

## People &amp; Places

## New way to keep produce fresh

James Rogers uses natural substances to increase shelf life of fruits, vegetables

By **TIM HEARDEN**  
Capital Press

SANTA BARBARA, Calif. — James Rogers was driving through the iconic Salinas Valley and listening to a lecture on world hunger when he got an idea.

He was working on his doctorate in material sciences at the University of California-Santa Barbara, and his research involved preserving such materials as steel. His studies led to frequent trips up the coast to the Lawrence Berkeley National Laboratory.

“I was cruising up (Highway) 101 ... and listening to an article on world hunger,” Rogers said. “I just happened to be driving through the Salinas Valley at the time and I saw these lush, green fields.

“The question was on my mind, ‘If we’ve got these magical seeds that we can grow in the ground ... how is it still possible that people are going hungry?’” he said. “It seems in theory that we should be able to feed more people.”

That thought led Rogers, 32, and several of his fellow doctoral students to start a company called Apeel Sciences and invent a product called Edipeel, a natural preservative made from food compounds that shippers or retailers can spray on produce to increase its shelf life.

Edipeel is a powdered mixture of different food molecules from unused or discarded plant materials, such as grape pressings from making wine, that are dissolved in water and sprayed on produce.

When it dries, the resulting thin barrier — which is edible and tasteless — slows the rate at which water can get out and oxygen can get in, which keeps the produce fresh, Rog-



Courtesy of Apeel Sciences

James Rogers invented a substance that extends the shelf life of fruits and vegetables.

ers explained.

The product is designated by the U.S. Food and Drug Administration as generally safe to eat, and the Organic Materials Review Institute has approved it for use on organic fruits and vegetables.

Apeel says the spray can effectively double the shelf life of produce and reduce the need for refrigeration.

Rogers worked on Edipeel with Jay Ruskey, an organic grower of caviar limes — a rare citrus fruit that only lasts about a week after picking.

“He was a local guy who had a unique challenge related to perishability on his crop,” Rogers said. “We were able to develop a product for him that he now uses commercially.”

### Natural curiosity

A native of Michigan, Rogers spent his early childhood in a suburb of Detroit, where his father was an engineer for a company that made brakes for large trucks and his mother was a substitute teacher. The family later lived near Vancouver, Wash., where Rogers finished high school.

“I was the kid who always wanted to know what everything was made out of and how it worked,” Rogers said.

Rogers earned dual undergraduate degrees in material science and engineering and biomedical engineering from Carnegie Mellon University in Pittsburgh before advancing to UC-Santa Barbara, where he earned his master’s degree in economics and his doctorate in materials.

Since Apeel was founded in 2012, the company has received \$40 million in funding for developing its products, including grants from the Bill and Melinda Gates Foundation, the Rockefeller Foundation, Powerplant Ventures and other philanthropic and private investors.

### Ending waste

The company’s stated mission is to end food waste and help growers reduce reliance on chemical pesticides, refrigeration and other techniques used for food preservation in favor of more natural solutions.

For Rogers, the effort required what he described as a “crash course” in agriculture.

“I was never directly on the farm,” Rogers said. “In fact, when I called my mom and told her about my idea to help reduce perishability on the planet, she said, ‘Sweet-

ie, that’s really nice, but you don’t know anything about fruit.’

“We don’t make the fruit any better, we just slow it down from getting worse,” he said.

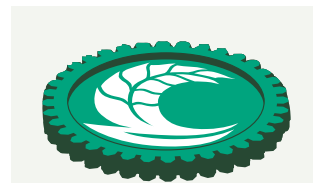
One of the first things he learned is Americans throw away one-third to half of what is grown, and the developing world discards as much as two-thirds of what is grown, he said.

“I thought, Gee, it doesn’t sound like the problem is on the production side. It sounds like the problem is with the storage ... after it’s harvested,” he said.

Rogers discovered that the leading causes of perishability in fruits and vegetables are water loss and oxidation.

“This started to ring a bell from my undergraduate days at Carnegie Mellon when I studied steel,” he said. In refining metals, a micro-thin oxide or nitride layer acts as a shield against deeper corrosion....

“If people are going hungry not because of lack of production but because of perishability of fresh produce, what’s causing the produce to perish is water loss and oxidation,” Rogers said. “It’s a sim-



## Western Innovator

### James Rogers

Age: 32

Residence: Santa Barbara, Calif.

Occupation: Apeel Sciences owner and chief executive officer

Honor: Received the 2012 Frank J. Padden Jr. Award for polymer physics, the premier polymer physics prize in the U.S.

Website: <http://apeelsciences.com/>

ilar problem that steel had that was solved by a thin barrier around the outside.

“We thought, What if we could take food, find materials we need to create a barrier in food and then reapply it to food?” he said. “How could you argue with that philosophically?”

