OUR MISSION

The East Bay Economic Development Alliance is the regional voice and networking resource for strengthening the economy, building the workforce and enhancing the quality of life in the East Bay.

Join the premier network of public and private sector leaders working to promote and strengthen the East Bay's economic success!

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- Open Space
A MESSAGE FROM THE CHAIRMAN

Innovation in a post-pandemic world

Thirty years ago, the East Bay Economic Development Alliance, then known as the Economic Development Advisory Board, began out of a need to address regional transportation challenges our businesses were facing. In the years since, we have worked on other regional solutions such as brokering an agreement that solved an intractable harbor dredging problem for the Port of Oakland, dealing with major plant closures, helping small and medium-sized manufacturers compete more effectively by creating Manex, and securing over $85 million in below prime Industrial Development Bond financing for small and medium-sized manufacturers. Even with all of that work we realized that there was not a strong enough spotlight on the amazing innovative work being done here in the East Bay — and so the Innovation Awards were born.

While it feels obvious in hindsight, the initial decision to postpone the 2020 East Bay Innovation Awards event was a difficult one to make. Less than two months since the initial regionwide shelter-in-place order was instituted across six Bay Area counties, our businesses, communities and entire way of life have been upended in previously unfathomable ways. New terms such as “social distancing” have come to define our current existence as we all try and mount a collective response that meets the moment brought upon by the pandemic. Despite highly lauded efforts here in the region to minimize the spread of COVID-19 and “flatten the curve”, thousands of area residents have been infected with the virus, more than 250 of whom have died. Meanwhile, as our nation and world continue to grapple with the unprecedented impacts of the COVID-19 pandemic, East Bay EDA and its network of regional partners are working hard to respond to new realities gripping the regional economy.

Now, as a result of the most serious pandemic we have ever experienced, we face a new set of major challenges — physical, emotional and economic. At the time of this writing it remains to be seen how much the structure and habits of our daily lives will be affected going forward. What will the recovery environment mean for the travel and leisure industry? Will there be required changes in the way work is done in hospitals, stores, and offices? How much will the market for consumer goods change? As a result of the pandemic, will new venture, angel and private equity investment objectives alter the growth pattern of innovation in the Bay Area? Will the housing market change? And how will that affect our communities? How much will we recover to “business as usual,” and how much will we recover to a “new normal”?

Whatever the post-pandemic reality turns out to be, there are certain to be opportunities for new solutions. With their demonstrated track record, East Bay talents will be engaged in addressing our region’s needs.

I am sure that future East Bay Innovation Awards events will continue to celebrate businesses and organizations who exemplify the ingenuity, persistence and hard work that now, more than ever, will be needed to address the challenges that lie ahead.

Keith Carson
Chair, East Bay Economic Development Alliance; Supervisor, Alameda County District 5; Vice President, Alameda County Board of Supervisors

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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. Engage with us!

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THE OAKLAND A’s CONGRATULATE

THE 2020 EAST BAY INNOVATION AWARDEES

LEARN MORE ABOUT OUR COMMUNITY COMMITMENT AT
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“Lean” method revamps manufacturing

The story of Mizuho OSI’s transformation is at its core an operational story. From its founding in 1978 up until just a few years ago, the Union City-based specialty surgical table manufacturer had been a build-to-stock, worker-based business. That all changed four years ago, however, when the company began implementing Lean manufacturing principles. Lean manufacturing is a production method that has its origins in the Toyota Way, initially outlined by the Toyota Motor Corporation in 1930 for use in its factories. As its name suggests, Lean methodology is designed to minimize waste while maximizing productivity.

And that’s just what Mizuho OSI found after adopting Lean methodology at their manufacturing facility. The company’s revenue has grown by 44%, while the size of its labor force has remained flat. They’ve shortened their manufacturing cycle time from more than three weeks to just nine hours. And their on-time delivery rate, defined as the percentage of products delivered within 30 days, has reached 100%, with upwards of 90% of those orders being delivered within 5 days.

The result is that hospitals get the equipment they need to effectively treat patients faster — such as the company’s Hana orthopedic table, a state-of-the-art operating table that allows the surgeon to replace the hip through just a single incision, an approach that is proven to have better outcomes for patients.

Mizuho OSI’s innovation of its manufacturing processes and operations has helped the company cement its status as a leader in its corner of the surgical device market. Today, Mizuho OSI’s products can be found at upwards of 5,000 hospitals in the United States, and the company reports it has a secure 85% market share in the specialty surgical tables industry.

Another key to Mizuho OSI’s success that should not be overlooked is the company’s East Bay workforce. With more than 300 skilled workers required to staff the company’s 160,000 square foot facility in Union City, having access to an abundance of talent is key, says VP of operations Kevin Thorne.

“The East Bay corridor is ideal because it’s close to public transportation, it’s close to logistics distribution centers, … we can draw talent all the way from Morgan Hill out to Tracy,” Thorne says.

Flexible materials to transform touchscreens

C3Nano’s Hayward location has helped it recruit top talent.

C3Nano’s films are made from silver nanowire, a durable, flexible ink that’s also cheaper to produce than indium tin oxide films. C3Nano reports that its ActiveGrid films can be dynamically flexed over 200,000 times.

Morris attributes C3Nano’s ability to innovate so quickly to the company’s approach to talent acquisition and people management. “We try to hire the best people available, then we immediately make them stakeholders,” Morris says. “We treat them with respect — we treat everyone the same.”

Moreover, “we have since Day 1 approached our business as being transparent to our employees,” he adds. “[Employees] are privy to most of what we do. This enables people and it makes people part of the process.”

Finding the right talent to staff its advanced nanomaterials manufacturing facilities was thus a top consideration for C3Nano when deciding where to locate. Morris says that while C3Nano considered other spaces in the Peninsula and South Bay, they inevitably found themselves returning to Hayward.

“It’s a good location because we’re somewhat midway between Berkeley and Stanford, so there’s lots of scientific talent to draw from,” Morris says. “Plus, also just from our local area, Hayward has lots of good talent. So we’re quite happy, and we feel we’re in a good location from that perspective alone.”
Our way of life has changed. Shelter-in-place in the wake of COVID-19 has saved lives while putting millions of Americans on unemployment and companies, big and small, at risk. We do not know what business in Northern California, across the nation, and around the world will look like in the next few months or the next few years. However, the Port of Oakland is doing what it can to be ready for change.

