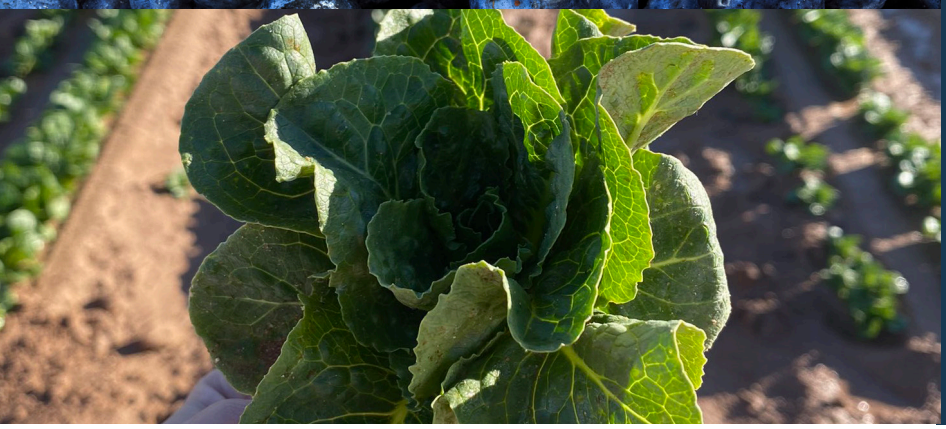
Changing the Conversation
About Fresh Produce Food Safety

CENTER for PRODUCE SAFETY

2020 ANNUAL REPORT



About CPS

We are a unique partnership.
The 501(c)(3) nonprofit Center for Produce Safety (CPS) brings together diverse leaders from industry, government, and scientific and academic communities, to work collectively toward the common goal of enhancing fresh produce food safety.

That's all about the science.
CPS funds credible, independent research worldwide that provides science-based produce safety solutions that can be implemented in the real world.

Knowledge closes the loop.
CPS then transfers that knowledge and tools to industry and other stakeholders through our annual Research Symposium, our website, webinars, guest columns in key trade press outlets, and other outreach.

FROM THE CHAIR

What conversations are *you* having?

The coronavirus pandemic has brought tremendous upheaval, including to the fresh produce supply chain. Much has been lost by so many; we grieve for and with them.

At the same time, the demands of safeguarding fresh produce remained constant. So, many have risen to – and above – circumstances. This includes the diverse community that is the Center for Produce Safety (CPS). This report recounts some of that community's extraordinary work in 2020 to fund the science, find solutions and fuel change in fresh produce food safety.

That CPS is persevering through these times gives testimony to the value the center provides. CPS's work is fostering new conversations about fresh produce food safety, a few of which you will read about here. Hard topics are being broached, closed doors are opening, new relationships are being forged that I could not have imagined 10 years ago. We have made good progress; there is much work yet to be done.

What conversations are *you* having? Is your team discussing how to adapt key learnings from CPS research to improve your produce safety efforts? Are you advising researchers so that they can do their best work for you? Are you giving generously to CPS? By the end of 2020, dozens of companies had quietly contributed to CPS's new capital fundraising campaign. At the height of a global crisis that shook us all to our cores. Knowing it would be months before they were publicly recognized.

Now let's add your name to this list of leaders.

I thank Dave Corsi for his service to CPS. Dave served as CPS's board chair and passionate advocate for an unprecedented two years. I also thank my fellow board directors for keeping us laser-focused on the mission this past year. They are leaders among leaders.

Vic Smith
Chair, CPS Board of Directors
President and CEO, J.V. Smith Companies

"That CPS is persevering through these times gives testimony to the value the center provides. CPS's work is fostering new conversations about fresh produce food safety. Topics have been broached, doors have been opened, relationships have been forged that I could not have imagined 10 years ago. What conversations are *you* having?"

2020 YEAR IN REVIEW

Finding opportunity amidst challenge

Funding **Science**

Foodborne pathogens don't pause for a pandemic. So in 2020, neither did the Center for Produce Safety community.

