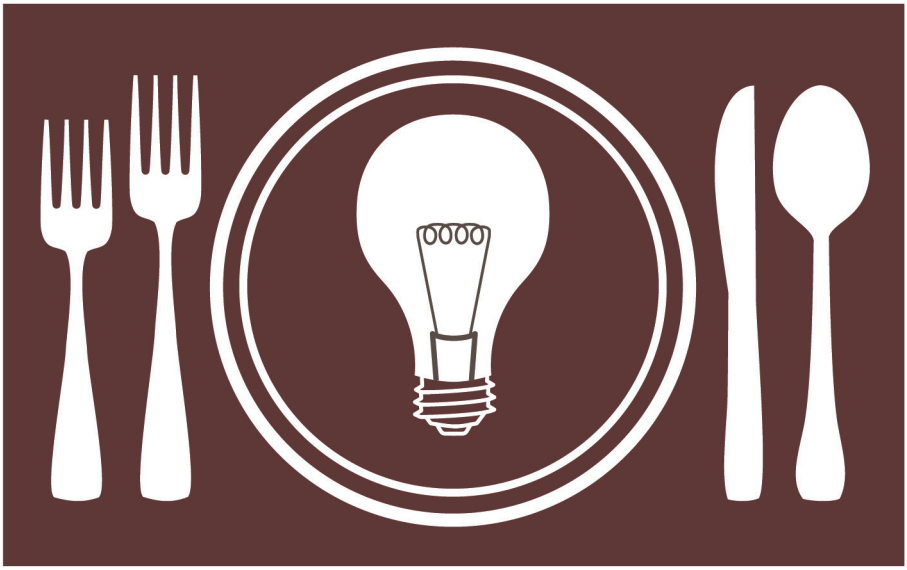
Oakland Unified School District



DINNER with a SCIENTIST

April 24, 2017, 5-8 pm

Welcome to Oakland Unified School District's ninth annual Dinner with a Scientist! We are proud to collaborate with Chevron Corporation, S. D. Bechtel, Jr. Foundation, Chabot Space & Science Center, and many other science organizations in the Bay Area to offer an evening of science exploration and conversation. Science teaching and learning occurs daily in our schools, but seldom do we have the opportunity to connect scientific concepts with the real work of scientists. Tonight is that rare opportunity to converge education with the local scientific community.

I want to especially thank all the scientists, volunteers, and teachers who made this event possible. The field of science is ever changing as evidenced by the diverse group of scientists in attendance. Whether you are a student interested in science, a science teacher, or a scientist working to improve our understanding of the world around us, my hope is that you broaden your perspective through this evening's activities.

Thom Reinhardt
Science Director, OUSD

On behalf of the Chabot Space and Science Center, we would like to thank the Oakland Unified School District for organizing this inspiring and exciting event. We are honored to be a part of an evening that brings together teachers, students, and scientists who are interested and passionate about science. Among us are current and future leaders of the scientific community.

Whether you are aspiring to become a biologist, astronomer, engineer, or just curious about this amazing universe in which we live, we invite you to use the Chabot Space & Science Center to learn more about our world and create solutions to challenging problems. We hope this evening will help fuel new ideas for learning and bring about career opportunities that many youth have never explored or thought about. Thank you for being curious explorers of our world. Have a wonderful evening!

Adam Tobin
Executive Director, Chabot Space & Science Center

Program

4:00	Visit Chabot (optional)
5:00	Registration & Science Activities
5:25	Welcome & Ice Breaker
	Sonnie Dae *Elementary Science Specialist* *Science Department, OUSD*
	Adam Tobin *Executive Director* *Chabot Space & Science Center*
5:50	Dinner & Conversation with Scientist #1
6:20	Keynote
	Lisa D. White *Director of Education,* *UC Berkeley, Museum of Paleontology*
6:45	Dinner & Conversation with Scientist #2
7:15	Raffle
7:25	Dessert & Conversation with Scientist #3
7:55	Appreciations & Conclusion

Menu

Random Leaves & Solutions
Wheat, Yeast, & Garlic Mixture
Extract of Newton's Favorite Fruit
Dihydrogen Monoxide in Two States with Citrus Accents
Sodium Chloride & Piper nigrum
Steamed Random Plant Parts
Grass Seeds & Random Plant Parts
Grilled Poultry with Fungus & Roots
Herbivore Option: Plant Pasta with Marinara Sauce
Heat-Treated Cacao Carbohydrate Solids with Ripened Plant Ovaries
Random Quotes in a Warped Surface

Scientist Biographies

Lisa White Keynote
Director of Education,
UC Berkeley, Museum of Paleontology ldwhite@berkeley.edu

I am the Director of Education at the Museum of Paleontology at UC Berkeley and part of my job includes developing learning materials and museum programs for teachers and students on the fossil record, evolution, and global climate change. As a youth growing up in San Francisco, I loved museums and was drawn especially to the paleontology and geology exhibits. After receiving my PhD in Earth Sciences from UC Santa Cruz, I was a professor of geology at San Francisco State University where I created science field programs for urban youth in outdoor settings, such as the National Parks. I also study small microfossils found in deep ocean rocks and I love sharing my excitement about fossils and the history of life with others!