The Port of Oakland is open for business

The Port of Oakland supplies essential infrastructure and operations. Although significantly fewer in numbers, ships and flights are arriving and departing from the Oakland Seaport and Oakland International Airport (OAK).

“During this extraordinary time, I extend my sincere thanks to the thousands of men and women who keep the seaport and airport operating and cargo and people moving,” said the Port of Oakland’s executive director Danny Wan. “At the same time, we are vigilant about social distancing, washing hands, and wearing masks to protect our loved ones and community.”

Every day heroes are among us: At the Oakland Seaport there are dockworkers, truckers, marine terminal operators, ship crews, federal officers, warehouse workers, port staff and railroad crews; and at Oakland International Airport we have custodians, maintenance workers, concessions employees, air traffic controllers, law enforcement, firefighters, port staff, and airline personnel.

Health directives

The Port of Oakland is supporting and promoting the new health directives aimed at protecting workers and the public by making personal protective equipment available to port staff at both the airport and seaport and through consistent communications about best practices for staying healthy during the pandemic.

Marine terminal operators are deep-cleaning work areas and equipment at the Oakland Seaport terminals nightly. Port staff repeatedly clean and sanitize Oakland International Airport.

As a humanitarian effort, in March, the Port of Oakland supported a federal and state operation to screen and process over 2,000 Grand Princess cruise ship passengers after several tested positive for COVID-19 while at sea. All passengers began a 14-day quarantine after taken by bus to Travis Air Force Base or to chartered planes launched from OAK to domestic and international destinations.

The ship left Oakland March 16 from berth 22. Thorough sanitizing of the 11-acre area was completed March 26. Federal officials said the area could be safely reoccupied for commercial purposes.

Seeking financial relief

Despite a drop of more than 90% of our Aviation passenger business, OAK remains open. Shipping lines have scrubbed 20 May and June voyages at Oakland.

The Federal Aviation Administration announced $10 billion in CARES Act aid for U.S. Airports. OAK is to receive about $44 million. Although appreciative of this support, airports including OAK expect that the grant funds will fall far short of revenue loss.

The Port of Oakland does not receive local tax revenues. It relies on the revenues it generates to fund operations. The port will be looking for state and federal relief to help weather this economic storm.

Legacy of strength, innovation, and commitment

The Port of Oakland’s 93-year presence shows its ability to get through tough times. It has implemented many creative programs and technology in its history to overcome obstacles, and improve its operational efficiency, sustainability and customer service. Although no one can predict how long the impacts from this pandemic will be, port staff are already adapting and planning for change.

“Our workforce is innovative and dedicated to serving our customers, our communities and each other, while keeping ourselves as safe as possible,” said Mr. Wan.

“We’ll get through this together.”

*Advertorial*
Advancing creative and economic growth

BERKELEY REPERTORY THEATRE
berkeleyprep.org
Innovation: Giving more than 700 artists the opportunity to participate in new play development activity since 2011
Location: Berkeley
Managing Director: Susan Medak
Regional significance: Helping to build a critical-minded, engaged and empathetic citizenry
Employees: 150 full- and part-time
East Bay favorite: “The constantly contradictory nature of being here: you have urban and rural, mountains and ocean. ... We are progressive but we are intensely committed to the past.”

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ZOO LABS
zoolabs.org
Innovation: Music entrepreneurship accelerator treats artists like startup entrepreneurs
Location: Oakland
Founder: Vinitha Watson
Regional significance: Musical and professional resources strengthen East Bay arts community and help curb displacement of artists
Employees: 5
East Bay favorite: “How innovative the food here is.”

What would happen if you treat artists like startup entrepreneurs, and taught them how to think about their business, how to access resources around them, and how to deploy their art to shape culture in positive ways?

That’s the question that inspired Vinitha Watson to create Zoo Labs, a West Oakland-based nonprofit and artist accelerator.

A veteran of the technology industry, Watson founded Zoo Labs in 2013 after witnessing first-hand how artists were being left behind and not benefitting from the “new Gold Rush” of the Bay Area’s tech industry. Having obtained an MBA from California College of the Arts, Watson was trained to think about the arts through strategic and entrepreneurial lenses. Finding that many artists who had achieved moderate or even high degrees of success were nonetheless still struggling, she concluded that artists are too often operating on very narrow business strategies, and that the industry lacks viable business frameworks and venture support.

That’s where Zoo Labs comes in. “Zoo Labs is really changing the narrative because we’re acknowledge artists as entrepreneurs, they’re working as entrepreneurial engines,” Watson explains. “That’s not only innovative, it’s revolutionary.”

Those accepted into Zoo Labs’ four-month music entrepreneurship accelerator are provided with a steady diet of professional development workshops, studio time, office space, and access to networks, mentorship and capital. To date, Zoo Labs has to date gifted some $1.5 million dollars in resources to artists worldwide, with 60% of those resources being given to artists in the Bay Area, primarily in the East Bay.

At Zoo Labs, entrepreneurship and musical innovation share top billing, Watson emphasizes. “We really encourage our artists to take big risks with their art, while being surrounded with resources and kind of a safety net. We also drive our artists to really find their audiences, and really figure out, how does their art fit into people’s lives? Why do people need it? All while staying true to the artist’s vision.”

So in 2011, the organization launched The Ground Floor, which serves as Berkeley Rep’s center for creation and development of all new work. Since 2011, more than 700 artists have participated in Ground Floor programming. Berkeley Rep reports:

In keeping with Berkeley Rep’s tradition of innovation, The Ground Floor takes on projects that other theater companies might reject. “And it’s not just writers,” she adds. “We work with composers, writers, directors, even video game designers, [anybody] who want to make a story.”

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Architecture to address roots of injustice

A round the country, jails and prisons are closing as communities increasingly recognize the role they play in mass incarceration. But what will replace prisons? How will justice be conducted? And what will happen to the spaces themselves?

One Oakland-based architecture and real estate nonprofit, Designing Justice + Designing Space, thinks it might have the answers to some of these questions. The organization’s mission is to end mass incarceration by building infrastructure that addresses its root causes, including poverty, racism, unequal access to resources, and the justice system itself.