Moving forward: Determined that CPS's fresh produce-centric food safety research program must progress, our Technical Committee mastered virtual meetings before most of us had heard of Zoom.

Needs-focused: After assessing produce safety priorities, the committee boiled out CPS's newest call for research proposals to answer industry's burning questions – about agricultural water treatment, cleaning and sanitizing facilities, sanitizing organic produce and more.

Research at the speed of now: The 40+ committee members gathered virtually for marathon meetings to review more than 50 research proposals, ultimately funding 14 new projects at $3.3 million.

Guided by industry expertise: A legion of volunteers selflessly gave their time to help researchers design and conduct studies to best meet industry needs.

Finding **Solutions**

When the pandemic threw wrenches into their plans, CPS-funded researchers employed them to:

Lower hurdles: Can't travel to the field to pull samples? Hire a local to get it done. Can't access university computers because of campus closures? Crunch the data at home. Our scientists got creative to continue their work during shut-down.

Keep pace: When the pandemic halted CPS's usual in-person visits, the center hosted virtual site visits to connect researchers with industry sources to ensure their research stayed on track.

Reach finish lines: Our researchers completed a whopping 17 projects in 2020, another 11 in early 2021.

Fueling **Change**

This challenging year actually spurred new opportunities for CPS's Knowledge Transfer Task Force to pass on our research learnings to a much larger audience of industry and other stakeholders:

Virtual symposium: Unable to convene in person, our annual Research Symposium morphed into five topical webinars that allowed hundreds more people to participate.

Free of charge: Our event sponsors generously pivoted to allow CPS to conduct these webinars at no charge to attendees.

In the news: Numerous trade media outlets generously reported about CPS throughout the year, using their trusted voices to notify industry about research learnings and other CPS news.

By the Numbers

Annual Research Program Projects Funded
14

Value:
$2.7 million

Projects Funded To Date
187

Value:
$22 million

Countries
5

Institutions Funded
44

Virtual Research Symposium

Webinars	Research Reports	Posters	Attendees
5	26	11	1,548

Research Project Updates

By Email	Trade Press Columns	Minute Videos
11	6	11

Funding our collective future

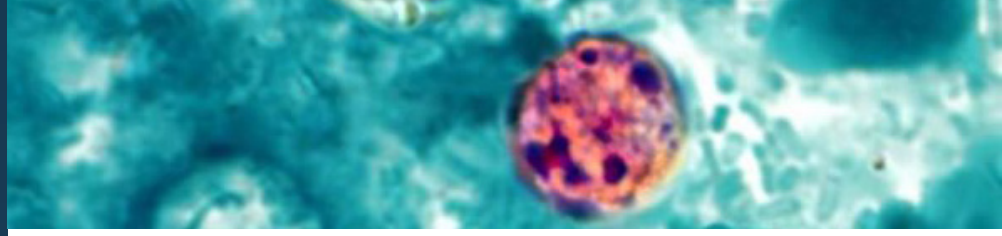
Popular wisdom tells us that we find out who our friends during a crisis. In 2020, a village rose up to stand by CPS's side, committed to continuing our work.

Early in the year, CPS began the "quiet" phase of a new fundraising campaign to finance CPS for the next five years. Then life – and business – around the world was suddenly and profoundly disrupted.

Despite the pandemic's challenges and uncertainty, dozens of leaders from across the supply chain pledged to fund CPS's future. They hailed from organizations large and small, public, private and nonprofit, growers, processors and their suppliers. They gave to safeguard the health of fresh produce consumers, and our industry's collective future in the process.

By the end of 2020, before the campaign was even publicly announced, these leaders had committed nearly $5 million – one-quarter of CPS's $20 million campaign goal.

This report includes a list of 2020 campaign contributors. To add your company's name, contact CPS staff.



SPOTLIGHTS: Fueling Change, Changing the Conversation

When an industry sector needed immediate food safety answers, Center for Produce Safety reached across oceans to get the research done. When a deadly pathogen was found to be endemic to the United States, CPS moved quickly to fund research to advise U.S. growers. When new U.S. regulations made assumptions about pathogen die-off rates, CPS researchers tapped their global networks to bring clarity.