Rogers believes Edipeel could be particularly useful in some developing nations where access to refrigeration is limited. The company is now researching use of the spray before harvest as an alternative to chemical fungicides and pesticides.

Since fungi and insects use molecular recognition on the surface of the fruit, Rogers and his colleagues are testing whether they can “camouflage” the fruit to avert attack by pests.

Rogers said he doesn’t plan to sell his invention to a major company and do something else.

“There’s no get-rich-quick scheme on our part,” he said. “We’re really committed to sticking around and making this thing happen.”

## Farm Bureau awards scholarships to Oregon college students

By **ALIYA HALL**  
Capital Press

The Oregon Farm Bureau Foundation for Education has announced the 12 students who have received the Memorial Scholarship and the one student who received the Associate Award.

Students Jessica Carter of Grant County and Ryan Holmes of Klamath County each received a \$1,500 OFB Memorial Scholarship.

The students who received \$1,000 OFB Memorial scholarships were: Sarah Michaels, Douglas County; Jacob White, Harney County; Emily

Iverson, Clackamas County; Maria Grossen, Washington County; Amy Swenson, Umatilla County; Conor McCabe, Clackamas County; Claire Hammond, Harney County; Stormy Scharzenberger, Multnomah County; Elizabeth Brentano, Marion County; and Carlee Morton,

Malheur County. Kelley Duggan of Deschutes County received the OFB Associate Scholarship funded by Country Financial. The scholarship amount was not disclosed.

Applicants for the OFB Memorial Scholarship must be preparing for a career in

agriculture or forestry, but the Associate Scholarship is open to any major.

The scholarship program is open to new and continuing full-time students. Applicants must be an Oregon high school graduate or a home school graduate, the OFB press release said.

## Calendar

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To submit an event go to the Community Events calendar on the home page of our website at [www.capitalpress.com](http://www.capitalpress.com) and click on “Submit an Event.” Calendar items can also be mailed to Capital Press, 1400 Broadway St. NE, Salem, OR 97301 or emailed to [newsroom@capitalpress.com](mailto:newsroom@capitalpress.com).

### Friday, Aug. 25-Monday, Sept. 4

Oregon State Fair. 10 a.m.-10 p.m. Oregon State Fair & Exposition Center, 2330 17th St. NE, Salem, Ore. Website: <https://oregonstatefair.org/>

### Through Sunday, Aug. 27

Western Idaho Fair, noon-11 p.m. Western Idaho Fairgrounds, 5610 Glenwood St., Garden City, Idaho. Website: <http://www.idahofair.com/>

### Saturday, Aug. 26

Oregon Aglink Barn Dance. 6-10 p.m. Victor Point Farms, 13166 Riches Road SE, Silverton, Ore. Ben Rue will be the featured performer. Over 21, please. Tickets are \$75 and available online only. Website: [www.Aglink.org](http://www.Aglink.org)

### Saturday-Sunday, Aug. 26-27

Importer Safety Training. 8 a.m.-5 p.m. Monarch Hotel, 12566 SW 93rd St., Clackamas, Ore. Food Safety Modernization Act training for the safe importation of human or animal food. Two-day course with Food and Drug Administration standardized curriculum. Certificates awarded upon completion. Cost: \$850. Website: <http://www.feedpctraining.com/fsvp.html>

### Sunday, Aug. 27

Summer Farm Day. Noon-4 p.m. Ruby & Amber’s Farm, Dorena, Ore. Sponsored by the Willamette Farm & Food Coalition. Website: [willamettefarmandfood.org](http://willamettefarmandfood.org)

### Wednesday, Aug. 30

Grazing Lease Workshop. 9:30 a.m.-noon. Stanislaus County Farm Bureau, 1201 L St., Modesto, Calif. Speakers will include certified rangeland managers Tim and Clayton Koopmann, who will discuss identifying land and preparing lease proposals. The California Cattlemen’s Association is the sponsor. Cost: Free. Website: [calcattlemen.org](http://calcattlemen.org)

Rice Experiment Station Field Day. 8 a.m.-4 p.m. Rice Experiment Station, 955 Butte City Highway, Biggs, Calif. Website: <http://cesutter.ucanr.edu/>

### Wednesday-Friday, Aug. 30-Sept. 1

Idaho Grower Shippers Association 89th Annual Meeting. Sun Valley Resort, 1 Sun Valley Road, Sun Valley. On behalf of the board of directors and convention committee chairman Weston Crapo, members are cordially invited to join the IGSA for education, fun and business at its 89th Annual Convention in Sun Valley, Idaho. Website: <http://bit.ly/2WkjkQU>

### Friday, Sept. 1-Saturday, Sept. 9

Eastern Idaho State Fair. 8 a.m.-10 p.m. Eastern Idaho State Fairgrounds, 97 Park St., Blackfoot, Idaho. Website: <https://funatthefair.com/>