To that end, Designing Justice follows an interdisciplinary approach, working to re-purpose defunct criminal justice infrastructure, build new re-entry facilities for offenders, and make restorative reinvestments in communities. Founded in 2015, the organization has already built prototypes for spaces that serve as peacemaking centers, mobile villages and workforce development hubs. The City of Oakland also recently selected Designing Justice for a Neighborhood Voices grant to help the organization develop mobile spaces for Pop-Up Village’s events in West Oakland. And just last year, Designing Justice opened the country’s first center for restorative justice and restorative economics, Restore Oakland, in Oakland’s Fruitvale neighborhood.

If you’re not familiar with restorative justice, you’re not alone — even Designing Justice co-founder Deanna Van Buren hadn’t heard of the term as recently as 2007. “When I heard Angela Davis and Fania Davis speak about restorative justice as sort of an old way of doing justice, as a sort of an indigenous reigniting of that way of doing things, I’d never heard of it before,” says Van Buren. But after learning more about it, she decided that “as an architect, I wanted to support that system, I wanted to commit myself to a larger social shift from punitive models to restorative models,” she says.

Unlike our current system of justice, which focuses on punishing offenders on the grounds that they’ve committed a wrong against society, restorative justice is a nonviolent and noncoercive system of justice in which victim and offender engage in mediation to address wrongs. The emphasis isn’t just on restoring to the victim what was lost and the offender taking responsibility, but also on empowering the community in which they both live. Ultimately, Van Buren wants to see “a world where this is the normal way of doing justice,” she says.

Containers see new use as social spaces

Containers see new use as social spaces

Ever had espresso from Oakland’s Red Bay Coffee? Grabbed food from inside a shipping container at Urban Remedy? Had ice cream at Humphrey Slocombe in Uptown?

If so, then you’ve interacted with one of UrbanBloc’s innovative retail designs. The firm’s projects have quickly made a splash against the urban landscapes of the East Bay with its restaurants, cafes and other design carved out of reused shipping containers.

The idea for UrbanBloc grew out of founder Martha Trela’s fascination with the possibilities shipping containers presented for creating pop-ups and other temporary transitional developments. Finding that there was sufficient demand for buildings that disconnect the land and the real estate from the construction phase of development, Trela and her business partner, architect Jerry Jameson, founded Urban Bloc in San Leandro in 2014.

“We both felt it was of value not only from a building perspective, but also from a societal perspective to create these very unique, intimate gathering spots for people to ‘chill’ after a hard day of work … [to] get out of our lonely environment behind our computer desks,” Trela says. “The business model, the social innovation of these small gathering spaces that could be embedded really quickly into cities was compelling.”

UrbanBloc’s approach to design is a form of what’s called “upcycling.” Also known as “creative reuse,” upcycling is a form of recycling that transforms what would otherwise be industrial or commercial waste into a more useful, sustainable product.

The company is also a leader in the growing modular movement in design and construction. With construction costs ballooning and labor shortages rising, the demand for modular, factory-built construction is growing quickly. To that end, UrbanBloc’s products enable easy “plug-and-play” site installation (and de-installation). The company says it’s currently the only California state-licensed, commercial modular manufacturer located in the Bay Area.

Although UrbanBloc is still relatively young, the company has in the last six years made major investments in the East Bay. The company purchases most of its materials from local suppliers. They’ve also recruited several employees from local community colleges and work programs. And they’ve proved to be a strong supporter of San Leandro High School, having hosted multiple manufacturing day tours, hired interns from the school, and participated in youth development programs such as Pilot City.

“The East Bay has been wonderful for us on numerous levels.” Martha Trela, co-founder, Urban Bloc

“The East Bay is so creative. Everything here is driven by a mindset of creativity.”

A mobile classroom by Designing Justice + Designing Space is a restorative investment in community.
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Collaborating for a cure

It’s our passion

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Collaborating for a cure is our passion. Our goal is simple - to prevent, treat and cure diseases to improve the lives of patients.

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Taking action to preserve affordable housing

It’s obvious to anyone who lives or works in Oakland that The Town is currently experiencing a construction boom. That’s good news for the increasing number of businesses looking to make Oakland their home. But with the city’s growing status also comes new challenges, the biggest of which is housing affordability. Rents in the East Bay continue to rise faster than wages and inflation. And while the City of Oakland has permitted 22,000 new housing units since 2016, only about 2,000 of those are affordable units, The Mercury News reports.

The East Bay Asian Local Development Corporation, or EBALDC for short, has been building affordable housing communities for the past 45 years, working to make Oakland a more equitable, livable and compassionate place to live. Four years ago, the organization made the decision to expand its activities to help meet the unique demands the Bay Area economy is placing on the city, as executive director Joshua Simon explains. “The housing crisis has never been as bad as it is now; in the 40 years I’ve been doing this work. People are being priced out and ending up on the street faster than anyone has seen since World War II,” Simon says. “So we decided to innovate.” Observing that it’s easier to preserve existing affordable housing than build new affordable communities, EBALDC in 2016 created its Housing Acquisition Fund, which the organization uses to purchase existing market rate units and stabilize rents so residents have the option to stay in their homes. The organization has already converted 250 market units into affordable housing through the fund as of February 2020.

What distinguishes EBALDC is its ability to partner with numerous other organizations, both public and private, to advance its goals. The Housing for Health Fund, for instance, brings together Kaiser Permanente, Enterprise Community Partners, the City of Oakland and EBALDC. The creation of the fund allowed for the purchase last year of a 41-unit market rate building in Oakland’s San Antonio neighborhood.

EBALDC’s next big step? Developing the Lake Merritt BART station, Simon says. “Working in joint venture with the private developer (Strada) we’re able to achieve 44% affordability in the complex, and to include an innovative commercial portion.”

The organization plans to use the commercial portion to “incubate opportunities for small businesses and nonprofit organizations, he says.

Sharing resources to step up innovation

A nyone who works in the biotech industry knows all too well that even basic equipment can be prohibitively expensive. But what if companies could share equipment, and disperse those steep costs?

That question is the driving force behind Oakland Genomics Center, a Downtown Oakland-based shared workspace and incubator for biotech startups. Organizationally, the center functions as an extension of founder Anitha Jayaprakash’s biotech startup, Girihlet, which develops DNA sequencing technologies to help diagnose and treat autoimmune diseases. After working in the biotech space for a number of years, Jayaprakash came up with an idea for Oakland Genomics Center in 2015 when she noticed that one of the Girihlet’s biggest capital investments, its DNA sequencer, wasn’t being used a lot of the time.

