of the companies we’ve recognized for innovation have their roots at UC Berkeley.”

More than 2,610 firms – 55 percent of which are in the Bay Area – can be counted as UC Berkeley spinoffs. They’ve created more than 540,000 jobs and global revenues in excess of $317 billion, according to a 2014 Bay Area Council Economic Institute study.

Manufacturing and computer systems top the list of the most successful UC Berkeley spinoffs as measured by jobs and revenues. Stellar examples include former and current East Bay EDA Innovation Award honorees Tesla Motors and Sila Nano.

UC Berkeley’s entrepreneurial ecosystem
The groundwork for new industries emerging from UC Berkeley is laid by enterprising students and faculty supported by a broad entrepreneurial ecosystem: policies that allow for the licensing of technologies developed on campus, collaborative partners, specialized programs for developing startups skills, successful role models and an array of incubators and accelerators.

Bay Area startups also benefit from access to capital. Forty to 45 percent of all venture investment in the U.S. takes place within an hour’s drive of UC Berkeley.

No less important is the spirit of entrepreneurship that pervades the region, where the acceptance of risk (as well as reward) and a vigorous startup culture encourages creative people to found companies,” says Sean Randolph, senior director of the Bay Area Council Economic Institute.

“The technology and companies incubated at UC have a direct and critical impact on the state’s economic growth, and our continued support is integral to our university’s public mission,” says Napolitano.

Collaborative partners
UC Berkeley’s research in basic science and commercialization of new technology are amplified through its relationships with the region’s national labs, including Lawrence Berkeley, Lawrence Livermore and Sandia National Laboratories, the Joint BioEnergy Institute, and other Bay Area research universities.

R&D innovation
Berkeley researchers have more than 1,550 inventions to their credit and hold more than 1,300 active patents.

Since the founding of IPIRA, UC Berkeley’s Office of Intellectual Property & Industry Research Alliances, more than 800 companies have sponsored research at Berkeley. Berkeley’s IP licensees have commercialized more than 600 products, with dozens more in the R&D pipeline. More than 175 start-
ups have been founded specifically to commercialize a licensed patent.

Examples abound: A host of software firms, from Sybase and Oracle, to PeopleSoft and Salesforce.com, trace their origins to Berkeley’s pioneering work in relational database research. Berkeley was the birthplace of UNIX and the open-source software that undergirds the Internet. Internet search engines, clean tech innovations, cyber security, mobile microscopy and new diagnostics all emerged from talented Berkeley students and professors.

The entire biotech industry had its beginnings at UC Berkeley. FDA-approved drugs to treat cancer and malaria were invented at Berkeley; surgical instruments, DNA forensic platforms and mobile-health applications arose from research at the university.

Berkeley is one of five universities that founded two-thirds of all California’s biotech companies – from Chiron to Redwood Biosciences, Berkeley Lights and this year’s Innovation honoree Carlibou Biosciences, which emerged from Jennifer Doudna’s CRISPR-Cas9 lab. This year’s other Life Science Innovation honoree, Ekso Bionics, also has its roots at Berkeley.

“The enormous talent at Berkeley and a desire to translate research into solutions for the greater good means that Berkeley brains and hearts are driving economic and social gains,” says Carol Mimura, assistant vice chancellor for IPIRA.

“We are also fortunate to have a high rate of female entrepreneurship and to be part of a collaborative, ‘can do’ web of networks that helps us connect the public and private sectors and catalyze outcomes for our region.”

Incubators & accelerators

From the heights of SkyDeck to the Haas Innovation Lab tucked into the iconic Memorial Stadium, budding Berkeley entrepreneurs have a broad array of interconnected incubators and accelerators designed to help them turn great ideas into successful business ventures. Examples include:

• The Berkeley Haas Entrepreneurship Program provides interdisciplinary support for student entrepreneurs drawn from business, engineering, computer science, law and biotechnology.
• The Haas Innovation Lab facilitates collaborative activities that help train innovative, entrepreneurial business leaders.
• SkyDeck, a joint venture of the College of Engineering, the Haas School of Business and the Vice Chancellor for Research Office, is working with startups to accelerate taking commercialized discoveries to market.

“There’s been a huge cultural shift in how the world views startups,” says Caroline Winnett, SkyDeck’s executive director. “As part of that change, UC Berkeley is more intentional about being an ‘entrepreneurship university.’”

• The Center for Entrepreneurship & Technology in the College of Engineering teaches graduate students and professionals “the Berkeley method of entrepreneurship,” while supporting startups through its Global Venture Lab, Innovation Collider and a Global Innovation Program.
• The Foundry@CITRIS enables early stage tech startups to set up shop in the Foundry’s collaborative office/studio space while refining their designs in the CITRIS Invention Lab. To date, CITRIS has helped build 17 companies that have added more than $40 million to California’s economy.
• QB3, a collaboration among UC Berkeley, UCSF and UC Santa Cruz, promotes cross-campus, interdisciplinary research and provides a matrix of support for entrepreneurs, from incubators to venture capital. QB3 spinoffs have created hundreds of jobs and attracted more than half a billion dollars in investment.
• The Global Social Venture Fund, created by Haas Business School MBA students, provides guidance and funding to social entrepreneurs, like former Innovation Award honoree Revolution Foods.
• Startup@BerkeleyLaw gives students, entrepreneurs, investors and attorneys access to top experts, courses and resources on emerging legal issues for startups.

Way to go East Bay Innovation Award Winners!

Innovative, creative, unique. These are just a few of the words we could use to describe your latest achievement. Instead we’ll just say congratulations. Because you deserve it.

We believe in the high-five

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Advanced Manufacturing

Going national in flexible packaging

Electronic chips built into food packaging that can be read by a panel in your refrigerator or an app on your phone that alerts you to the “use by” date may still be engineering fantasies, but that’s the creative thinking propelling Emerald Packaging to the forefront of the flexible packaging industry. Through innovation that’s kept up with changing customer demands, Emerald is now the largest packaging manufacturer on the West Coast.

“In today’s world where nothing remains static, being able to react quickly is a marketer’s dream,” says Emerald CEO Kevin Kelly. “Brand owners want to run only what they need so there is less waste, scrap and product being discarded due to obsolescence.”

Kelly worked as an advisor to Hewlett-Packard on the development of its new wide web H-P Indigo 20000 Digital Press, then entered into a joint venture with H-P to become the first and only North American beta site for the new technology.

“The new press is super efficient at small volumes, the graphic quality is much better and the presses are greener than the older technology,” says Kelly.

“With the adoption of the new digital technology, we moved from being a regional company to a national name in the packaging business almost overnight.”