### Friday, Sept. 1-Sunday, Sept. 24

Washington State Fair. 10 a.m.-10 p.m. Fairground in Puyallup, 110 9th Ave. SW, Puyallup, Wash. The Washington State Fair, commonly referred to as the Puyallup Fair, is the largest single attraction held annually in the state of Washington. Closed Tuesdays and Sept. 6. Website: [www.thefair.com/](http://www.thefair.com/)

### Tuesday-Friday, Sept. 5-8

Western Apicultural Society’s 40th annual conference. University of California-Davis Harry H. Laidlaw Jr. Honey Bee Research Facility, Davis, Calif. Bee Culture magazine editor Kim Flotton will address “The Rapidly Changing Bee Scene;” beekeeper and author Les Crowder will discuss managing honeybees in top bar hives; and bee expert Larry Connor will cover “Keeping Your Bees Alive and Growing.” Cost: \$225. Website: [www.westernapiculturalsociety.org/](http://www.westernapiculturalsociety.org/)

### Tuesday-Thursday, Sept. 5-7

The National Heirloom Expo. Sonoma County Fairgrounds, 1350 Bennett Valley Road, Santa Rosa, Calif. The 6th Annual National Heirloom Exposition will feature a wide array of natural vendors and speakers from across the country and beyond. Website: [www.theheirloom.com](http://www.theheirloom.com)

### Wednesday, Sept. 13

FSPCA Preventive Controls for Human Food — One-Day Blended Course. 8 a.m.-5 p.m. Hilton Garden Inn, 1741 Harrison St., Twin Falls, Idaho. The new Food Safety Modernization Act regulation

requires every processing facility to have a trained resource person or “Preventive Controls Qualified Individual” who has completed a specialized training course (such as this one) that was developed by the Food Safety Preventive Controls Alliance and is recognized by the FDA. This person will oversee the implementation of the facility’s food safety plan and other key tasks. Jeff Kronenberg, an assistant professor at the University of Idaho and Food Safety Specialist at TechHelp, will offer this One-Day FSPCA Blended Course as an alternative to the traditional 2.5-day course. Cost: \$330. Website: [www.techhelp.org](http://www.techhelp.org)

### Thursday, Sept. 14

Food Safety Internal Auditor Workshop. 8 a.m.-5 p.m. Hilton Garden Inn, 1741 Harrison St., Twin Falls, Idaho. A comprehensive audit system is essential to a company’s food safety and product quality. It provides confirmation that systems and procedures are operating effectively and identifies areas that require improvement. The Internal Auditor Workshop will teach you how to conduct internal audits in your facility against one of the GFSI Audit Schemes, which are becoming a standard for the food industry as a tool for assuring food safety and regulatory compliance and have become a customer requirement for many processors. Many of the schemes require formal, documented training for personnel who conduct internal auditing. This one-day course will provide attendees with a full understanding of audit requirements as well as promote personal professional development. Cost: \$330. Website: [www.techhelp.org](http://www.techhelp.org)

### Friday, Sept. 15

2nd Annual Rice Weed Course. 8 a.m.-4:25 p.m. Rice Experiment Station, 955 Butte City Highway, Biggs, Calif. Website: <http://cesutter.ucanr.edu/>

### Saturday, Sept. 23

Goat Education Day. 8:30 a.m.-4 p.m. OSU Southern Oregon Research and Extension Center Auditorium, 569 Hanley Road, Central Point, Ore. Choose four classes from a selection of 11, two in the morning and two in the afternoon, for \$35. Or choose two morning classes and cheesemaking in the afternoon for \$50. Class topics are geared to both beginner and advanced goat owners from Getting Ready for Kidding Season and Holistic Goat Care to the foundations of Nutrition and Feed and the Making of Goat Milk Soaps and Lotions. Presenters include Dr. Charles Estill, OSU veterinarian; Gianacalis Caldwell, author; and Christina Strickland and others from the Rogue Valley Dairy Goat Association. Register online at <http://bit.ly/JacksonGoatEdDay2017> or call 541-776-7371. Ask about a youth discount. Cost: \$35 to \$50. Website: <http://extension.oregonstate.edu/sorec/SF-classes>

### Friday, Sept. 29

Fall Forestry Educational Seminar. 8 a.m.-5 p.m. Cowlit Regional Conference Center, 1900 Seventh Ave. SW, Longview, Wash. Sponsored by the Washington Tree Farm Program, this seminar includes information on managing and maintaining tree farms. ATFS certified tree Farmers are \$70 (\$105 with spouse), others are \$80 (\$120 with spouse). Register by Sept. 8. Website: [watreefarm.org](http://watreefarm.org)

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### Correction

In a story on Page 10 of the July 28 edition, the name of Idaho Fish and Game Department Director Virgil Moore was incorrect.

In a story on Page 9 of the Aug. 18 Nursery special section, the name of Pacific NW Natives was incorrect.

The Capital Press regrets the errors.

### Correction policy

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