“We had so much down time on our sequencer, it was like, ‘why can’t other startups just have access to my sequencer and still continue doing their work?’” says Jayaprakash.

The premise of Oakland Genomics Center was simple: in addition to sharing open lab space and basic wetware, member companies bring in specialized equipment that they agree to share with other members. Five years later, members have access to a multitude of biotech equipment, including second- and third-generation sequencers, analytic instruments for measuring nucleic acids, containment facilities for work with biological samples, and advanced robotics technologies.

“Together, we have all the resources we need, from instrumentation … [to] talent … [to] expertise,” says Jayaprakash.

At Oakland Genomics Center, researchers share lab space and specialized equipment.

In addition to getting access to the equipment they need, Jayaprakash says that the capacity for sharing talent is what allows member companies to innovate at such a fast pace. “Biotech startups have to think very broadly, so having varied expertise in the same building helps us move much, much faster and helps us be innovative, because you’re literally bringing a group of innovators together in one building.”

Since 2015, Oakland Genomics Center has enabled more than 15 biotech startups to make Oakland their home. And those companies have created more than 60 skilled biotech jobs for the East Bay.

Startups that have outgrown the center haven’t gone far either, renting space in nearby office building. Oakland Genomics Center thus functions as a nucleus around which a major biotech industry could be built. “Each startup contributes to a community that will help each other grow,” Jayaprakash says.
"Fab labs" address region’s skills gap

City that produces everything it consumes isn’t some far-off science fiction scenario. It’s in the City of Oakland’s near future, at least as far as Danny Beesley is concerned. Beesley isn’t the only one who thinks Oakland can achieve that admittedly lofty goal: the City of Oakland, along with 28 other cities, has taken the Fab City Pledge, which commits the city to establishing a fully circular economy in less than 40 years. Idea Labs was instrumental in persuading the City of Oakland to take the pledge.

So far Idea Builder has built three fab labs in the East Bay, one each at Laney College, College of Alameda and Castlemont High School, as well as five labs for Ravenswood School District in East Palo Alto. The typical Idea Builder fab lab ranges in size from around 1200 square feet to nearly 6000 square feet, and features a mixture of traditional and advanced manufacturing equipment, such as laser cutters, 3D printers and CNC routers. There are often technicians on hand to help people use the machines and hold workshops.

In providing citizens with opportunities to train on high-tech manufacturing equipment, Idea Builders says its fab labs have already resulted in the launch of new businesses and the placement of dozens of students into local industry.

Beesley says moving to the East Bay was pivotal to making his vision of creating a network of fab labs come to life. "There’s a lot of money here, there’s a lot of interest here, and there’s a lot of business happening," he says. "So it makes it much easier for me to push big ideas."

Moreover, he "strongly feel[s] that the East Bay, and Oakland in particular, is beginning to pull some of the spotlight over to focus on what’s happening here, because we can see what hasn’t worked in San Francisco and Silicon Valley and begin to approach things differently."

College program in touch with industry needs

From semiconductors to cleantech to food and beverage production, Fremont, California has in the past decade become a global hub for advanced manufacturing. The Fremont Innovation District, located in the city’s Warm Springs neighborhood, is home to such household names as Tesla, Seagate, ThermoFisher and Boston scientific, as well as numerous startups driving innovation in the manufacturing sector.

All that production needs workers — more precisely, skilled workers — but filling those needs can be tricky business for Bay Area companies. A 2018 Accenture survey found that 70% of business leaders reported finding the right talent is a major challenge for their company.

That’s where Ohlone Community College’s new Smart Manufacturing Technology Program comes in. The program’s curriculum was developed in collaboration with an industry advisor roundtable comprised of local business leaders, economic development officers, policymakers, and regional workforce and education partners. The goal of the program is to supply Fremont and other Bay Area manufacturers with a stream of talent to power its core activities while also creating pathways to careers in advanced manufacturing for its diverse student population.

"The smart manufacturing program was really born out of the need from manufacturing companies in Fremont and in the Silicon Valley," explains Rose-Margaret Eking-Itua, professor of engineering at Ohlone College and coordinator of the Smart Manufacturing Program. Noticing that there was “quite a bit of disconnect” between industry and academia, Eking-Itua says of the program, “we decided to really listen to what industry was saying and we’ve put ourselves at the forefront of bridging that gap.”

Eking-Itua says the program is training students for the skills that will be required by the “Fourth Industrial Revolution.” As such, the program furnishes students with knowledge and skills needed to succeed in “Industry 4.0” fields such as industrial IoT, additive manufacturing and other emerging manufacturing disciplines.

Although the program only just launched last fall with a Smart Advanced Manufacturing Summit, Ohlone College says companies have already expressed interest in hiring interns through the program.
Sustainable materials replace animal products

BOLT THREADS
bollthreads.com

Innovation: Developing sustainable, animal-free textiles using biology and cutting-edge technologies
Location: Emeryville
Co-Founder and Chief Science Officer: David Breslauer

Regional significance: Innovative products have drawn attention to the East Bay’s dense cluster of synthetic biology companies
Employees: 95
East Bay favorite: “It’s close to my parents. Hi, mom and dad!”

Most people know by now that leather products carry with them a high carbon footprint. What people may not realize is that most of the alternatives, including vegan leather, are actually petroleum products, meaning they bring with them carbon burdens of their own. That’s a problem for people avoiding animal products not just for ethical reasons, but also to reduce their carbon footprint.

Enter: Bolt Threads. Based in Emeryville, California, Bolt Threads has developed innovative ways of recreating popular animal-derived textiles and other materials. Mylo, the company’s alternative leather product, for instance, is harvested from an unlikely source: mushrooms.

More precisely, it’s made up of mycelium, the branching underground structure of fungi (mushrooms are actually the fruiting bodies of the organism). Bolt Threads developed Mylo from mycelium cells by engineering them to assemble themselves into a supple, yet durable, material. Unlike leather, which requires years of raising a cow to produce — with all the waste and pollution that entails — Bolt Threads says Mylo can be produced in a matter of days.

“No dead cows, no dead dinosaurs — it’s a perfect solution,” says David Breslauer, co-founder and chief science officer.