Digital printing enables companies to create designs specific to events or special promotions. Emerald recently won a major industry award for a Frito Lay campaign that let people send in photos and have them printed on individual packages of potato chips.

Use of digital presses is only one in a series of sustainable initiatives introduced by Emerald Packaging, including the first plant-based compostable package for the produce industry, a film made from 25 percent potato starch and a biodegradable plastic film for covering fiber trays.

“Organics are the fastest growing produce market segment,” says Kelly. “By combining sustainable packaging with organic foods, we make these products even more appealing to customers.”

All of these innovations have had the effect that “for the first time in a generation, the East Bay is seen as a print innovator,” says Kelly. “The East Bay pulls in the people who can look at a product and think about how to reinvent it.”

“The East Bay pulls in the people who can look at a product and think about how to reinvent it.”

Kevin Kelly, CEO, Emerald Packaging

Proving they can build it better

When Tesla needed a more economical enclosure to house its new commercial energy storage system, they turned to Inland Metal Technologies — a full-service metal fabrication house with a reputation for an exceptional commitment to its customers.

“Companies are increasingly looking to the East Bay as the heart of Bay Area manufacturing.”

Stan Sutton
President & CEO, Inland Metal Technologies

Working with the Tesla team, Inland Metal’s engineers redesigned the units to lower the cost of manufacturing and speed up delivery. And then, in a bold move designed to outdo the competition, Inland built the first prototype of the stationary storage Powerpacks – at no cost to the customer.

“We wanted to let Tesla know we could do it better, faster and more efficiently than anyone else,” says Inland Metal’s CEO Stan Sutton.

No surprise, Inland Metal won the contract – and is now producing the second generation of the Powerpack units.

“To survive in today’s global economy, a company has to be innovative, take risks and capture the work when it’s right there in front of you,” says Sutton.

“We would have lost the Tesla contract if our engineers didn’t have the advanced skills and innovative outlook that could lead to the right fix.”

Sutton also believes in gearing up to “be in the right position at the right time.”

“We invest in the skill sets, machinery and people who can make the products our customers need right here in the East Bay,” he says.

As a result, every dollar of the multi-million dollar Tesla contract trickled down locally – for labor, materials and services.

Prepping for the future extends to helping enhance the East Bay’s labor pool. “The East Bay is a rich source of talent with the skills required for advanced manufacturing,” says Sutton, “but there’s always additional training needed.”

Sutton leads the East Bay Advanced Manufacturing Partnership’s Talent Group and works with area schools, like Laney College, to develop new courses of study relevant to the latest in new technologies.

“The South Bay may sprout the entrepreneurial seeds,” says Sutton, “but when companies search out where to grow, they’re increasingly looking to the East Bay as the heart of Bay Area manufacturing.”

“Companies are increasingly looking to the East Bay as the heart of Bay Area manufacturing.”

Stan Sutton
President & CEO, Inland Metal Technologies

WINNER
Emerald Packaging
empack.com

Innovation: First to embrace H-P Indigo 20000 printing press; first compostable plastic package in the produce industry; new, sustainable, potato-based packaging.

Location: Union City
CEO: Kevin Kelly
Employees: 250
Revenue: $85 million

Regional significance: Repositioning the East Bay as a print innovator.

East Bay Favorite: East Bay hills open land.

FINALIST
Inland Metal Technologies
inlandmetal.com

Innovation: Tesla’s Powerpack.

Location: Hayward
President & CEO: Stan Sutton
Employees: 300
Revenue: $36.7 million in 2014

Regional significance: Capital investments that make the East Bay a stronger competitor for advanced manufacturing.

East Bay native Gary Darling, general manager of Delta Diablo, is one of those inspirational leaders whose collaborative approach to problem solving is making an impact on Bay Area water supplies.

“At the state and federal levels, it was pretty clear that if we brought public agencies and utilities together as one voice, we could be very powerful,” explains Darling. “Instead of competing, we support those projects that are ready to go.”

Delta Diablo serves as the lead agency for the Western Recycled Water Coalition (WRWC), which is developing secure, reliable water supplies for the region, and the Bay Area Biosolids to Energy (BAB2E) Coalition, which is implementing innovative resource recovery technologies that promise to transform the industry.

“The wastewater paradigm has shifted from treatment and disposal to developing resources out of what comes into the plant,” says Darling. “In the Bay Area, we use about 1 million acre feet of water each year. Developing recycled water to help offset that usage just makes good sense.”

With 20 public agencies and two investor-owned water utilities, the WRWC convinced the state to set up an $800 million, low-interest loan program for water reclamation projects.

Since 2009, the coalition has secured more than $38 million in federal funding, and more than $100 million in state and local funding to construct eight projects and study 14 additional projects. For example, Delta Diablo secured funding for projects that jointly provide low-cost recycled water to school districts, city parks and golf courses in Pittsburg and Antioch. Delta Diablo also serves industrial customers, including two Calpine power plants.

On the energy side, the 19-member BAB2E Coalition is taking the lead on bringing new technology that’s been scientifically proven but not yet available on a commercial scale, to the Bay Area. “After all,” says Darling, “we’re the high tech capital of the world, so why not take the lead in this effort?”

Through BAB2E, an innovative hydro thermal oxidation technology developed in Ireland will be installed at two East Bay wastewater districts. The first of their kind in the nation, these projects will serve as a model for other metropolitan areas across California and the United States.

Catalyst

Seeing wastewater as a resource

Delta Diablo wastewater treatment plant

“If we brought agencies together as one voice, we could be very powerful.”

Gary Darling, General Manager, Delta Diablo

Accelerating the energy storage industry

Venkat Srinivasan, Staff Scientist, LBNL

“We needed to focus not only on the technology, but on how to put new ideas into practice.”

