

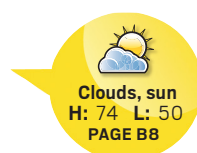
IN THE GARDEN
Find calm in gardening amid a pandemic
H&G » B1

BASKETBALL
Russell-Nava gets a coaching promotion
Sports » B3

WILDFIRES
PG&E hit with record \$1.9 billion penalty
Local » A3

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CORONAVIRUS

Santa Cruz startup pivots in time of need

Prometheus Fuels now churning out face shields to help health care workers

By Ashleigh Papp
apapp@santacruzsentinel.com

SANTA CRUZ » Prometheus is the mythical figure who defied Greek gods and brought fire and civilization to mere mortals. So perhaps it's fitting that a local startup bearing his name moved at lightning-fast speed to come to the rescue of society's new heroes.

Prometheus Fuels, a Santa Cruz company built on the revolutionary idea of creating clean-burning gasoline using only air, water and electricity, has expanded its operations to include the manufacture of an unlikely but direly needed product — personal protective equipment for the army of nurses, doctors, emergency medical technicians and other health care workers courageously battling COVID-19.

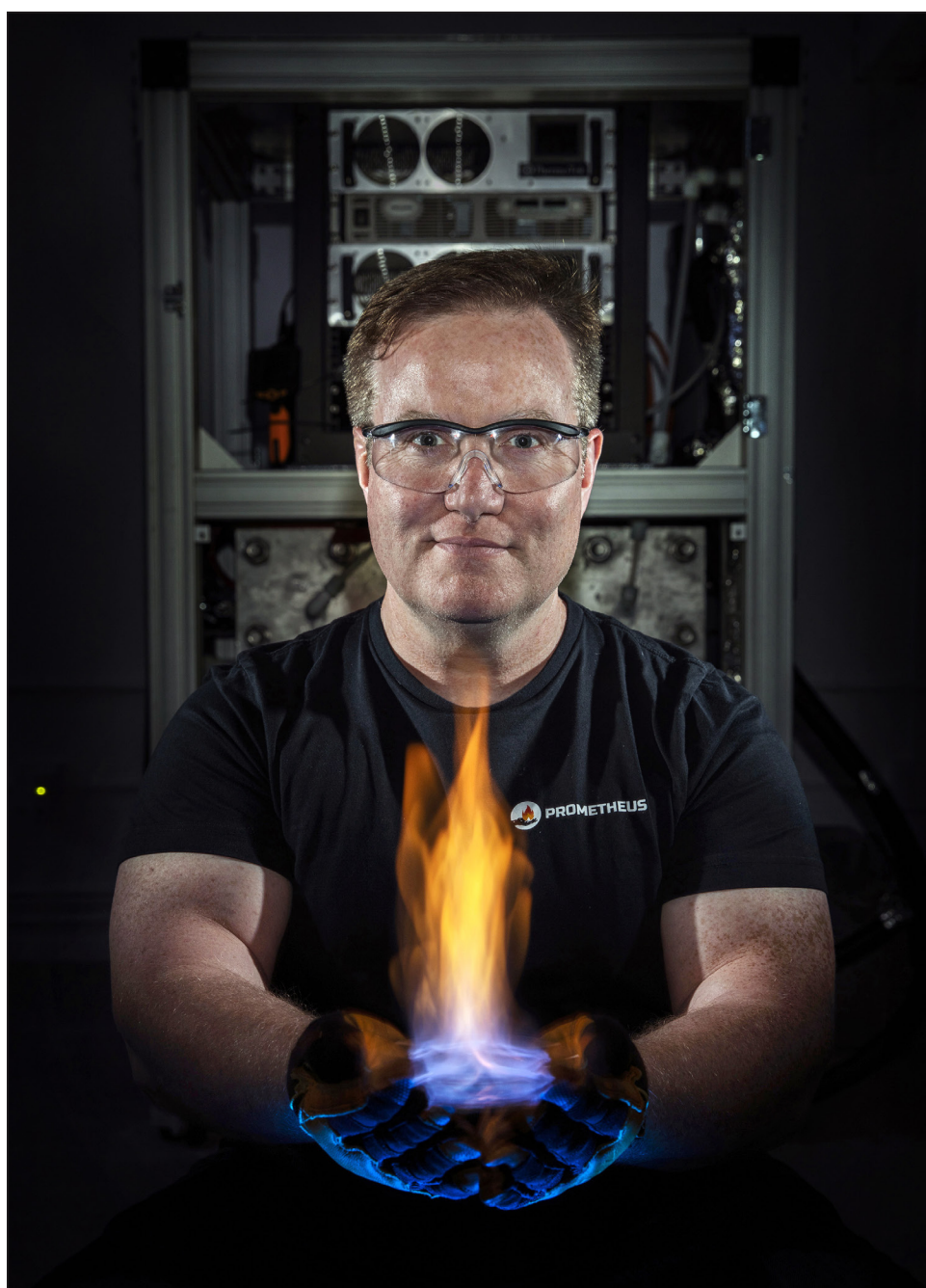
Also known as PPE, the items include N-95 masks and face shields, gloves and gowns. They're all still in short supply in hospitals, clinics and other health care facilities caught off guard by the pandemic, putting health care workers at risk of catching the novel coronavirus.