The stories that follow are just a handful of examples from 2020 of how the CPS community is working to change the conversation about fresh produce food safety.

"[*Cyclospora*] is a hot topic, and growers could choose not to look until they have to. Instead, they trust that this is for the betterment of not just [area] growers but the industry in general."

Mia Mattioli, Ph.D.,
Centers for Disease Control and Prevention

Unraveling an Emerging Mystery

Conventional wisdom long assumed that the parasite *Cyclospora* was not endemic to the United States. Then recent illnesses caused by *Cyclospora cayetanensis* were tied to U.S.-grown produce.

This prompted Center for Produce Safety to fund $2 million in *Cyclospora*-specific research, including three projects launched in 2020. These studies seek to map the presence of *C. cayetanensis* in U.S. agricultural waters, and to arm the fresh produce industry with better tools to identify and eliminate it.

In Georgia, a team led by Centers for Disease Control and Prevention's Mia Mattioli, Ph.D., is looking for *Cyclospora* in surface waters used for agricultural irrigation, as well as in potential contamination sources around growing environments. This two-year project started Jan. 1, 2020.

Mattioli credits the rapport co-principal investigator Andre Luiz da Silva, Ph.D., at University of Georgia's Tifton extension program, has with growers for opening doors.

"[*Cyclospora*] is a hot topic, and growers could choose not to look until they have to," she says. "Instead, they trust that this is for the betterment of not just [area] growers but the industry in general."

Meanwhile, the University of Georgia's Ynes Ortega, Ph.D., is looking for *Cyclospora* in Florida and California production areas. This work could help industry make informed decisions about where and when to sample for *Cyclospora*, and ultimately lead to simple, rapid sampling and testing methods.

At the same time, a team led by University of Delaware's Kali Kniel, Ph.D., is looking for *Cyclospora* in the mid-Atlantic states of Delaware, Maryland and Virginia. They've initially found that about one-third of water samples are presumed positive for *Cyclospora*.

Kniel is working with Manan Sharma, Ph.D., USDA Agricultural Research Service, to evaluate use of zero-valent iron – a byproduct of steel production – as a potential filter to remove *Cyclospora* oocytes from water.

"Filtration … should improve the microbiological quality of water, and help in compliance with water quality standards," Kniel says. She stresses filtration would be in addition to good agricultural practices (GAPs) and sound cold-chain management.

Together, this research will paint a broad picture of *Cyclospora* prevalence in U.S. waters, to better inform industry risk assessments – and to give the industry better tools to test for and remove this challenging pathogen.

Looking for Produce Safety Game Changers

Search the audience each year at Center for Produce Safety's annual research symposia, and you will find a delegation from Dole Food Company. They attend to gather learnings to inform the company's food safety program, then transfer that knowledge to the rest of Dole's food safety team, and to the company's management chain.

"I challenge my team to put on their business hat," says Natalie Dyenson. She is Dole's global vice president of food safety and quality, and a member of CPS's Board of Directors. "Then they listen with a different mindset."

"It helps them understand not just that, hey, this is cool science, but also that this cool science can help us solve a problem that we have in our business." She says they are tasked to "look for game changers."

Dyenson notes that as a result of its knowledge transfer focus on CPS-funded research, Dole has been able to leverage numerous CPS research reports. Channah Rock, Ph.D.'s 2019 work on irrigation water treatment. Martin Wiedmann, Ph.D.'s U.S. listeria atlas. Laura Strawn, Ph.D.'s research about potential points for listeria contamination across the supply chain. Ana Allende, Ph.D.'s modelling of peak wash water efficiency. A CPS project helped Dole get to the root cause of a contamination threat, generating substantial ROI for the company.

Dyenson's team also considers whether technology emerging from CPS research could be implemented in or adapted to Dole's operations. They might then cooperate with researchers to advance their work, for example by inviting researchers to conduct real-world validation studies in Dole plants – something that otherwise would be out of researchers' reach.