FINALIST

**Delta Diablo**

ddsd.org

**Innovation:** Collaborative partnerships to fund recycled water and recover energy recovery projects.

**Location:** Antioch

**General Manager:** Gary Darling

**Employees:** 78

**Revenues:** $34.9 million

**Regional significance:** Developing/funding infrastructure to secure water and recover energy resources.

**East Bay Favorite:** Walking from Walnut Creek to top of Mt. Diablo!

**WINNER**

**Delta Diablo**

ddsd.org

**Innovation:** Collaborative partnerships to fund recycled water and develop resource recovery projects.

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**East Bay Innovator Awards**

**Winner**

**Delta Diablo**

ddsd.org

**Innovation:** Collaborative partnerships to fund recycled water and develop resource recovery projects.

**Location:** Antioch

**General Manager:** Gary Darling

**Employees:** 78

**Revenues:** $34.9 million

**Regional significance:** Developing/funding infrastructure to secure water and recover energy resources.

**East Bay Favorite:** Walking from Walnut Creek to top of Mt. Diablo!

**Finalist**

**LBNL/CalCharge**

calcharge.org

**Innovation:** Pursuit of cutting-edge energy storage solutions.

**Location:** Berkeley

**Staff scientist/LBNL:** Dr. Venkat Srinivasan

**Employees:** 80 LBNL researchers/battery program

**Revenues:** $14 million/battery program at LBNL

**Regional significance:** Advancing the East Bay’s emerging energy storage industry.

**East Bay favorite:** Strolling through Downtown Pleasanton.

**East Bay Innovator Awards**

**Winner**

**Delta Diablo**

ddsd.org

**Innovation:** Collaborative partnerships to fund recycled water and develop resource recovery projects.

**Location:** Antioch

**General Manager:** Gary Darling

**Employees:** 78

**Revenues:** $34.9 million

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**Finalist**

**LBNL/CalCharge**

calcharge.org

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**Location:** Berkeley

**Staff scientist/LBNL:** Dr. Venkat Srinivasan

**Employees:** 80 LBNL researchers/battery program

**Revenues:** $14 million/battery program at LBNL

**Regional significance:** Advancing the East Bay’s emerging energy storage industry.

**East Bay favorite:** Strolling through Downtown Pleasanton.

**CalCharge** streamlined the contractual mechanism for companies to gain access to the Lab’s world-class facilities.

Eight of the 25 East Bay companies involved in energy storage have signed onto the consortium, including Blue Current, Eaton, Enovix, EnZinc, Parais, Halotechnics, Primus Power and Saratoga Energy. With the exception of Eaton, all are start-ups.

“We're able to bring companies together to figure out how to solve challenges they have in common – manufacturing, bringing an idea to market, financing, recruiting talent – which frees them to compete in design, materials and technology,” says Srinivasan.

CalCharge is also working with San José State University to create a graduate program in battery technology. Recently, Lawrence Livermore National Laboratory joined forces with Cal Charge to broaden the consortium’s reach.
Electrifying heavy trucks & buses

**WINNER**

Motiv Power Systems  
www.motivps.com  
Innovation: Technology to electrify heavy vehicles (trucks and buses).  
Location: Hayward & Foster City  
CEO: Jim Castelaz  
Employees: 42  
Revenues: $2.2 million (2014)  
Regional significance: Advancing the growth of industrial applications for all-electric vehicles.  
East Bay Favorite: Oakland Estuary walking/running trails.

As a Stanford graduate student, Jim Castelaz was struck by the fact that while the overall economy was making great strides toward sustainable energy independence, the transportation sector was lagging.  

“Heavy vehicles – trucks and buses – are the workhorses of our economy,” says Castelaz. “We rely on them to keep the economy running, yet at the time (2009), there were no good options for alternatives to fossil fuels.”

What was needed was a good electric drive solution that could be dropped into different vehicles in the same way a common diesel engine gets dropped into a number of models.

Using that idea and applying his expertise in electrical engineering and software systems, Castelaz and his team designed and built an operating system for an electric truck. In 2010, Motiv was awarded a California Energy Commission grant to develop the technology and bring their products to market.

Built at the company’s state-of-the-art manufacturing facility in Hayward, the Motiv All-Electric Powertrain was named one of Popular Science’s “Best of What’s New” technologies in 2014. The system has successfully been scaled from school buses to shuttle buses funded by Google and the California Energy Commission, and North America’s only all-electric refuse truck deployed by the City of Chicago.

“Our ultimate vision is to be the leading electric powertrain provider to electric truck and bus manufacturers,” says Castelaz. “We’re driven to free trucks and buses from fossil fuels.”

Motiv works with half a dozen vehicle manufacturers with the goal of showing the industry that electric trucks and buses are both cleaner and more economical to operate. Electric vehicles can reduce costs by up to 87 percent compared to diesel trucks.

“With every product Motiv ships, we’re doing our part to tackle an immense problem while contributing to the health of the communities our vehicles are in.”

While the U.S. trucking industry is centered in the Midwest, Motiv benefits from being in the Bay Area, says Castelaz.

“We’re surrounded by bright, smart people and a culture that sees innovation as figuring out how to leverage great new technology to make the world a better place.”

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**FINALIST**

Finelite, Inc.  
www.finelite.com  
Innovation: FineTune White Color Tuning System  
Location: Union City & Livermore  
CEO: Jerry Mix  
Employees: 238  
Regional significance: Reinventing luminaires, lighting systems and their application.  
East Bay favorite: Watching water polo at Cal.

Research suggests the color of the “white” light in a space has a measurable impact on the circadian, hormonal and behavioral systems of its occupants. White color tuning may result in improved learning in schools, better healing at hospitals, more retail sales and even increasing wins for sports teams.

Up until now, however, color-tuning systems have been reserved for high-end applications like museums and galleries, with few choices for other users and high price tags.

Finelite, founded 25 years ago by Terry Clark to provide people better lighting, has developed an affordable, easy-to-use and install, white-color tuning system that works with the company’s most popular LED luminaires.

The award-winning FineTune system can be adjusted to each client’s preference and includes luminaires, cabling, wall controls and a mobile app – all built and shipped from Finelite’s factories in Union City and Livermore.

“Our customers are leading architects, lighting consultants, engineers, utilities personnel and contractors,” says Finelite CEO Jerry Mix. “Our job is to find ways to make their ideas and dreams come true, not just as a vendor but as a highly regarded technical and design resource.”

“It’s that culture of encouraging employees to be action-oriented in getting to ‘yes’ that leads to innovation,” says Mix.

“Ignovation is in our DNA. We’re providing value to the marketplace with products people may not have even thought possible.”

In addition to the FineTune system, Finelite created proven solutions to cut energy in half without compromising lighting quality.

Mix credits Finelite’s innovation with the company’s accelerating growth. More than 65 percent of product sales in 2015 are from products introduced in the last three years. Over that time the head count has grown from 134 to 238.

“The East Bay thrives off innovation,” says Mix.

“People here are willing to try new things. Our customers want spaces that are better lit and energy efficient and those same customers have offices and buildings in other places, so the innovation spreads out from here.”

That said, Mix sees the East Bay as “very different from the software and high tech world we think of as Silicon Valley. The East Bay is where work is done and things are made.”