"I remember thinking, 'I bet there's some way we can help out. What could I make?'" said Rob McGinnis, Prometheus' founder and CEO. "We have a small, nimble team and the necessary machinery. We had to do it."

Within six days of McGinnis' decision in March to help frontline workers, his team had ordered supplies, reprogrammed machinery and shipped its first batch of plastic face shields to Brooklyn's SUNY Downstate Medical Center as New York City quickly became the nation's pandemic epicenter.

Large companies like GM, Ford and Palo Alto-based Tesla received the most attention in recent weeks when they converted their production lines to make masks and ventilators, but across the country hundreds of smaller firms like Prometheus have quietly also marched their troops into battle.

Before the pandemic struck, a normal day at Pro-



Rob McGinnis and his Ethanol converter photographed at his research lab in Santa Cruz County on June 20, 2019.

metheus mostly involved the development of a machine designed to produce clean fuel. The company, whose production facility is on Swift Street on Santa Cruz's Westside, uses electricity and chemistry to remove carbon dioxide from the air to create a fossil-fuel-free form of gasoline.

Because Prometheus already had established relationships with vendors who could supply the materials, it was relatively easy for the company to immediately be-

gin producing face shields. By contrast, manufacturing N-95 masks, gowns and gloves required additional materials and expertise that were beyond the capability of the small startup.

Amanda Martinez, one of nine Prometheus employees, recalls seeing the headlines in March about New York nurses wearing garbage bags to protect themselves. "Doctors were essentially walking into battle without armor," said Martinez, Prometheus' director of brand

and strategy. She and her colleagues initially felt helpless. "Then suddenly we had the ability to do something — to help them right away," Martinez said. "It was empowering."

To get started, McGinnis turned to the website of the University of Minnesota's face shield project. It offered nearly everything his team needed, including a list of materials to make the shields and a pattern to use for assembly.

STARTUP » PAGE 2

CORONAVIRUS

COVID-19 blows \$54B hole in budget

Projected deficit is nearly three times California's Rainy Day Fund

By John Woolfolk
Bay Area News Group

A new memo Thursday from California's finance department put the economic damage of the coronavirus pandemic in stark relief: a projected \$54.3 billion hole in the state budget that's nearly three and a half times the state's Rainy Day Fund emergency reserves.

Gov. Gavin Newsom, who ordered the country's first statewide stay-home order March 19 to slow the virus' spread, hinted Wednesday at the mounting economic toll of shutting all but essential businesses.