"CPS fills a very important need for the industry," says Dyenson. "It creates a forum for industry, regulators and academia, for very targeted and focused research that fills a need for industry, and then provides vehicles for getting that information out.

"I don't think that food safety in the produce space would have advanced as much as it has had CPS not been around," she says.

"Better food safety is better business. There's always a way to make the business better by enhancing our food safety program... I don't think that food safety in the produce space would have advanced as much as it has had CPS not been around."

Natalie Dyenson, *Global Vice President of Food Safety and Quality, Dole Food Company*

Reaching Across Oceans for Answers

The California stone fruit industry was thrown a curveball in 2020, when a foodborne illness outbreak traced back to peaches from a state grower/packer didn't find the smoking gun, but did raise related questions.

With Center for Produce Safety's help, the industry reached across an ocean to seek answers.

"[This] *Salmonella* outbreak caused the stone fruit industry to reassess the potential risk of contamination occurring within the orchard environment, particularly near animal agriculture operations," says George Nikolich, independent industry consultant. "For the past 10 years or so, our focus had been on listeria [and] what we needed to do within the packing environment."

Wanting to move quickly, at Nikolich's urging California Fresh Fruit Association (CFFA) contacted Center for Produce Safety. At the time a CFFA board director, Nikolich is also on CPS's Technical Committee. University of California-Davis' Trevor Suslow, Ph.D., a CPS-funded researcher himself, suggested a counter-seasonal project in Australia. The five-month project was funded half by industry funds collected by CFFA, half by CPS.

"It was too late in the season to think about doing anything in our own orchards in California, so we leveraged relationships that had been established between CPS and [Australia's] University of Sydney," says Nikolich.

University of Sydney's Robyn McConchie, Ph.D., assembled a team led by principal investigator Kim-Yen Phan-Thien, Ph.D. McConchie had consulted with CPS leadership in 2012 to found Australia's own Fresh Produce Safety Centre.

"The goal of this research is to use the peach counter-season production period in Australia to identify potential pre-harvest and post-harvest treatments for control of *Salmonella spp.* on peach surfaces" in both the orchard and in the packinghouse, says McConchie. Her team will report their findings in early 2021, ahead of the U.S. peach season. Those findings may be relevant beyond stone fruits, to the tree fruit industry at large.

Nikolich is certain that this project could not have happened without CPS's involvement.

"To get something going that is relevant, that will be of immediate value to industry, and to do it on such short notice and be able to rally the necessary experts is unique in my experience to Center for Produce Safety," he says.

"We find CPS a really supportive and open organization to work with. They have been a great resource in sharing their knowledge and experiences, and inspiring our industry to support research and outreach in food safety."

Robyn McConchie, Ph.D.,
University of Sydney

Bottom photo: Assessing tree uniformity for preharvest trial to minimize risk of Salmonella *on peaches.*

Study Looks at Ag Water Treatment Options – and Effects

In 2019, Center for Produce Safety revamped our research program to be more flexible, and responsive to industry needs. We also prioritized study of agricultural water treatment. One of the first research projects funded sought to quickly answer two critical questions: How do we effectively treat ag water? Without harming plant or soil health?

In June 2020, CPS stakeholders got an update on that study from University of Arizona's Channah Rock, Ph.D., during Session V of our Research Symposium webinars. Slowed slightly by pandemic shutdowns, Rock will present her team's final findings at CPS's 2021 symposium webinars.

Rock's project seeks to give industry real-world solutions for natural hazards that have been called out by recent outbreak investigations. "Ultimately we want to reduce *E. coli* in the environment and in water, but also to save growers money and time," she says. "We're helping to find that sweet spot where industry can be successful, and also reduce the risk of human exposure to pathogens."