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“**Innovation is leveraging great new technology to make the world a better place.”**

Jim Castelaz, CEO, Motiv Power Systems

“**The East Bay is where work is done and things are made.”**

Jerry Mix  
CEO, Finelite
**Innovation at the Early Stage**

**Wells Fargo engages to grow innovation economy**

**BY JIM FOLEY**

Wells Fargo finds engagement with the East Bay Economic Development Alliance (East Bay EDA) to be a win-win on many different levels. We’re able to market our services and products to a wide array of businesses, we’re able to find the most appropriate community organizations for investment and volunteerism for our interests, and we’re encouraged to think out of the box with cross-sector partners as we strive to support business attraction, retention and growth.

The East Bay Innovation Awards, which we’ve been a part of since its inaugural year, allows us to celebrate and congratulate innovation across different industries, and to applaud efforts of bringing diverse resources together in the effort to maximize innovation for its best use and benefit. That’s why we take special pride in presenting the Catalyst Award.

We’ve embraced innovation in a unique public-private partnership. Last year we launched the Wells Fargo Innovation Incubator (IN2) to find ways to drive economic development, build sustainable communities, and conserve and protect our natural resources and environment. We committed to invest $10 million over a five year period for clean technology startups funded by our Wells Fargo Foundation and co-administered by the Department of Energy’s National Renewable Energy Laboratory to develop early stage companies focused on clean tech for commercial buildings – infrastructure, services and products we hope to one day use in our over 94,700 bank branches.

For our first group of companies, we sought out clean tech startups through our network of technical, financial and industry advisors at laboratories and research facilities across the country, including the University of California at Berkeley, this year’s Legacy Awardee. Partners such as the three National Laboratories in the East Bay – Lawrence Livermore National Laboratory, Lawrence Berkeley National Laboratory and Sandia National Laboratories – and outstanding research institutions like UC Berkeley enable us to find the right startups for our IN2 initiative.

Wells Fargo has just selected six additional clean technology startup companies to join our IN2 program, bringing our total portfolio to ten companies. Each will receive up to $250,000 in cash and in-kind technical consultation to foster solutions focused on reducing energy and creating innovative clean technologies, specifically for commercial buildings. The six early stage companies – two in California and one each in Illinois, Indiana, Massachusetts, and New York – are joining the Innovation Incubator to refine their potentially game-changing technologies for the commercial buildings marketplace. I am pleased to announce that one of the companies selected is Heliotrope Technologies, based in Alameda. This early stage company is utilizing unique, solution-based manufacturing processes for electrochromic devices, with an emphasis on developing low-cost, energy-saving smart windows. Finding a company like Heliotrope in the East Bay is not a stroke of luck – it’s indicative of the types of companies supporting sustainable business needs in this region through innovative technology. In time, we hope Heliotrope Technologies will be a recipient of an East Bay Innovation Award for Clean Tech.

Jim Foley is the Lead Regional President of the Pacific North Region for Wells Fargo and the Immediate Past Vice Chair of East Bay EDA.

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**PUT THE “A” (ART) IN STEM**

**EAST BAY INNOVATION “STEAM” ART CONTEST**

**WHAT:**
For East Bay middle school students, high school students and young adults (18-21). Art must communicate, “What does innovation in the East Bay mean to me?” Art must be computer generated.

**WHEN:**
Competition opens February 26, 2016. All artwork must be received by April 1, 2016.

**ARTIST**
Each of the 6 winning artists (one winner in each age category in each East Bay county) will receive a refurbished laptop courtesy of OTX West and the East Bay Broadband Consortium.

Selected artwork will be reproduced on products by Oaklandish.

**BENEFITS**
Winners will be announced at the East Bay Economic Development Alliance’s Spring Membership Meeting on May 19, 2016 at the Oakland Asian Cultural Center.

**TO FIND OUT MORE ABOUT THE CONTEST – GO TO**
www.EastBayEDA.org
Self-rising: Baking skills change lives

**WINNER**

The Bread Project

_breadproject.org_

**Innovation:** A new, fast-track model for workforce development.

**Location:** Berkeley

**Executive Director:** Alicia Polak

**Employees:** 9 + 3 independent contractors

**Revenues:** $1,283,977, of that $370,905 from social enterprise income

**Regional significance:** Job training and placement for low-income individuals.

**East Bay Favorites:**

- Climbing Claremont
- Canyon Bowl’d
- Bette’s Oceanview Diner
- Coffee at 7/11 on University in Berkeley!

**“Graduates find work in less than 30 days on average.”**

Alice Polak, Executive Director, The Bread Project

As on the premise that baking is a skill that is replicable and transferable across cultures, The Bread Project was founded in 2000 to help low-income individuals develop job skills and become self-sufficient.

While the organization was meeting the usual metrics set for workforce development programs, staffers and Executive Director Alicia Polak, who came aboard in 2011, recognized the need for a quicker pathway to employment.

“Our students are low income and faced with a number of challenges, from child care to transportation. They’re refugees and formerly incarcerated individuals who have very little in the way of support,” says Polak.

“The standard 12-week training program was a hardship. By condensing the program, we could get them into the workplace more quickly.”

In response, The Bread Project created a three-week intensive Bakery Bootcamp for clients with the greatest need.

“We went against conventional wisdom and totally redesigned the curriculum,” says Polak. “We were lucky to have partners like the Tipping Point Community and Chevron who listened and encouraged us to think out of the box.”

Bread Project trainees learn both the hard skills of safe food handling, culinary math and basic baking as well as how to follow directions, take personal responsibility, manage their time and conduct themselves as kitchen professionals. Participants benefit from 15 months of additional follow up services.

Since its re-introduction in January 2014, The Bread Project has had a 90 percent graduation rate and helped 130 individuals (85 percent) find jobs — in less than 30 days on average.

For clients who must start over in life, The Bread Project can be both a lifeline and a route forward.

**Creating opportunities for ‘digital natives’**

**FINALIST**

Hack the Hood

_hackthehood.org_

**Innovation:** Training low-income youth for careers in tech.

**Location:** Oakland

**CEO/Executive Director/Co-founder:** Susan Mernit

**Employees:** 15

**Revenues:** $1.2 million

**Regional significance:** Tech training for underserved youth.

**East Bay Favorite:**

- Oakland & Berkeley YMCA’s

“While working with adult volunteers in Oakland’s shop local movement to give small businesses online visibility, Susan Mernit had an idea: What if we “flip the script” and get young people to build the websites? "Oakland’s tech economy was on the rise, but residents and youth – the power users of mobile technology we call ‘digital natives,’ were largely excluded from the new opportunities being created,” says Mernit, herself an entrepreneur and a former tech executive.