"These numbers are jaw-dropping, and it is alarming," Newsom said in his daily news briefing, which today is expected to cover the easing of restrictions to allow some businesses to reopen. "I just hope people are preparing themselves."

Just how alarming? The projected \$54.3 billion deficit is almost as much as the \$57.1 billion California spent on K-12 schools and community colleges last year. Newsom said it approaches the \$60 billion shortfall faced in 2009 with the Great Recession. Among other financial hits:

- General fund revenues, which pay for schools and colleges, health programs, prisons and other basic services, are expected to plummet by \$41.2 billion below January projections, including \$9.7

BUDGET » PAGE 2

US ECONOMY

33M have sought unemployment aid since coronavirus hit

By Christopher Rugaber
The Associated Press

WASHINGTON » Nearly 3.2 million laid-off workers applied for unemployment benefits last week as the business shutdowns caused by the viral outbreak deepened the worst U.S. economic catastrophe in decades.

Roughly 33.5 million people have now filed for jobless aid in the seven weeks since the coronavirus began forcing millions of companies to close their doors and slash their workforces. That is the equivalent of one in five Americans who had been employed back in February, when the unemployment rate had reached a 50-year low of just 3.5%.

AID » PAGE 2

SCIENCE
Bug experts dismiss 'murder hornet' worries
However, Asian giant hornets found in Washington do present challenges to beekeepers, say insect experts. **PAGE A8**

TRANSPORTATION
Uber loses \$2.9 billion, offloads bike business
Company's overseas investments hammered by coronavirus pandemic in first quarter; Jump gets offloaded. **PAGE A6**

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INDEX Local.....A3 | Obituaries.....A6 | Opinion.....A7 | Sports.....B3 | Comics.....B6 | Classifieds.....B7 | Volume 164, issue 129 | **MediaNews Group** 0 78908 22242 9

PETE PEARSON
"THE REAL ESTATE GUY"

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TODAY IN HISTORY

1846

The first major battle of the Mexican-American War was fought at Palo Alto, Texas; U.S. forces led by Gen. Zachary Taylor were able to beat back Mexican forces.

1958

Vice President Richard Nixon was shoved, stoned, booed and spat upon by anti-American protesters in Lima, Peru.

1973

Militant American Indians who had held the South Dakota hamlet of Wounded Knee for 10 weeks surrendered.

1978

David R. Berkowitz pleaded guilty in a Brooklyn courtroom to murder, attempted murder and assault in connection with the "Son of Sam" shootings that claimed six lives and terrified New Yorkers.

1984

The Soviet Union announced it would boycott the upcoming Summer Olympic Games in Los Angeles.

1996

South Africa took another step from apartheid to democracy by adopting a constitution that guaranteed equal rights for blacks and whites.

Birthdays

Naturalist Sir David Frederick Attenborough is 94. Rock musician Chris Frantz is 69. Rock musician Alex Van Halen is 67. Sports commentator/former NFL coach Bill Cowher is 63. New York City Mayor Bill de Blasio is 59. Singer Enrique Iglesias is 45. Actor Elyse Gabel is 37.

Star report

'Coronavirus Facts and Fears,' with Al Gore, Spike Lee

Airing on CNN is "Global Town Hall Coronavirus Facts and Fears," hosted by Anderson Cooper and Dr. Sanjay Gupta.

Guests include former Vice President Al Gore and filmmaker Spike Lee. The latter will debut his short film, "New York New York," which is described as his "valentine to the city" and is dedicated to medical and frontline workers.