Rock's team is evaluating treatments including chlorine-based, peroxyacetic acid and ultraviolet light. "While many growers have been treating water for years, we haven't had an intensive evaluation of treatment technologies at field scale under real-world growing conditions – how are they implemented, do they work, and do they work well. What control measures can we put in place to… make agricultural water a non-issue, so we can focus on other areas?" she says.

This study also looks at how water treatments impact plant tissue and soil health. "A big question that we've gotten from industry is, 'Okay, I've got to start treating my water, I'm okay with that. Am I going to now have unproductive land?' That would be devastating," says Rock.

Rock notes this project is extraordinary on several levels, which she attributes to CPS's unique approach. The speed with which it moved from concept to conduct. That it has been grounded in industry input from its start. And a high level of cooperation – from donors who matched CPS funds, to local growers who welcomed Rock's team into their operations, to sanitation solution providers who donated chemistries. Big picture, Rock notes CPS is nurturing a community of researchers to focus on fresh produce food safety.

"It's an amazing thing to be doing research that quickly, then actually see your results getting used to change behavior quickly as well… With CPS, we are able to get [our research out] across the country, and the world," says Rock.

Students and staff of the University of Arizona Maricopa Agricultural Center collect water samples from sprinkler heads in a field of romaine lettuce to assess the effectiveness of treatments to reduce bacteria.

"What control measures can we put in place to … make agricultural water a non-issue, so we can focus on other areas?"

Channah Rock, Ph.D.,
University of Arizona

Informing FSMA's Water Quality Rule

The Food Safety Modernization Act's water quality rule allows use of water exceeding safety levels on a crop, if growers wait a prescribed time before harvest. That time makes assumptions about pathogen die-off rates. But existing science didn't agree whether those assumptions were valid. In 2020, an international CPS-funded study shed new light.

Cornell University's Renata Ivanek, Ph.D., had two goals:

- to document die-off rates of key pathogens across growing regions, crops and weather conditions; then
- develop a model to help growers predict pathogen die-off.

She presented findings at CPS's 2020 Research Symposium webinar Session V, summarized in webinar key learnings.

"Attributing pathogen presence to weather is difficult," says Ivanek. "The only way you can address the question is to create a study where you have replicates – exactly the same experiment in different locations, and in the same location multiple times."

That's exactly what Ivanek's team did. Cornell's Martin Wiedmann, Ph.D., managed New York locations; California sites were overseen by Trevor Suslow, Ph.D., University of California, Davis. Managing field sites in an area of Spain similar to Yuma, Arizona's climate was Ana Allende, Ph.D., Spanish National Research Council. Mathematician Daniel Munther, Ph.D., Cleveland State University, tackled modeling.

A CPS-funded team studied pathogen survival rates on leafy greens plots in multiple climates.

"When a [CPS] study is done, it isn't just black and white letters on paper. It goes out and the industry starts using it. That is quite unique."

Renata Ivanek, Ph.D.,
Cornell University

"We knew each other, there was a great level of trust from prior work [together]. So we knew we could run this experiment. CPS recognized that," says Ivanek.

Ivanek's team replicated field trials in each climate location, applying weakened *E. coli* and *Salmonella* to plots of baby lettuce and spinach. After inoculation, researchers collected produce samples at seven different intervals – more than 5,000 in all. Weather conditions were also tracked.

Ivanek documented clear relationships between weather conditions and pathogen die-off. For example, "low relative humidity is better for food safety," she says. The produce item and pathogen were also factors. For example, both pathogens died off faster on lettuce than spinach; *E. coli* died off faster than *Salmonella*.

The team then developed a mathematical model to predict die-off as a function of bacteria type, produce type, dew point and relative humidity. This model has since been validated using independent historical data. It appears to predict die-off rates substantially better than the FSMA matrix, suggesting the rule should be updated.

Ivanek lauded CPS for bringing researchers and industry together to focus and improve research. She also calls CPS a knowledge transfer "loudspeaker." "When a [CPS] study is done, it isn't just black and white letters on paper. It goes out and the industry starts using it. That is quite unique," she says.