Mylo isn’t the only material Bolt Threads has managed to recreate using sustainable methods. The company describes its Microsilk product as “spider silk made by humans.” Spider silk fiber is remarkable among natural fibers for its high tensile strength, elasticity, durability and softness. Bolt Threads says it has developed technology to replicate this process sustainably on a large scale.

The company has also developed an animal-free alternative to silk protein, a popular cosmetics ingredient, called B-silk.

Breslauer and his co-founders Dan Widmaier and Ethan Mirsky initially founded Bolt Threads in San Francisco in 2009, but they quickly relocated the company to the East Bay, where they were able to take advantage of a number of benefits.

“It is a great area with a ton of bio-technology companies that we can interact with,” says Breslauer. “The real estate companies and the city government have a very strong understanding of how to work with deep science companies. It’s a really complete and effective infrastructure all around.”

Although Breslauer asks readers to “keep following us in 2020 for some very exciting announcements that should really bring Bolt Threads into your daily lives,” consumers can already find the company’s materials in several products. The company collaborated with Stella McCartney and Adidas, for instance, last year to produce a Microsilk tennis dress.

It also launched a skincare line, Eighteen B, which makes use of the company’s B-silk protein. The company says users can expect to see improvement in their skin’s barrier function as little as four weeks.

Building a better battery to power the future

ENOVIX
enovix.com

Innovation: Patented three-dimensional battery architecture enables high-capacity silicon anode
Location: Fremont
CEO and Co-Founder: Harrold Rust

Regional significance: East Bay factory will create more than 100 jobs and help cement region’s status as high-tech manufacturing hub
Employees: 65
East Bay Favorite: “The East Bay is a great place to combine the talent and resources for battery innovation.”

In nearly every respect, our mobile devices are better than they’ve ever been. They’re faster, they have better screens, and they support more features. But when it comes to battery life, it’s hard not think there’s been a regression.

The problem is that as batteries become denser and more efficient, new and existing software programs and applications increase their demands on the hardware. The result is that you’re still hard pressed to go more than a day without charging your smartphone or laptop.

Enovix is out to change that. “There hasn’t been much, if any, innovation in lithium ion batteries since Sony invented them in 1991,” Harrold Rust, Enovix co-founder and chief executive, explains. “If you look at the track record, the rate of improvement has been very slow, and it’s been driven almost entirely by advancements in materials and chemistry.”

Enovix has taken a different approach, he says. Their focus is on battery architecture — more specifically, developing a high-silicon percentage anode. Silicon anodes have long been held up by the industry for their potential to improve battery density, due to silicon’s high capacity.

While refinements of existing lithium ion technologies result in an average 5% increase in density each year, Enovix’s high-silicon percentage anode is the company’s patented three-dimensional cell architecture, which vertically stacks high-capacity silicon anodes and cathodes together. The best part? Three-quarters of the production process is identical to that used for conventional lithium ion batteries. That could allow manufacturers to retrofit their existing lines with only a small capital investment, resulting in an immediate 30% or greater increase in line production (when measured in Mega-watt hours).

Having raised $160 million in funding already, Rust says Enovix’s next step is to build their first factory, which is currently slated to be built near their headquarters in Fremont. The company expects the factory to create at least 100 manufacturing jobs for the East Bay once it comes online.

Of their East Bay headquarters, Rust says “Fremont…has turned into kind of a nexus for energy innovation and clean tech, which has been very helpful for us in attracting talent. … It’s well-located to attract talent from all of the Bay Area …. both in terms of engineering talent and production workers.”
Investing in STEM transforms lives

NEW APPLIED SCIENCES CENTER TO LEAD THE REGION

LEROY MORISHITA
President, California State University, East Bay

Cal State East Bay’s partnership with innovation leaders throughout the East Bay and Silicon Valley results in thousands of educated graduates with diverse perspectives and essential skills entering highly competitive fields. More than 80% of our graduates contribute to the local economy by working in the Bay Area. In this time of global crisis, our university continues to prepare students for careers with potential for growth to meet the region’s future industry needs.

Improving and expanding access to STEM education is critical to the health and economic strength of the East Bay and broader region. Cal State East Bay’s Institute for STEM Education hosts multiple community-facing programs to build the pipeline into STEM from the K-12 level. We are preparing early learners to enter college with their sights set on STEM-related careers.

Plans are underway to build an Applied Sciences Center with interdisciplinary space and leading-edge labs for innovative student and faculty research projects. The newly created Green Biome Institute, the first plant conservation and genomic profiling institute in a California public university, will be housed in the Applied Sciences Center. This flagship research lab is one of the many learning spaces that will allow students to develop hands-on experience and build their industry-specific networks before graduation. Importantly, we are committed to opening this new building entirely through private support. To date, we have raised more than $24 million towards the $30 million project.

The College of Science is our fastest growing college, with engineering, computer science, construction management and health sciences undergraduate majors having each more than doubled since 2010. In that same time, traditionally underrepresented populations in STEM education have increased 117%. In recognition of our achievements, Money Magazine recently rated us as the 14th most transformative university in the United States.

Our alumni tell us their degrees significantly changed their and their families’ lives and their communities. As president of Cal State East Bay, I am proud that our students not only reflect the vibrant, creative, and multicultural Bay Area but are poised to unlock innovative solutions to the critical problems facing society today.

Help match Wareham’s $1 million pledge toward the CSUEB Applied Sciences Center to lead the region.

Wareham Development and the stellar research and tech companies at our vibrant Emeryville and Berkeley campuses are proud employers of CSUEB grads on STEM career paths.

It’s time to build an Applied Sciences Center so that the College of Science, CSUEB’s fastest-growing college, continues to meet the needs of the region while significantly increasing its population of students from traditionally underrepresented populations in engineering, computer sciences, construction management, and health sciences.

Please contact William Johnson, vice president for University Advancement at CSUEB, 510-885-4710, for investment opportunities and to match our pledge.
Take a break, Bessie...They’ve got milk covered

Perfect Day
perfectdayfoods.com
Innovation: Using fermentation to create milk proteins that are nutritionally identical to those in cow’s milk
Location: Emeryville
CEO and Co-Founder: Ryan Pandya
Regional significance: Perfect Day is one of a growing number of innovative meat- and animal product-alternative producers calling the East Bay their home.
Employees: 100
East Bay favorite: “The views and the quiet from the Berkeley fire trails.”