Also joining the program will be Maria van Kerkhove, World Health Organization technical lead for COVID-19, and Laurie Garrett, author of "The Coming Plague: Newly Emerging Diseases in a World Out of Balance." — Chuck Barney, Bay Area News Group

LOTTERY

WEDNESDAY'S WINNING NUMBERS

Daily 3 Afternoon: 2, 9, 7

Daily 3 Evening: 8, 3, 6

Daily 4: 6, 0, 3, 4

Fantasy 5: 10, 20, 22, 27, 29

Daily Derby

1st: 1, Gold Rush

2nd: 4, Big Ben

3rd: 2, Lucky Star

Race Time: 1:45.97

SUPER LOTTO PLUS

Wednesday's drawing: 5, 8, 19, 37, 39

Mega Number: 11

Saturday's estimated jackpot: \$26 million

MEGA MILLIONS

Tuesday's drawing: 7, 13, 17, 21, 45

Mega Number: 14

Today's estimated jackpot: \$231 million

POWERBALL

Wednesday's drawing: 7, 8, 35, 50, 65

Mega Number: 20

Saturday's estimated jackpot: \$68 million

Startup

FROM PAGE 1

McGinnis said the ingredients for manufacturing face shields are pretty simple: a sheet of polyethylene terephthalate (the same stuff used to make plastic soda and water bottles), a strip of foam and an elastic band.

While it's possible to cut each sheet of plastic for the face shields by hand, one particular piece of automated equipment slashed the time it takes to a fraction of a second.

"It's called a water jet cutter and it's really versatile," McGinnis said. "You essentially just load a program with the pattern you want, and it will cut pretty much any material into that shape."

The machine was already being used at Prometheus to cut metal sheets and rubber gaskets for its fuel-making system. So the team now recalibrates the cutter as the company switches between normal production and churning out face shields.

Adam Tippie, the technical operations specialist at Prometheus, uses a computer on wheels to control the cutter as it carves out 900 plastic shields in under



PHOTOS BY LIPO CHING

From left, Prometheus Fuels CTO Richard DeVaul, Amanda Martinez, Prometheus Fuels' director of brand and strategy, Engineer Kaswell Gatsi, CEO and Founder Rob McGinnis and Technical Operator Adam Tippie, construct face shields at Prometheus Fuels in Santa Cruz on April 28.

der 20 minutes with highly pressurized water.

"We were able to pivot our daily operation pretty quickly," Tippie said. "I'm proud of the fact that we're not just a one-minded company."

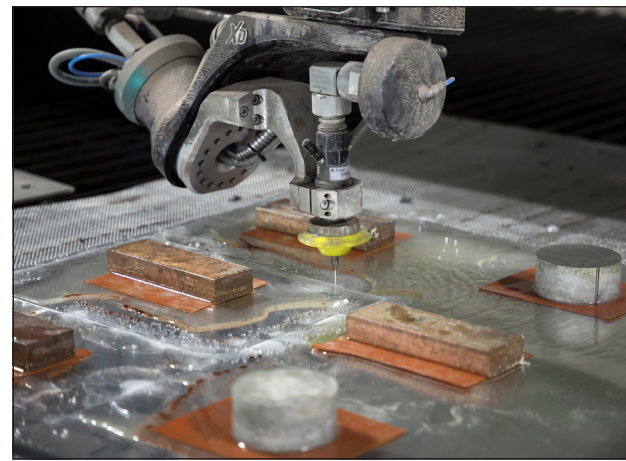
Once the plastic shields are cut, team members put on their gloves and begin the PPE assembly line. They separate the plastic shields by hand, rinse them off and use an employee-designed aluminum rack to dry out each shield.

A strip of elastic that serves as the securing strap is stapled along the top of the shield. Then a thin strip of foam with an adhesive on one side is fastened to the

plastic.

Since its first shipment in late March, Prometheus has manufactured more than 3,100 face shields. The team uses an email system on the University of Minnesota project's website that allows the company to send the shields to where they're needed most. So far, the startup has shipped shields to dozens of medical facilities across the country — from the Bronx and Brooklyn to Oakland and Los Angeles.

The team is also helping ease the stress of the PPE shortage at a local level. At Hearts & Hands, a skilled nursing facility in Live Oak, the PPE supply was stolen



Prometheus Fuels' water jet cutter cuts the plastic for face shields at Prometheus Fuels in Santa Cruz on April 28.

in early March, and emergency shipments seemed to be taking forever.