Closing Listeria Gaps, While Opening Doors

Recognizing the threat *Listeria monocytogenes* (*Lm*) poses to whole fresh produce, Center for Produce Safety has called for research to close knowledge gaps across the supply chain. Virginia Tech's Laura Strawn, Ph.D., answered the call, reporting out her findings at CPS's 2020 Research Symposium webinar series' Session I, summarized in webinar key learnings.

"We didn't have a lot of data to give [industry] on what's risky, what's not, and what they can control to limit risk," says Strawn. She had three goals:

- scrape the literature for known science about *Lm* growth and survival on fresh whole produce;
- fill knowledge gaps in a safe laboratory setting; and
- develop models to help industry forecast and combat risk from *Lm* contamination.

To simulate real-world conditions, Strawn's team contaminated 10 commodities at low levels with a 5-strain cocktail of *Lm* associated with fresh produce, then held them at temperatures replicating cold storage, retail cold cases, room temperature and temperature abuse. Rutgers University's Don Schaffner, Ph.D., used Strawn's data to model *Lm* survival and growth.

Strawn documented that commodity/surface, holding conditions and initial pathogen load significantly affected *Lm*. "Temperature control was a critical driver of *Lm* growth," says Strawn. Cooler temperatures had slower growth rates."

Schaffner's work validated that Combase – an open-access food microbiology database – is generally reliable to forecast *Lm* risk for produce items, excluding tomatoes.

Strawn's project was notable because CPS funded it with a Specialty Crop Block Grant from Texas Department of Agriculture. Such grants augment industry contributions to CPS.

"Everything I do with CPS is driven to and by the industry. I encourage all researchers… to listen and learn from industry – research investments return better when they match real-world conditions."

Laura Strawn, Ph.D.,
Virginia Tech

Strawn is also among a handful of young researchers CPS has nurtured to focus on produce food safety. She was introduced to CPS while working on her Ph.D., when she staffed a research symposium. "The prize was we got to mingle with people from top industry companies," Strawn laughs. CPS funded Strawn's first research project, studying cantaloupe food safety.

"I have nothing but love for CPS," says Strawn. "They do a wonderful job of funding new researchers and giving us the tools to grow. I wouldn't be where I am in my career today without CPS connecting me to industry professionals who took time to mentor and talk to me about real-world situations… who summed up the nuts and bolts I needed to pay attention to, to solve food safety issues."

As a result, "everything I do with CPS is driven to and by the industry," she adds. "I encourage all researchers… to listen and learn from industry – research investments return better when they match real-world conditions."

2020 FINANCIALS

Funds in: Center for Produce Safety is funded by diverse public and private sources. Industry funds come from across the fresh produce supply chain, from farm to grocer to foodservice. Public funds come from grants made by major specialty crop-producing states.

Funds out: The vast majority of CPS's funds are spent to sponsor produce safety research, and to transmit key learnings to the many and varied stakeholders of produce safety.

Research	$2,473,411	80%
Operational	$530,891	17%
Symposium	$84,950	3%
Total Income:	$3,089,252	

Research	$2,628,103	86%
Operational	$302,670	10%
Symposium	$111,905	4%
Total Expenses:	$3,042,678	
Net income	$46,574	

Research	$3,227,975	79%
Operational	$553,797	14%
Symposium	$285,642	7%
Total Income:	$4,067,414	

Research	$3,340,769	84%
Operational	$364,701	9%
Symposium	$286,764	7%
Total Expenses:	$3,992,234	
Net income	$75,180	

"Advisories and recalls can have a profound impact, affecting not only supply but also consumer confidence. Failure in any part of our industry ultimately impacts the industry as a whole. Contributing to CPS is an easy way to support the needs of the industry and to advance food safety for the benefit of all consumers."

Julie Olivarria,
Vice President of Produce, Sysco Corporation

The 2020 Year End Financial Statements, Independent Auditor's Report and accompanying Federal Reports and Schedules are publicly available, in accordance with the Federal Uniform Guidance Requirements for Federal Awards, on CPS's website at www.centerforproducesafety.org.