“There’s a deep divide in how the benefits and challenges of technology affect people’s lives, as well as who has access to technology training and careers.”

Mernit’s solution was Hack the Hood, an award-winning nonprofit that introduces low-income youth of color to careers in tech by hiring and training them to create websites for actual small businesses in their own communities.

Launched in 2013 with funding from the City of Oakland as a six-week summer “boot camp,” just a year later Hack the Hood won a $500,000 Google Challenge award. The grant brought the fledgling organization nationwide publicity and attracted additional public and private funding.

Hack the Hood used the money to develop a train-the-trainer model to expand beyond Oakland to Richmond, East Palo Alto and Watsonville. Additional sites are planned for this summer.

During ongoing summer camps and afterschool programs, young people gain hands-on experience building responsive, mobile-friendly websites, executing search engine optimization and helping businesses get listed in local online directories.

Program participants have built free websites, valued at $500,000, for 300 small businesses. More than 80 percent of participants have stayed in high school, enrolled in college or advanced job training, or found jobs.

In January, Hack the Hood began a pilot digital marketing paid-apprenticeship program and is actively recruiting companies to participate.

“It’s a triple win for everyone,” says Mernit. “Small businesses are helped to keep pace with mobile technology. Young people get training and jobs. And our tech partners learn the value of a diverse workforce that drives innovation.”

“We’re all about creating economic opportunities for young people.”

Susan Mernit

CEO/Executive Director & Co-founder, Hack the Hood

**Education**
Dream It. Design It. Make It.

**Fab Lab Richmond offers a space for students and residents to be inventors and entrepreneurs**

*BY ANDREA BALEY*

When people think of innovation and advanced technology, they don’t typically imagine the high school auto shop. But in Richmond, Chevron partnered with the West Contra Costa Unified School District and the Fab Foundation to transform the 1970s era auto shop at Kennedy High School into the nation’s largest digital fabrication lab.

Fab Lab Richmond, which opened this fall, features state-of-the-art digital fabrication tools and prototyping machines such as laser cutters, 3D printers and vinyl cutters. The facility is open to area students and community members of all ages.

At Fab Lab Richmond, students from a historically under-resourced district now have access to the kind of advanced technology normally found on college campuses in Berkeley and Palo Alto. As a result, students are for the first time seeing science, technology, engineering and mathematics (STEM) as something they can do, not just something students in other communities do. School officials hope having access to this technology will inspire a generation of future engineers, thinkers and scientists.

City leaders from Richmond are equally as excited that the new maker space will spark innovation and promote economic growth in the community. They recognize that equipping students with tools to succeed in the rapidly changing global economy is important to a community like Richmond that is looking for sustainable and lasting economic growth.

Fab Labs promote an entrepreneurial culture that enables users to dream of an idea, design it on a computer and then use the equipment in the lab to build it. Opening the facility to community members eliminates costly startup costs and creates the type of incubator space that many in Silicon Valley would be envious of.

From Chevron’s perspective, the decision to help fund Fab Lab Richmond was an easy choice. Few factors are more important to the future success of our business and our society than having a highly-skilled and well-educated workforce. Encouraging students and community members to be the innovators and makers of the future is something we strongly support.

The support for the Fab Lab Richmond is part of Chevron’s ongoing investment in education partnerships and programs worldwide, which has totaled more than $200 million since 2013. We believe that investing in STEM education is a national imperative. It is vital to innovation, to our ability to create good jobs, and to both our business and our country’s overall economic strength and competitiveness.

Andrea Bailey is the Community Engagement Manager for the Chevron Richmond Refinery.
Building a better battery

A s one of the first employees at Tesla Motors, Gene Berdichevsky helped to develop its iconic Roadster, the first fully electric sports car. Along the way, he fell in love with battery technology.

He was convinced that better, cheaper batteries were the key to driving down the costs of electric vehicles – and other portable electronics – and significantly easing the barriers to wider adoption.

Berdichevsky teamed up with co-founders Alex Jacobs, another former Tesla engineer, and Gleb Yushin, a professor of Materials and Engineering at the Georgia Institute of Technology, to form Sila Nanotechnologies.

Sila Nano is developing the next generation of materials to get more out of lithium-ion batteries.

“We’re developing the chemistry that will be the new standard in batteries for all sorts of systems, from consumer products like smartphones, laptops and tablets to cars, buses and stationary applications,” says Berdichevsky.

Sila Nano’s innovations make it possible to store more energy in smaller sized batteries. “The result,” says Berdichevsky, “is more energy per dollar of cost and improved driving range.”

Berdichevsky’s choice of a field to pursue exemplifies his belief that “innovation starts with a problem that’s really worth solving. That way you’ll stick with it however long it takes because you know it will be worth it at the end.”

“At Sila Nano, we begin with actually understanding the problem, and then we attack the hard piece first,” says Berdichevsky. “Just because others haven’t succeeded shouldn’t be the barometer of whether it’s solvable or not. You have to believe you can solve it with hard work and the right people.”

Sila Nano started in Atlanta because that’s where Yushin’s lab was located. “But within three years, Alex and I wanted to get back to California,” says Berdichevsky. “Our network was here and we knew we could build out our team with all of the talent available in the Bay Area.”

The East Bay, says Berdichevsky, “enjoys the same spirit of innovation and discovery you find in Silicon Valley, but with a diversity of interests and expertise that’s part of its own unique flavor.”

In addition, it was important to be closer to their big customers in the Asian battery-manufacturing market.

“We looked at a number of locations, and chose Alameda. The city made the entire process, from permitting to getting settled, as smooth as possible.”

A game-changer for hydraulic pumping

Energy Recovery, Inc. scored big last fall following a new licensing agreement with Schlumberger Ltd., the world’s largest oil field services company and a leading supplier of technology associated with hydraulic fracturing solutions.

Schlumberger agreed to pay $125 million up front, including a $75 million exclusivity fee plus $50 million related to specified milestones, in a 15-year deal that could potentially generate multi-billion dollar revenue for Energy Recovery.

“VorTeq is a paradigm shift for the hydraulic fracturing industry,” says Energy Recovery President & CEO Joel Gay.

The VorTeq technology essentially prevents high-pressure pump trucks from having to pump abrasive proppants (e.g., sand), which can cause nearly daily failures.

Using VorTeq technology could cut the cost of commercial production by as much as $5 a barrel.

“VorTeq technology is really new – no one had attempted to accomplish what we’ve been able to do.”

As an entrepreneur, Gay is enthusiastic about the many applications for launching into adjacent industries – from mining to offshore pumping. “What’s great about our market landscape is that it’s both well defined, but also so large that its approaches are unquantifiable,” says Gay.