So when Sandi Feola, a Hearts & Hands nurse, cried out for help on Facebook, Prometheus came through with 100 face shields. "I was absolutely crying when I read Rob's email," Feola recalled. She said she offered to pay McGinnis, but he told her he wanted the shields to be a gift.

Prometheus has been charging most of its new customers what the materials cost to produce each shield — \$3. The time spent by the company's employees to assemble and ship the shields is donated.

McGinnis studied theater and philosophy at Cabrillo

College and Yale, where he later earned a Ph.D. in environmental engineering.

His idea for Prometheus was funded last year by the Silicon Valley incubator Y Combinator.

His plan is to continue making face shields for as long as they're needed.

The reactions to his team's resourcefulness and hard work have been heartwarming. One Los Angeles urgent care clinic recently sent McGinnis a picture of some staff members wearing Prometheus' face shields.

"They look really happy," McGinnis said. "It's hard to tell because of the mask, but I think all of us are learning to identify someone behind a mask now."

Budget

FROM PAGE 1

billion in 2019-20 and \$32.2 billion in 2020-21.

- Personal income taxes — two-thirds of general fund revenue — are expected to fall by 25.5%. Sales taxes — nearly a fifth of general fund revenue — will drop 27.2%. Corporation taxes — more than a tenth of general fund revenue — will shrink 22.7%.

The state projects the 2020 unemployment rate will be a staggering 18% percent, much higher than during the Great Recession.

California personal income is projected to fall by nearly 9% on an annual basis in 2020.

Required funding for K-12 schools and community colleges will shrink by \$18.3 billion, under Proposition 98's constitutional calculation. That's more than twice the \$8.3 billion California spent out of its general fund last year on the University of California and California State University systems.

The report comes a week before Newsom introduces a revision from his January spending plan and is a head-spinning and historic turnaround from the beginning of the year, when California and the rest of the country were riding high on an economy that was firing on all cylinders.

"California began 2020 with a strong bill of financial health — a strong econ-



RICH PEDRONCELLI — THE ASSOCIATED PRESS FILE

California Gov. Gavin Newsom discusses his plan for the gradual reopening of California businesses during a news conference at the Display California store in Sacramento on Tuesday. Newsom's administration is projecting a \$54.3 billion budget deficit because of tax losses and expenses related to the coronavirus.

omy, historic reserves, and a structurally balanced budget," the fiscal update noted.

The state's 3.9% unemployment rate at the beginning of the year was one-third of the 12.3% it had sunk to at the depths of the Great Recession that followed the 2008 mortgage meltdown. The state eliminated its "wall of debt" from past budgetary borrowing, and began making supplemental payments to its underfunded employee retirement plans.

The 2020-21 budget had reflected a \$5.6 billion surplus, with a record level of reserves of \$21 billion, including \$18 billion projected in the state's Rainy Day Fund. Revenues through March ran \$1.35 billion above January's projections, as markets outperformed the budget forecast.

Newsom noted Thursday that in January "we introduced a budget projecting another \$6 billion budget surplus," that the state had "hit a milestone of 120 consecutive days of job growth," with the "lowest unemployment in modern California history."

"People were feeling a great amount of optimism," Newsom said. "That was 90 days ago. Here we are today."

Then the coronavirus took a paralyzing grip on California and the rest of the country and changed everything.

The state's projected \$41.2 billion revenue drop, combined with \$7.1 billion in increases for health and human services programs and other coronavirus costs totaling some \$6 billion add up to "an overall budget deficit of approximately \$54.3

Aid

FROM PAGE 1

The Labor Department's report Thursday suggests that layoffs, while still breathtakingly high, are steadily declining after sharp spikes in late March and early April. Initial claims for unemployment aid have now fallen for five straight weeks, from a peak of nearly 6.9 million during the week that ended March 28.