RECOGNITION

2020 Contributors

The dozens of companies that quietly contributed despite pandemic challenges to CPS's latest capital fundraising campaign all exemplify leadership.

Diamond Level Supporters, $1,000,000+
Taylor Farms
Western Growers

Platinum Level Supporters, $500,000 - $999,999
Dole Fresh Vegetables/Dole Food Company

Gold Level Supporters, $250,000 - $499,999
California Fresh Fruit Association
Sysco
Tanimura & Antle
Washington State Tree Fruit Association

Silver Level Supporters, $100,000 - $249,999
Lipman Family Farms
California Cantaloupe Advisory Board/California Melon Research Board
JV Smith Companies
Promotora Agricola El Toro
Western Precooling
Grimmway Farms/Cal-Organic
McEntire Produce, Inc.
Driscoll's
Food Safety Net Services (FSNS)
The Giumarra Companies
GreenGate Fresh
iFoodDecisionSciences, Inc.
Mission Produce, Inc.
organicgirl
Pacific International Marketing
Robinson Fresh
Steinbeck Country Produce

Bronze-Plus Level Supporters, $50,000 to $99,999
The Oppenheimer Group
Amigo Farms
Bonduelle Fresh Americas
California Avocado Commission
DiMare Fresh
GoodFarms
H-E-B
L&M Companies
New York Apple Association
Sunrise Growers Inc., A SunOpta Company
The Wegman Family Charitable Foundation

Bronze Level Supporters, up to $49,999
Church Brothers
Coastline Family Farms, Inc.
Little Bear Produce
Duda Farm Fresh Foods, Inc.
Georgia Fruit & Vegetable Growers Association
Diversified Restaurant Systems, Inc.
Florida Tomato Committee
Pasquinelli Produce Company
Tyger Sales and Marketing, LLC
Wish Farms
National Watermelon Association
Blue Book Services, Inc.
PrimusLabs
Pacific Ag Pak, Inc.

As of June 4, 2021

CPS Board of Directors

Center for Produce Safety's volunteer Board of Directors hails from across the supply chain, and keep CPS focused on our mission.

Victor Smith, Chair*
J.V. Smith Companies

Samir Assar
U.S. Food and Drug Administration

Jimmy Bassetti
J & D Produce, Inc.

Jim Brennan
SmartWash Solutions, LLC

Dave Corsi*
Wegmans Food Markets

Tony DiMare*
The DiMare Company

Natalie Dyenson
Dole Food Company, Inc.

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Thomas Stenzel
United Fresh Produce Association

Tammy Switucha
Canadian Food Inspection Agency

Max Teplitski
Produce Marketing Association

Craig Wilson
Costco Wholesale

Timothy York
California Leafy Greens Marketing Agreement

As of Dec. 31, 2020
** denotes Executive Committee*

"Buyers and consumers depend on our supply chain to produce and deliver food-safe product. I volunteer with CPS because I want to provide my knowledge and experience. I also want to make sure we are staying on the right track with [CPS] research, identifying and mitigating possible risks to our products."

Tony DiMare,
Vice President, DiMare Company

CPS Technical Committee

These unparalleled produce safety experts provide the scrutiny and controls needed to ensure CPS funded research is practical and measurable, and translatable.

Drew McDonald, *Chair*
Taylor Fresh Foods

Rebecca Anderson
GLOBALG.A.P. North America

Tony Banegas
Bonduelle – Ready Pac

Jim Brennan
SmartWash Solutions, LLC

Donna Lynn Browne
Naturipe Farms, LLC

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Sysco Quality Assurance

Jennifer Clarke
California Leafy Greens Research Board

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Western Growers Association

Suresh DeCosta
Lipman Family Farms

Pascal Delaquis
Agriculture and Agri-Food Canada

Bryan DiMenna
BASF

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Miles Chemical Company

Thea Eubanks
organicgirl, LLC

Robert Gravani
Cornell University

Emily Griep
United Fresh Produce Association

Maha Hajmeer
California Department of Public Health

Lianna Kelly
U.S. Food and Drug Administration

Susanne Klose
Fresh Leaf Farms

Greg Komar
California Leafy Greens Marketing Agreement

Sharan Lanini
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Jim Lugg
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Afreen Malik
International Food Safety and Quality Services