Energy Recovery’s products help customers operate more efficiently and profitably by recovering otherwise wasted hydraulic pressure energy and/or preserving pumps subject to hostile processing environments, Gay explains.

“VorTeq represents huge leaps forward in both materials science (the heart of the system is tungsten carbide, one of the hardest materials on the planet) and fluid dynamics,” says Gay.
Healthful meals for people on the go

While passion is at the core of every successful entrepreneur, CORE Foods’ founder Corey Rennell took things a step further, traveling the world for 14 months with the BBC and Discovery Channel, living with tribal peoples and subsisting on staples such as ground corn in Mexico, beet taro in Brazil and grilled breadfruit in Vanuatu.

From those experiences, he concluded that “the secret to nutrition is simple: eating mainly fresh fruits and vegetables.” Unfortunately, says Rennell, “it’s not how most of us eat, not because we don’t want to, but because we’re busy and all-produce to-go items are rare.”

With a loan from Whole Foods, Rennell launched CORE Foods on Earth Day 2010 with a full bowl of hearty oatmeal shaped into a meal-to-go breakfast bar sold in the refrigerated section.

“The only thing we have in common with other bars is the shape,” says Rennell. “CORE Meals are sold in the refrigerator section because they can go bad – and that’s a good sign! Other bars use high quantities of sugar and other preservatives to extend their shelf life.”

The idea has caught on. CORE Meals are carried in more than 850 stores across the U.S. and Canada. The business is expanding with a new lunch-only CORE Kitchen in Oakland’s Civic Center Plaza.

“The Bay Area is a pioneer in the health food movement and Oakland’s diverse culture is a hotbed for art, ideas and innovation,” says Rennell.

The CORE Kitchen also serves as a commercial hub, where food is prepared and delivered to customers throughout the Bay Area.

A second lesson Rennell took from his travels was the importance of community. As a certified B Corporation, says Rennell, “when we sit down to brainstorm, it’s not about making more money, but who has the best ideas for making the biggest impact on our community.”

The right time for sweet to meet organic

Denis Ring, who had experience in product development ranging from Safeway’s O Organic brand to Revolution Foods and Del Monte, was running the 365 brand for Whole Foods when it came to him: The most successful organic products were healthier variations on the most popular, mainstream products.

What was missing, Ring noted, was an organic, all-natural version of the traditional American candy bar.

As with all good food products, the right ingredients are essential. Ring, the foodie, recruited Scott Kucirek, an experienced entrepreneur, to serve as CEO. Kucirek saw an opportunity to bring a better product to the marketplace – “one I would want my kid eating.”

The result was OCHO Candy, a triple bottom-line organic chocolate bar company that manufactures its products in West Oakland. With the success of the brand, OCHO has grown from five employees running a single shift a day to 50 employees running 24/6. OCHO recently moved into a new, 25,000 sq. ft. production space in West Oakland, where the company was started.

“Being located in the East Bay enables us to source local ingredients and gives us access to good lanes of distribution and talented people,” says Ring. “People here understand our product and why and how we’re doing it.”

A newly installed state-of-the-art production line – the only one of its kind in North America – will enable the company to grow production tenfold and is versatile enough to adapt to new types of organic confections. At the same time, OCHO’s skilled candy makers will continue to produce its line of high-end, handmade products.

Ring and Kucirek are proud to be part of a growing network of like-minded businesses in West Oakland, including Hodo Soy, that are committed to hiring locally. OCHO takes it a step further, hiring ex-convicts in need of a chance to learn a trade and hold down a job.

“We’re committed to growing the West Oakland economy in a way that benefits long-term residents,” says Ring.
Information and/or Communication Technology

Optimizing customer experience

**WINNER**

CallidusCloud
calliduscloud.com

**Innovation:** Cloud-based sales, marketing and learning and customer experience solutions. More than 4,400 organizations across all industries rely on CallidusCloud solutions to close more deals for more money, faster.

“Our objective is to solve a set of long-standing obstacles to sales and marketing success to make everybody involved more productive, better prepared and more knowledgeable,” says Giles House, CallidusCloud's CMO. “We’re revolutionizing the ways people create, cultivate, satisfy and make fans out of customers.”

CallidusCloud's signature solution is their lead-to-money suite of products, which was born out of a need for their customers to have all the right tools in one place to boost sales performance – from incentives to coaching, the right messaging and cross selling options.”

Business technology, explains House, was causing misalignment between different parts of the business – sales, sales management, marketing, customer experience management and so on. CallidusCloud created a suite that allows information to flow freely across the organization.

“More than ever,” says House, “winners are determined by the experience they give to clients.”

“Our customers want the information they need to make their business run better and be more successful. They don’t want to have to wait and they don’t want products that offer piecemeal solutions.”

CallidusCloud’s products are often used to augment the value companies get from customer relationship management (CRM) systems, like that of Salesforce.com.

“CRM is a great tool to better understand and interact with customers. What we do is to add a layer of tools and data that makes CRM even more valuable,” says Leslie Stretch, Callidus Cloud president & CEO.

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Innovation – Just a Better Way

BY GARY WOLFF AND WENDY SOMMER

Some of the largest corporations in the world are investing heavily in the ‘circular economy’ (one that closes loops rather than our current practice of make, use, and waste) through innovative waste reduction programs. This is estimated to be a $1 trillion investment opportunity. While innovation is sometimes an invention that can be patented, it is often just a better way of doing something.

StopWaste is a government agency that helps businesses and institutions in Alameda County accelerate innovation in solid and energy waste reduction. Companies like America’s Best Coffee Roasting Co., Finelite, Kaiser Permanente, Tesla and Veritable Vegetable have found that reusable transport packaging can save money and reduce environmental impacts in surprising ways. For example, shrink wrapping and unwrapping a pallet of goods involves bending, twisting, and cutting. Reusable pallet wraps reduce the potential for worker injuries and associated costs, and reduce both solid waste and greenhouse gas emissions.

Removing lawns in response to drought can have unintended consequences. Each acre of lawn landfilled creates 87 tons of waste, and spraying to kill the grass in place often creates water quality problems. But smoothing grass under a layer of cardboard and mulch or compost (“sheet mulching”) creates no waste, preserves nutrients for the new plants, expands the market for recycled compost and mulch, and eliminates 40 or more mowing events per year. The City of Pleasanton used this innovation to replace 8,300 square feet of lawn at City Hall, and the State of California recently demonstrated the technique on 2,300 square feet of lawn at the State Capitol building. Numerous private companies such as Cagwin and Dorward, the John Stewart Company, Recology Grover Environmental Products, and WM EarthCare Soil Products are helping their customers to be socially responsible during drought and create resilient, beautiful landscapes.