Perfect Day plant-based products reproduce the combination of sugars, fats and proteins found in cow’s milk.

“We’ve loved it here; we never want to move.” Ryan Pandya, Co-founder, Perfect Day

Sustainable fish farming ready to scale up

Tsar Nicoulai Caviar Company
tasnicoulai.com
Innovation: Waste stream nutrient recovery technology enables more sustainable sturgeon farming
Location: Concord
President: Ali Balourchi
Regional significance: Company’s Concord headquarters brings a unique, innovative ag business presence to the East Bay
Employees: 40
East Bay favorite: “I’m a monster foodie. So my East Bay favorite is the diverse foods and cultures... You can find a little pocket of everything.”

With a name like Tsar Nicoulai, you might expect the caviar you bought to come from somewhere in Eastern Europe, where caviar is traditionally found. In fact, every can of Tsar Nicoulai caviar comes from the company’s Northern California sturgeon farm.

Founded in 1984 by Iranian immigrants who thought the name “Tsar Nicoulai” would furnish their brand-new caviar brand with a sense of heritage and prestige, the company today operates the only eco-certified sturgeon farm in the United States.

While raising sturgeon for caviar has a reputation for being a water-intensive process, Tsar Nicoulai Caviar Company has developed an innovative method of recycling water that reduces water consumption by 70%. They’ve created the first and only aquaponics caviar operation not to think about milk and cows as magic, but as biology and chemistry,” Pandya says. “If only that magic, whatever it is, was in a plant-based milk, now all of a sudden you have the ability to make everything milk can make.”

Perfect Day’s farm is located near Sacramento, where a small cadre of sturgeon farmers that supplies nearly 80% of U.S. demand for caviar exists, the company’s headquarters are in Concord. That means employment for East Bay residents and tax revenue for the City of Concord and Contra Costa County. Of the company’s East Bay headquarters, Tsar Nicoulai president Ali Balourchi calls finding their headquarters space in Concord “a lucky bounce.” After nearly six years there, Balourchi says “we wouldn’t have it any other way. Concord is our new home. And we try to publicize Concord as much as we can. It’s a great business city, and it’s also a great family city.”
Congratulations to the Oakland finalists in the 2020 East Bay Innovation Awards:

- Back to the Roots
- Designing Justice Designing Spaces
- East Bay Asian Local Development Corp.
- Idea Builder Labs
- Oakland Genomics Center
- Zoo Labs

Learn more about Oakland’s central location, vibrant arts scene, abundant green spaces, and hopping bars and restaurants, along with details on our efforts to make Oakland an easy, efficient, and prosperous place to do business at Business2Oakland.com.
Color blindness seen as a thing of the past

The standard color range of human perception is estimated to consist of more than 1 million distinct hues and colors. Individuals with color blindness, by comparison, see just 10% or fewer of those.

It’s a disparity that affects people’s lives. For decades, eye care professionals have told patients with color blindness that there’s nothing they can do for them. That’s all while color blind individuals suffer daily from major obstacles and frustrations, from inability to match clothes or pick ripe fruit, to inability to see stoplights or interpret graphs and diagrams.

The key innovation is the company’s special optical filters. The filters cut out small slices of light where the problematic overlap of red and green occurs, enabling color blind individuals to see more of the broad spectrum of light most people remain in Berkeley, where the company launched its EnChroma Glasses Loaner and Color Accessibility program at the Georgia O’Keeffe Museum in New Mexico. The program enables public venues, schools, state parks, libraries and other organizations to address color accessibility — an issue that has until recently gone mostly unacknowledged — by loaning EnChroma glasses out to color blind guests and students.

EnChroma was founded and remains in Berkeley, where the vertically integrated company’s eyewear is designed, assembled and shipped. The company today occupies a 20,000 square foot-plus building in West Berkeley, where approximately 50 employees — up from a team of just eight in 2014 — come to work.

“EnChroma is dedicated to allowing everyone of the 350 million people with color blindness that there’s nothing we can do for them. That’s all while color blind individuals suffer daily from major obstacles and frustrations.”

Microbes make a fertilizer that doesn’t pollute

Before there was commercial fertilizer, there were microbes. More precisely, there were naturally occurring microbes in the soil that performed the same function that synthetic fertilizers do today. Over the last 120 years, however, farmers have replaced this naturally occurring fertilizers almost entirely with commercial synthetic fertilizers.

That innovation has allowed crops to grow bigger, increasing the productivity of farming. But it has also led to pollution — a lot of pollution. Studies estimate that as much as 60% of fertilizer isn’t captured by the crop. The fertilizer that isn’t absorbed by the plant decomposes into nitrous oxide, a greenhouse gas that is responsible for about 5% of global warming. Runoff from chemical fertilizer also contributes to algae blooms, which can suffocate fish and harm ecosystems.

Pivot Bio has developed microbes that use natural processes to produce all the nitrogen crops need. Pivot Bio has its origins in graduate research that Temme and his co-founder, Alvin Tamsir, conducted at the University of California. The company spent some time in QB3’s incubator for life science startups in Mission Bay before moving to the East Bay, initially setting up headquarters in Wardham’s offices in Emeryville, before moving to a Wareham property in Berkeley, where they’ve been ever since.
The new Advanced Manufacturing Laboratory (AML) brings together science and engineering expertise, leading edge technology, academic partners, and industry experience under one roof.

Located in the heart of the Livermore Valley Open Campus and adjacent to Lawrence Livermore National Laboratory's main campus, the AML is the birthplace of tomorrow’s most innovative manufacturing processes and products.

The 10,000-square-foot AML houses the most advanced and capable equipment in the field of advanced/additive manufacturing, some of which are not yet commercially available. Additional resources include material evaluation and characterization equipment, high-performance computing (HPC) modeling and simulation systems, and manufacturing capabilities from several active LLNL programs.

FOR MORE INFORMATION PLEASE VISIT US ONLINE adv-manufacturing.llnl.gov

This work was performed under the auspices of the U.S. Department of Energy by Lawrence Livermore National Laboratory under Contract DE-AC52-07NA27344.
Organic gardens in a kit for urban dwellers

It's not often that the results of an experiment cooked up in a fraternity kitchen end up being sold in more than 10,000 stores across the country. But that's exactly what happened for Oakland-based indoor gardening innovator Back to the Roots.