Applications for jobless aid rose in just six states last week, including Maine, New Jersey, and Oklahoma, and declined in the 44 others.

The report showed that 22.7 million people are now receiving unemployment aid — a rough measure of job losses since the shutdowns began. That figure lags a week behind the figures for first-time unemployment applications. And not everyone who applies for jobless aid is approved. The number of laid-off workers receiving aid is now equal to 15.5% of the workforce that's eligible for unemployment benefits.

Those figures are a rough proxy for the job losses and for the unemployment rate that will be released Friday, which will likely to be the worst since modern record-keeping began after World

War II. The unemployment rate is forecast to reach 16%, the highest rate since the Great Depression, and economists estimate that 21 million jobs were lost last month. If so, it would mean that nearly all the job growth in the 11 years since the Great Recession ended has vanished in a single month.

Even those stunning figures won't fully capture the magnitude of the damage the coronavirus has inflicted on the job market. Many people who are still employed have had their hours reduced. Others have suffered pay cuts. Some who lost jobs in April and didn't look for a new one in light of their bleak prospects won't even be counted as unemployed. A broader measure — the proportion of adults with jobs — could hit a record low.

The impact has fallen unevenly on the U.S. population, with Hispanics much more likely to suffer an economic hit. According to a survey in mid-April by The Associated Press-NORC Center for Public Affairs Research, 61% of Hispanics said their household has lost income because of the coronavirus, whether through a layoff, reduced hours or pay cuts. That compares with 46% of blacks and 43% of whites who said so.

Layoffs have also been

more concentrated among the less-educated. Twenty-eight percent of Americans without college degrees say they've endured a layoff in their household, compared with 19% of people with college degrees.

The official figures for jobless claims may also be under-counting layoffs. Surveys by academic economists and think tanks suggest that as many as 12 million workers who were laid off by mid-April did not file for unemployment benefits by then, either because they couldn't navigate their state's overwhelmed systems or they felt too discouraged to try.

On Thursday, the government also reported how many self-employed, contractors and gig workers, who are newly eligible for jobless benefits, applied for them last week. Nearly 584,000 people did so. The government reported that figure separately because it isn't adjusted for seasonal patterns, as the 3.2 million figure is.

Economists are projecting that the gross domestic product — the broadest gauge of economic growth — is contracting in the current April-June quarter by a shocking 40% annual rate. As it does, more layoffs appear to be spreading beyond front-line industries like restaurants, hotels and retail stores.

billion," the report said. It noted that figure is nearly three times the revised \$16 billion Rainy Day Fund balance.

However, the report concludes that the projected deficit as a percent of general fund spending "is modestly smaller than the budget deficits faced by the state in 2003 and in 2009," which it attributes to "the state's prudent fiscal management and strong economic recovery since 2011."

Newsom stressed that the state's ability to weather the economic hit and patch the gaping holes in its budget will require federal aid, noting that unlike the federal government, states are required to balance their budgets and don't have a "printing press" for dollar bills.

"This moment requires a historic partnership between states and our federal government," Newsom said. "We are very grateful for the support we've already received... But sadly, the enormity of this situation requires even more support."

UC Berkeley labor econ-

omist Sylvia A. Allegretto agreed, and said recent signals from Republican President Trump suggesting aid to Democrat-run states may be conditioned could worsen the economic damage by making it hard for states to keep law enforcement, firefighters, teachers and others on the payroll.

Trump on Tuesday said on Twitter that "Well run States should not be bailing out poorly run States, using CoronaVirus as the excuse! The elimination of Sanctuary Cities, Payroll Taxes and perhaps Capital Gains Taxes, must be put on the table."

But economists note that the coronavirus pandemic is a very different hit to the economy than the Great Recession or dot-com bust. It isn't a result of failure in particular economic sectors, is largely caused by public-health decisions, but also is global in scope.

"We're in uncharted territory," Allegretto said. "We've never lived through anything like this. There are all different kind of things that could happen if we have flareups."

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