Alexandra Ramsey Table 14, 13, 15
Graduate Student, UC Berkeley aram781@berkeley.edu

Since my first chemistry class in high school, I knew that science was my passion. After graduating from college with a double major in chemistry and studio art, I decided to continue my chemical education in graduate school at UC Berkeley. While I am still in the first year of my PhD program, I am excited to delve deeper into chemistry as I answer "how?" and "why?" questions and continue learning about the world around me.

Amy Strom Table 1, 3, 2
Graduate Student, UC Berkeley amystrom23@gmail.com

Why can't we live forever? That's the big question driving my research on aging and lifespan. It turns out, most organisms age similarly-- that's why I can use fruit flies to study muscle and neuron degeneration (breakdown) with age, and hope to apply what I learn to the same processes in humans. My fruit flies can live almost twice as long as normal! What would you do if you could double your life span?

Benjamin Kessler Table 10, 12, 11
Biologist, UC Berkeley benjik2013@gmail.com

I am a biologist, and I'm interested in how and why animals sense the world in the ways that they do. I am especially fascinated by color vision in the animal kingdom. I decided to become a scientist because I love asking questions and I love hanging out with other scientists. I am from Albany, California.

Benjamin Smith Table 25, 27, 26

Microscopist, UC Berkeley Benjamin.smith@berkeley.edu

I am a light microscopist. I get to use high powered lasers to peer deep into tissue, and even watch neurons fire in real-time. In college, I studied biology, chemistry, and physics, as I loved all fields of science. I also worked in a biology lab, and fell in love with the infinite complexity of biology, so I got a PhD in biology. During my PhD, I developed a passion for microscopy and how it combined art with science. You also get to use mathematics, programming, electronics, physics, chemistry, and biology as a microscopist, and these are all things I enjoy. Every day at work is solving a wide diversity of problems, and helping many different researchers make new and amazing discoveries.

Branden Brough Table 9, 8, 7

Deputy Director,
Lawrence Berkeley National Laboratory bbrough@lbl.gov

I have always loved to build things and solve puzzles, so naturally, I became an engineer. While at UCLA I studied nanoscience, which is the science of the extremely small. I used the techniques that are used to make microchips to create tiny devices powered by molecules. Now I work at a government laboratory that helps hundreds of scientists from around the world do nanoscience research projects like 3D atomic resolution microscopy, developing disease detecting deep tissue bioprobes, creating new high performing battery chemistries, and building next-generation microprocessors.

Carlos Serrano Table 27, 26, 25

Electronics Engineer,
Lawrence Berkeley National Laboratory CSerrano@lbl.gov

I graduated in Telecommunications Engineering at INSA Lyon (France) in 2007. I joined Lawrence Berkeley National Laboratory in 2006 as a student and have been working there ever since. My work is mainly focused on building electronics for Particle Accelerators, which are gigantic machines used to smash particles together to understand what matter is made of, how conditions were shortly after the big bang, etc. They can even create small black holes but not strong enough to ever destroy the Earth.

Erin Conlisk Table 13, 15, 14
Researcher,
San Diego State University, UC Berkeley, LBL Erin.conlisk@gmail.com

I decided to become a conservation biologist when I was about 8 years old because I love biodiversity. I then found that I enjoyed a good mathematical puzzle. In my work, I get to do math in service of biodiversity. I create models that help us decide which natural spaces to put aside for nature (conservation biologists call this "reserve design").

Henry Bechtel Table 20, 19, 21
Process Control Engineer,
Chevron Corporation henrybechtel@chevron.com

I spent five years in the military before going to college and studying science. It took a while to believe that science was something that I could do, since none of my extended family members were scientists or engineers. Learning about the chemical elements and how they were organized on the periodic table based on their atomic structure explained so much and got me hooked. Enjoying chemistry and math ultimately led to a degree in Chemical Engineering from UC Berkeley in 2012. I now work as a Process Control Engineer in a refinery where we make the fuel that powers cars, airplanes, and trucks. It's a huge, complex chemistry set!

Howard Matis Table 24, 23, 22
Nuclear Physicist,
Lawrence Berkeley National Laboratory hsmatis@lbl.gov

I am a Physicist at Lawrence Berkeley National Laboratory. I earned my BS from Rensselear Polytechnic Institute and my PhD from the University of Chicago. I do most of my research using accelerators, a large machine that allows scientists to study sub-atomic particles. Presently I am working at an accelerator in New York and at Switzerland's Large Hadron Collider. I have also worked at the South Pole to observe neutrino production from outer space.