Classmates Nikhil Arora and Alejandro Velez founded Back to the Roots in 2010 when they were still college students. Recognizing that millennials are an increasingly urban demographic, the pair saw an opportunity to create a gardening experience tailored to those who have disconnected from the land, for instance, those who don't have a green thumb or didn't grow up with a backyard.

That idea coalesced with the company's first product, a grow-your-own mushroom kit, inspired by a lecture in which their professor mentioned that coffee grounds, which cafes usually throw out, make an excellent compost — the substance upon which mushrooms thrive. That mushroom kit is still available today, along with a diverse line of more than 21 indoor gardening kits, which can be found at stores like Lowe's, The Home Depot and Target. Those kits range from an aquaponics fish tank and water garden, to self-watering planters, to old-fashioned dill seeds and soil in a can.

Back to the Roots says the kits have given more than a million people the opportunity to grow their own organic gardens. Founded when Arora and Velez were both UC Berkeley undergrads, Back to the Roots has found the East Bay to be an unparalleled source of talent and support for the company. Alice Waters, Chez Panisse head chef, gave the pair the confidence they needed early on to keep pursuing their project with her positive reaction to their home-grown oyster mushrooms. The coffee grounds they used to experiment were originally collected from Peet's Coffee, an East Bay institution whose original location is in North Berkeley.

And the company recently received a little extra push from Golden State Warriors point guard Steph Curry and his wife, Ayesha, with whom they created a co-branded gardening kit called Kitchen Herb Garden by Ayesha Curry.

“We are so lucky we went to school in the East Bay, and Back to the Roots is still based in the East Bay,” says Velez. "The mentorship, the access to capital, and just the ability to expand from a fraternity kitchen to now over 10,000 stores is something that, frankly, I can't imagine having [done] anywhere else.”

Says Arora: “The East Bay, it's resilient, it's innovative, for us it's the hub of sustainability, of the food movement, of entrepreneurship. All that comes together in the East Bay, so we can't imagine being anywhere else.”

Filtration process can cut shipping impact

We're all familiar with food concentrate — it's that ingredient in juice or soup you want to avoid, right? If that's your full impression of food concentrates, then San Leandro-based Porifera has developed an innovative technology that's sure to change how you think about concentrates.

Conventional concentration methods require the application of heat to the product, which can indeed irreversibly damage delicate flavor compounds. Porifera's unique membrane concentration technology, on the other hand, gently removes the water by leveraging a process called forward osmosis, which uses a semipermeable membrane to separate water from stuff that's dissolved in it.

The upshot is that Porifera's technology can be relied upon to process even the most challenging liquids that tend to clog or foul other membrane technologies. What would motivate someone to want to make a concentrate out of painstakingly-prepared beverages like wine or beer in the first place? The same reason any commercial food manufacturer would: concentrating food or beverages reduces transport costs and increases shelf life. The company says its technology can reduce the volume of stored or shipped products by as much as 20 times while preserving taste, color and nutrition.

“If we can shrink the volume of what we ship by one-tenth ... that's where we save money on shipping and are more sustainable.”

Olgica Bakajin, founder, Porifera

There's also the environmental impact — concentrated products weigh less and thus require less fuel to transport. “Shipping contributes huge amounts of CO2 emissions. It's projected to be 17% of global CO2 emissions in 2050,” founder Olgica Bakajin notes. “But if we can shrink the volume of what we ship by one-tenth ... and still deliver great, fresh product, that's where we save money on shipping and are more sustainable.”

In addition to reducing the volumes of food and beverage products, Porifera's forward osmosis process can be used to concentrate waste while extracting clean water. The company has already helped multiple East Bay breweries and wineries separate post-brewing waste into water and solids.

Porifera's filtration removes some of the water from foods and beverages, decreasing their volume so less fuel needed to transport them to market.

Back to the Roots offers more than 21 types of home gardening kits.
In the race to find safe and effective treatments for seriously ill patients with COVID-19, Kaiser Permanente in Northern California is enrolling patients in nationwide clinical trials and participating in an expanded access program of a novel treatment strategy that uses blood plasma from recovered patients.

Kaiser Permanente’s research division in Northern California is taking a careful approach to choose the most promising investigational treatments to protect patients and produce reliable evidence, explained Dr. Alan S. Go, regional medical director of the Kaiser Permanente Northern California, or KP NCAL, Clinical Trials Program based out of the group’s Division of Research in Oakland.

“There’s tremendous pressure,” Go said. “Our treating clinicians are doing the best they can to provide supportive care for people who are really ill. We want to make sure we’re supporting the evidence base so that at the end of the day, we have some treatments we can say really work rather than relying on anecdotal reports or uncontrolled studies.”

Kaiser Permanente hospitals in Northern California are participating in clinical trials sponsored by industry that compare patients who receive the new medications with similar patients who do not, considered an important design element to produce reliable results.

Some of these trials include:

- Remdesivir, an investigational antiviral drug made by Gilead Sciences. Kaiser Permanente Northern California is taking part in Phase 3 clinical trials, along with more than 150 other medical facilities worldwide, which currently include six KP NCAL hospitals as well as Kaiser Permanente hospitals in other regions. Hospitalized patients are being enrolled to receive the intravenous medication in one of two trial protocols, one for severe disease and another for moderate disease.

- Selinexor, a selective inhibitor of nuclear export, or SINE, agent being tested by Karyopharm Therapeutics as an antiviral and anti-inflammatory therapy for COVID-19. KP NCAL is also participating in an expanded access program to give selected COVID-19 patients convalescent blood plasma, taken from COVID-19 patients who have clinically recovered from the infection. Researchers believe blood plasma from recovered patients could provide antibodies to attack the virus and help critically ill COVID-19 patients recover more quickly.

“Selinexor is going to take time,” said Dr. Jacek Skarbinski, an infectious disease specialist and principal investigator for several of KP NCAL’s COVID-19 clinical trials. “There are no shortcuts to rigorous research. So, we’re working to build a lasting infrastructure to evaluate new therapies that are going to help us in the long run.”
Mountain of waste gets a new life

MEDINAS
medinas.com
Innovation: Used healthcare equipment marketplace and cloud-based asset management software help hospitals recoup costs and divert toxic chemicals from landfills
Location: Berkeley
CEO: Chloe Alpert
Regional significance: Diverting waste from landfills helps protect the environment of the East Bay and the world
Employees: 25
East Bay favorite: “The juxtaposition of city and nature is what makes the East Bay so unique. One minute you can be in a cafe reading and the next you can be going on a hike.”