In the food service and building industries, the opportunity to prevent waste before it is created is enormous. The Cal Berkeley Crossroads Dining facility reduced food preparation waste by 19 percent in an all-you-can-eat dining hall by using tracking software in their kitchens. Under our Smart Kitchen Initiative, Guckenheimer Food Service will be implementing similar software at 13 corporate dining facilities, as will Spectra by Comcast Spectactor at the O.co Coliseum and the Alameda County Fairgrounds. And new products and construction techniques – like pre-fabricated components made in factories rather than hand-assembled on site, or more efficient and durable LED lighting – prevent solid and energy waste.

Innovation in waste reduction is essential, and creates value for the East Bay. The East Bay Innovation Awards are a great way to help promote the economic and environmental benefits of the emerging global circular economy.

Gary Wolff is the former Executive Director of StopWaste, retiring after seven years in this leadership position. Wendy Sommer is StopWaste’s current Executive Director, appointed by the Alameda County Waste Management Authority in January 2016.

Legal Counsel for an Innovative World

Innovation is the catalyst for growth. Companies that want to achieve top-line growth and increase bottom-line results turn to Wendel Rosen. With more than 100 years of proven experience, backed by our full-service capabilities, Wendel Rosen brings critical insights and needed legal counsel to innovative companies whose business operations are often complex, highly time-sensitive, and subject to multiple areas of law. Emerging growth or established business? Wendel Rosen can help you run in high gear and stay ahead of the curve.

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› CONSTRUCTION
› EMPLOYMENT
› ENVIRONMENTAL
› GREEN BUSINESS
› INSOLVENCY/CREDITOR’S RIGHTS
› INSURANCE
› INTELLECTUAL PROPERTY
› LAND USE
› LITIGATION
› REAL ESTATE
› TAX
› TECHNOLOGY
› TRUSTS & ESTATES

The Leader in the East Bay.

wendel.com
**WINNER**

**Caribou Biosciences**

www.cariboubio.com

**Innovation:** New applications for CRISPR-Cas gene editing.

**Location:** Berkeley

**President & CEO:** Rachel Haurwitz, Ph.D.

**Employees:** 28

**Revenues:** $11.5 million Series A financing (2015)

**Regional significance:** Bringing promise of gene editing to reality.

**East Bay Favorite:** Berkeley Rose Garden.

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**FINALIST**

**Ekso Bionics**

eksobionics.com

**Innovation:** Robotic exoskeletons (wearable robots).

**Location:** Richmond

**CEO & Co-founder:** Nathan Harding

**Employees:** 99 internationally (75 in East Bay)

**Revenues:** $8.2 million

**Regional significance:** Created the exoskeleton technology industry in the East Bay.

**East Bay Favorite:** Shakeswell Restaurant, Oakland.

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**Life Sciences**

**Advancing new gene technology**

Caribou Biosciences is at the forefront of one of the most revolutionary developments in science this century – CRISPR-Cas gene editing. Forbes has called Cas9 the protein that “could change biotech forever.”

Founded three years ago by pioneers of CRISPR-Cas biology based on research carried out by Jennifer Doudna’s lab at Cal Berkeley, Caribou’s technologies allow scientists to zero in on a specific section of DNA and, using enzymes to cut at just the right point, remove or fix a defective gene. Such precision raises the potential for being able to cure diseases caused by mutated genes.

Doudna’s work has been recognized with a number of awards, including the Breakthrough Prize in Life Sciences. In 2015, she was named one of TIME’s 100 most influential people in the world.

“Many folks in Jennifer’s lab had been studying CRISPR systems. Along the way, it became clear there were ways we could take certain proteins out of specific bacteria and deploy them elsewhere for cell engineering and cell analysis,” says Rachel Haurwitz, Caribou’s president & CEO.

Caribou was founded for the sole purpose of translating a number of those technologies from the basic research bench out into the commercial world.

“We were excited about the possibilities and just nutty enough to think we could do it ourselves,” says Haurwitz.

Her co-founders entrusted Haurwitz with the role of CEO. Haurwitz, in addition to her PhD, has a Haas Business School certificate in management and technology. In 2014, Forbes named her to its “30 Under 30” list in science and health care and she recently made the San Francisco Business Times’ “40 Under 40” list.

“So much of this is trial by fire and learned on the job,” says Haurwitz. “It’s a matter of hard work, dedication and great advisors to get it done – and done right.”

Straight out of the gate, Caribou benefitted from the Startup in a Box incubator run by QB3, a collaboration between UCB, UCSF and UC Santa Cruz.

“Landing in the QBS incubator and later in West Berkeley, was important to the culture of Caribou,” says Haurwitz. “We don’t feel isolated. We’re part of the Berkeley-Emeryville biotech ecosystem.”

In January, Caribou expanded into a new 25,000 sq. ft. space.

Last October, Caribou announced a strategic alliance with DuPont, including the cross-licensing of key intellectual property and a multi-year research collaboration funded by DuPont.

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**Augmenting human strength & mobility**

Sometimes innovation comes from listening to your potential customers. Ekso Bionics was building exoskeletons to help military personnel carry heavy loads when co-founder Russ Angold’s brother, a Navy seal, became paralyzed.

During his rehab, physicians told Angold and Ekso co-founder Nathan Harding that their wearable robots could be used to get paraplegics up and walking.

“Physicians know patients are much healthier with exercise, but the equipment used in rehab took so much out of them that they were reluctant to try – and their doctors couldn’t blame them,” says Harding.

“At first, we didn’t believe them,” says Harding. “But seeing what was available crystallized for us that we could do something – and do it so much better.”

Today, 156 Ekso suits are being used in more than 100 rehab centers and hospitals throughout the U.S. and in Europe. Of those, 18 – eight donated by the Soldiers Strong foundation – are in use at the Walter Reed Army Medical Centers and other Veteran Administration hospitals.

The suits are primarily used with patients who have had strokes or spinal cord injuries. If those injuries are “incomplete,” patients may be able to relearn how to walk on their own using gait training while wearing the Ekso suit; in the case of complete spinal cord injury, patients may have the opportunity to improve their overall fitness by getting periodic walking sessions.

Started in a lab at UC Berkeley, Ekso Bionics settled in Richmond, where all of the design and manufacturing is done.