Robert Mandrell
Research Scientist

Johnny Massa
Comgro

Jennifer McEntire
United Fresh Produce Association

Danielle Mesa
H-E-B

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RSM Food Safety Service

Anne Morrell
Columbia Fruit Packers

Joelle Mosso
Eurofins US

Gurmail Mudahar
Tanimura & Antle

George Nikolich
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Monica Noble
80 Acres Farms

Elis Owens
BIRKO

Courtney Parker
E.& J. Gallo Winery

Kinsey Porter
North Bay Produce

Walter Ram
The Giumarra Companies

Angie Ramirez
Triangle Farms, Inc./JV Farms Organic, LLC

Keith Refsnider
Driscoll's

Joan Rosen
JC Rosen Resources

Sonia Salas
Western Growers Association

"I volunteer with CPS on behalf of North Bay Produce because we value the science and recognize the importance of providing our members with science-based food safety recommendations that answer the 'why' to the food safety practices they are committed to following every day."

Kinsey Porter,
Food Safety Compliance Coordinator, North Bay Produce, Inc

Vicki Scott
Scott Resources/Arizona Leafy Greens Marketing Agreement

Gurjit Shergill
Food Safety Consultant

Rusbelina Silva
4Earth Farms

Stacy Stoltenberg
Hygiena

Steve Strub
Wegmans Food Markets

Derek Tweedy
Domex Superfresh Growers

Rich Walsh
ECOLAB

As of Dec. 31, 2020

Knowledge Transfer Task Force

These industry influencers help CPS to better communicate what we know to industry, so that industry can implement CPS learnings to better safeguard fresh produce safety.

Doug Grant, *Chair*
The Oppenheimer Group

Dave Corsi
Wegmans Food Markets

Bonnie Fernandez-Fenaroli
Center for Produce Safety

Dave Murray
Andrew & Williamson Fresh Produce/Good Farms

Tom Stenzel
United Fresh Produce Association

Max Teplitski
Produce Marketing Association

Tim York
California Leafy Greens Marketing Agreement

As of Dec. 31, 2020

"Food safety is fundamental - to our business success, to consumer confidence, to supply chain accountability. CPS's inherently collaborative, transformative approach creates value that is irreplaceable. We're grateful to be involved, as it shows industry is taking proactive steps."

Doug Grant,
Executive Vice-President and Chief Operating Officer, Oppy

FROM THE EXECUTIVE DIRECTOR

You are changing the produce food safety conversation

This past year has been difficult and challenging at best. But as is often the case in trying times, beacons of light shine in the darkness. Center for Produce Safety saw more than our share of these lights in 2020, all focused on changing the conversation about fresh produce food safety.

I saw it in the leadership of the Northwest apple industry. When it became clear to our Technical Committee that another tree fruit sector didn't know about relevant apple research, Washington apple leaders reached out to download those learnings. Those conversations saved their tree fruit colleagues years of work and hard-earned grower funds.

I saw it in the volunteerism of our industry's distribution sector, who lined up to be included in Laura Dunn, Ph.D.'s first-ever study of *Listeria spp.* risk in fresh produce DCs. When real businesses inform the research conversation, everyone is more comfortable with the results.

I saw it in the generosity of sanitation solution providers, who donated products to Xiangyu Deng, Ph.D.'s study of whether *Listeria monocytogenes* can become resistant to common sanitizers. His work will bring needed science to the conversation about whether industry should rotate sanitizers as currently recommended by government.

I am grateful to these and many other beacons of light who help CPS persevere – the contributors, volunteer leaders and researchers who are covered in the pages of this report, and so many more. You are changing the conversation about fresh produce food safety, for the benefit of all.

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CPS Executive Director

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