Medinas’ mission is equally urgent. By connecting buyers and sellers of used medical equipment, Medinas reports it has helped divert more than 33,000 pounds of equipment from landfills over the past year—and-a-half. Ninety-six percent of that was e-waste containing toxic chemicals such as poly-chlorinated biphenyls, or “PCBs,” as well as heavy metals like lead, mercury and cadmium. One-quarter of all diverted waste, Medinas says, contained radioactive materials, such as Cobalt 60, which has a half-life of more than five years.

The company’s innovative approach to tackling healthcare waste has earned Medinas and Alpert a number of cash awards, including a $500,000 Forbes Change the World award, a $360,000 WeWork Regional Creator award, and a $1 million WeWork Global Creator award. Those amounts are on top of the $3 million in venture capital the company has raised so far.

Headquartered in Berkeley, Medinas is part of a growing faction of innovative startups looking across the San Francisco Bay to set up shop.”

It’s that astounding magnitude of waste inspired Berkeley-based tech startup Medinas to want to make a dent in the problem. Founder Chloe Alpert started the company in 2017 after learning that billions of dollars’ worth of perfectly functional medical equipment ends up in landfills each year because hospitals don’t have an easy way of connecting with prospective buyers.

Her solution? An online marketplace for pre-owned equipment to connect buyers with sellers and a sophisticated asset management system that gets hospital administrators out of spreadsheets and into the clouds.

Medinas’ solutions alone are helping the company’s customers reclaim anywhere from 5% to 20% of their capital budget, Alpert says. And to date, Medinas has helped hospitals save a combined $70 million in sales equivalency, she adds.

The sustainability component to Medinas’s mission is equally urgent. By connecting buyers and sellers of used medical equipment, Medinas reports it has helped divert more than 33,000 pounds of equipment from landfills over the past year—and-a-half. Ninety-six percent of that was e-waste containing toxic chemicals such as poly-chlorinated biphenyls, or “PCBs,” as well as heavy metals like lead, mercury and cadmium. One-quarter of all diverted waste, Medinas says, contained radioactive materials, such as Cobalt 60, which has a half-life of more than five years.

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Headquartered in Berkeley, Medinas is part of a growing faction of innovative startups looking across the San Francisco Bay to set up shop.”

It’s a market of untapped potential,” says Alpert of the East Bay. “Everyone always looks at San Francisco as the destination, but we realized that the East Bay is where there are such diverse people and lives and perspectives. … Being in the East Bay enables us to focus a little bit more on what we’re doing.”

An online marketplace for pre-owned medical equipment has helped hospitals save millions of dollars.

Edging out oil in the new industrial revolution

ZYMERGEN
zymergen.com
Innovation: Computing platform fusing automation, machine learning, and biology as a source of new chemical building blocks.
Location: Emeryville
Co-Founder, VP of Operations and Engineering: Jed Dean
Regional significance: Zymergen has become the second-largest employer in Emeryville
Employees: 850
East Bay favorite: “Getting lost in the green hills of Briones.”

If the last 100 years of industrial progress were driven by advancements in petroleum materials, the next 100 will be driven by the marriage of biology and technology.

At least, that’s the principle upon which Zymergen has staked its success.

The average person might not realize it, but much of what we see, touch and use in our everyday lives is derived from petroleum. Zymergen’s breakthrough moment came when the company’s founders, Joshua Hoffman, Zach Serber and Jed Dean, observed that the pace of industrial progress has slowed over the last century, as humans have exhausted the ways in which existing processes and materials can be combined to create new things. What was missing, they surmised, was a lack of new molecular building blocks.

So in 2014, Hoffman, Serber and Dean founded Zymergen. And to enable the creation of those new building blocks, they looked toward then-emerging machine learning and artificial intelligence technologies. Marrying these technologies with the power of biology, they bet that Zymergen could become catalyst for a new industrial revolution that creates a more vibrant, sustainable future.

By all accounts, Zymergen’s bet has paid off. The company has seen explosive growth, growing from a team of just three founders in 2014 to more than 800 employees as of February 2020. It also raised over $400 million in its most recently funding round, for a total of nearly $574 million since founding. And in July 2019, Zymergen was recognized as a “lighthouse” in the Global Lighthouse Network by The World Economic Forum for its leadership in applying Fourth Industrial Revolution technologies to drive financial and operational impact.

Building their business in the East Bay has been “critical” to Zymergen’s success, says Jed Dean, co-founder and VP of operations and engineering. “We see Emeryville as a critical hub not only within the Bay Area broadly, but within the world. Our ability to bring together folks whose expertise comes from these different critical dimensions, from machine learning, from automation, from biology and chemistry, and all into one location — and here in this part of the world — was essential in making the choice of Emeryville as the home for Zymergen.”

Development of new chemical building blocks is transforming the materials for many everyday products.

Industrial Revolution technologies to drive financial and operational impact.

Perhaps most impressive, clients of Zymergen have to date sold a combined billion dollars’ worth of products that were made using the company’s microbes.
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East Bay Community Foundation
East Bay Innovations
East Bay Municipal Utility District (EBMUD)
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GSC Logistics, Inc.
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Harbor Trucking Association
Hayward Area Recreation & Park District
HNTB Corporation
Hospital Council - Northern & Central California
ICA Fund Good Jobs
Jobs and Housing Coalition
John Muir Health
Kaiser Permanente
Langan
Lao Family Community Development
Lawrence Berkeley National Laboratory
Lawrence Livermore National Laboratory
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Livermore Valley Winegrowers’ Association
Make-A-Wish - Greater Bay Area
Manex
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NECA, Northern California Chapter
Oakland Athletics
Oaklandish
The Oakland Zoo
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Peralta Community College District
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University of California, Berkeley
University of Phoenix - Bay Area Campus
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The Building Blocks to Recovery
THURSDAY, MAY 21
9:00 AM – 10:30 AM

PRESENTATIONS BY
Christopher Thornberg, PhD
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