“The culture of innovation in the Bay Area has been very important to us,” says Harding. “There are all kinds of different people here who are willing to help startups get going and a huge talent pool of people willing to take a risk by going to work for a small tech company. It’s the culture that makes it happen.”

This year, Ekso is releasing a new product designed for the construction industry that can augment the strength needed for people who handle heavy tools – and prevent injuries.

“We have created an industry,” says Harding. “The world leaders in exoskeleton technology are based in the East Bay and we’ve inspired a generation to approach a problem with new solutions for optimal success.”
EAST BAY EMPLOYERS

IN THREE HOURS OR LESS
YOU CAN INSPIRE THE NEXT GENERATION

Join us for the annual
EAST BAY STEM CAREER AWARENESS DAY

April 27, 2016

The East Bay’s innovation economy—from banking to transportation to biotechnology—relies on a workforce with the right skills in science, technology, engineering and math (STEM).

With site visits and one-on-one conversations with STEM professionals, East Bay STEM Career Awareness Day shows local high school students the range of STEM careers open to them in the East Bay.

To see how you can make a difference contact:
Janiene Langford, East Bay STEM Career Awareness Day Coordinator
(510) 885-7654   janiene.langford.csueastbay.edu

STEM Career Awareness Day supporters include: AAA, Northern California, Nevada Utah; Bayer; Calpine; Dynavac; East Bay Economic Development Alliance; Institute for STEM Education at California State University, East Bay; Life Chiropractic College West; Wareham Development

Looking at STEM education through a business lens

Innovative science industries drive our nation’s global competitiveness, and I am proud that the East Bay is leading the way in educating students for these rewarding jobs.”

— Representative Barbara Lee, 13th Congressional District

California’s economy thrives on the groundbreaking work of STEM companies: think IT, solar power, aerospace, biotech. And yet for decades, students in our public schools have ranked among the nation’s lowest science achievers. Bay Area companies are meeting their workforce needs in some way—by importing talent from overseas and across the nation, by financing internship programs, and stealing workers from other companies. As observed by Congresswoman Barbara Lee, a champion for STEM education throughout her district and with the Congressional Black Caucus, “With 14 million new STEM-related jobs expected by 2020, it is our obligation to ensure our children are equipped with the skills to fill these critical roles. By investing in STEM education, companies are investing in our future and the next generation of STEM leaders to succeed in the 21st century workforce.”

But why can’t we find employees from a local pool of young talent? Why isn’t there a strong pipeline of job-ready youth coming from our community colleges and universities?

This local STEM workforce mismatch deprives Bay Area businesses of a top-notch local employee base, as much as it keeps our diverse student population out of fulfilling careers right in their own backyard.

Learning from local education partners as well as our own company experiences, the Business Advisory Committee of the East Bay Economic Development Alliance has spent the last year looking at best employer-led practices and new approaches to help address the STEM workforce mismatch.

An organized business engagement system must offer bite-sized, flexible chunks, so that each East Bay company—large or small, established or just starting—can find a niche (and get inspired to do more over time). We’ve learned that a simple lack of awareness is the most basic deterrent. Businesses need to open their doors to show students what the jobs are and how dependent they are on STEM knowledge and skills—no matter what the industry. We know that families, faith-based organizations and nonprofit centers are crucial influencers for students. We need to give them the tools to support the message of the importance of STEM education. This can be reinforced by the hundreds of East Bay employees who volunteer in local classrooms, host field trips, act as mentors and supervise interns.

Business understands that they have a vital role to help create that local workforce they all hope to hire from. It’s not just the funding of STEM programs and school district programs. It’s the engagement business must have with students to introduce the STEM jobs of today and tomorrow, and to encourage them to consider the educational path to a good, stable job with a career path—a job that will require a STEM foundation. Congresswoman Lee asserts, “Innovative science industries drive our nation’s global competitiveness, and I am proud that the East Bay is leading the way in educating students for these rewarding jobs.” Please join us for STEM Career Awareness Day in April.

Trina Ostrander manages the Bay Area government and community relations for Bayer and is the Chair of East Bay EDA’s Employer Advisory Committee.

Economic projections point to a need for approximately 1 million more STEM professionals than the U.S. will produce at the current rate over the next decade if the country is to retain its historical preeminence in science and technology. President’s Council of Advisors on Science and Technology
Want to learn more about why businesses are choosing the EAST BAY? CONTACT US!

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4. Health Care 5. Information Communications Technology
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Innovation with the world champion Golden State Warriors

BY RAYMOND RIDDER

The Golden State Warriors ended the 2014-15 season by capturing the 2015 NBA Championship for the first time in 40 years, becoming one of only four teams to capture four or more NBA titles, and recorded a franchise-record 67 wins during the regular season. The Warriors’ success on the court, however, is only part of the story of the franchise’s overall goals as an organization. The 2015 NBA Champion Warriors are always striving to be the most innovative and digitally fit team in all of professional sports, always looking to improve the game day experience for fans. There has been recent attention to the use of technology by some of their top players to enhance their coordination and skill abilities.

“We are always looking for ways to move the needle in the form of digital and technological advancements for our fans, players and as an organization” said Warriors President and Chief Operating Officer Rick Welts. “The ability of our organization to constantly be at the forefront of the league and professional sports when it comes to technology and innovation is something we pride ourselves on.”

Last January, for the second year in a row, the Warriors received the most awards at the annual NBA team league meetings. Included in the awards was the Digital Innovator Award, an award voted on by the teams themselves, where the Warriors were recognized for being among the top teams in their efforts and excellence with relations to digital innovation and experience. Digital innovation is amongst one of the highest priorities for the organization and, most recently, the Warriors were among the first teams in NBA history to unveil several new creative tech elements during the past few seasons including:

• The first to host an interactive live stream of practice on its website with Google+ Hangouts
• The first-ever sound amplification test in the NBA to bring sounds to the game to every fan inside Oracle Arena
• The first team to install an Instagram Wall at Oracle Arena
• The first team to install beacons and integrate technology inside Oracle Arena
• One of the first teams to install Apple Pay inside their arena
• The first team to expand their global fan base by wearing a Chinese New Year themed alternate jersey honoring Chinese New Year
• The first team to launch Filipino Heritage Night shooting shirts for players to wear on-court, contributing to the recognition of their diverse fan base demographics

The Warriors are also garnering social followers at a rapid pace as a result of their success on the court, their social media strategies and innovation off the court. Most recently, the Warriors became the first professional sports franchise to amass over two and a half million Instagram followers, and have a total 12.25 million followers in total across their social media platforms.

Raymond Ridder is the Vice President of Communications for the 2015 NBA Champions, the Golden State Warriors.
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