Jackson Del Bonis-O'Donnell Table 2, 1, 3
Postdoct Scholar, UC Berkeley jtdo@berkeley.edu

I loved watching science shows on TV when I was a kid and knew that I wanted to grow up to work in a laboratory. I never decided what science I liked most so I do a little of everything! I have degrees in mathematics, physics and mechanical engineering but now I work in a chemical engineering laboratory at UC Berkeley. My work involves combining nanotechnology and biological molecules to create new ways to measure what happens inside our bodies using infrared light.

James Valenti-Jordan Table 3, 2, 1
Food Engineer, Hampton Creek jvalenti-jordan@hamptoncreek.com

I am a Food Engineer with Hampton Creek, which is a startup food company. I've worked at General Mills, Campbell Soup, and Del Monte previously. I studied engineering (applied math) and food science (applied biology and chemistry) in school because I really like eating my lab experiments. As a food engineer, I take new food products from the kitchen and figure out how to make them thousands at a time using really big equipment.

Joe Winer Table 16, 18, 17
Graduate Student, UC Berkeley jwiner@berkeley.edu

I have always been curious about the human brain. As a graduate student at Berkeley, I use a variety of tools to study the brain during sleep. I want to understand why sleep is so important and what exactly is going on in our head for the 1/3 of our day we spend sleeping.

Julie Rorrer Table 17, 16, 18
PhD Candidate, UC Berkeley jrorrer@berkeley.edu

I am a 3rd year chemical engineering PhD student at the University of California, Berkeley. I grew up in Oregon, where natural beauty is everywhere. I decided to study chemical engineering because I have always had a passion for protecting the beautiful world we live in. The goal of my research is to find ways to turn agricultural waste, like corn husks and dead plants, into clean and renewable fuels.

Kaitlin Lawler Table 8, 7, 9
Process Engineer, The Clorox Company kaitlin.lawler@clorox.com

I received my Bachelor of Science in Chemical and Biomolecular Engineering at Georgia Tech. Currently I am a scientist doing product development for Clorox, specifically working with kitty litter. In high school, I enjoyed chemistry and other sciences because I got to discover how the world worked while doing hands-on activities. The best part about being a scientist is that I get to play around in a lab and learn something new every day.

Katie Pfeiffer Table 4, 6, 5
Biochemist, 10x Genomics kpfeif@gmail.com

I grew up in rural Nebraska and I became a scientist because I always wanted to understand the world around me. I became an engineer because I like to solve technical problems and help people. I went to school at UC Berkeley and have worked for Pfizer and Genentech, helping to make drugs for people with cancer. Now I work for 10X Genomics, a company that specializes in DNA sequencing. 10X Genomics is a small company that uses chemistry, biochemistry, computer science, and genetics to help understand the complexity of the human genome and to provide tools to researchers trying to find causes of and treatments for human diseases.

Liz Buzzard Table 21, 20, 19
Brita R&D Engineer, The Clorox Company liz.buzzard@clorox.com

I am a packaging development scientist, and I love conducting experiments on new materials and sketching new packaging designs. I earned my Bachelor of Science degree from the University of Illinois in Materials Science and Engineering. In elementary school I loved building forts, reading, playing sports, and mixing random ingredients together in the kitchen. I love science, because it allows us to be detectives and solve mysteries and problems. It gives us clues as to why something happened and/or how things work!

Malak El-Quessny Table 19, 21, 20
PhD Student, UC Berkeley malakq@berkeley.edu

I grew up in Egypt then moved to the US to go to college in Boston. I always knew I loved biology, so when I went to college, I majored in biology and I was fascinated by the human body - how each cell contains an entire universe that works so elegantly and allows every organ to function differently. I became more curious as to how cells function in the craziest organ of all, the brain. I specialized in neurobiology and did undergraduate research in a lab where I got to work with animals and cells. I then worked at a lab at Harvard with pieces of human brain with microcephaly, a birth defect that causes small brain size. I now study how cells in the retina (the part of your eye that sends signals to your brain about what you see) detects moving light at UC Berkeley.

Matthew Thibodaux Table 23, 22, 24

Control Systems Analyst,
Chevron Corporation mthibodaux@chevron.com

I love math! Really, it's pretty great. Since I was very young, I've been fascinated with being able to use math to describe the motion of objects, the rates and properties of chemical reactions, and to generally learn more about the world around us. In high school and college, my favorite subjects were math and chemistry, so I decided to major in Chemical Engineering at CU-Boulder. I then went to UW-Seattle to earn my Master's Degree in Chemical Engineering. I now use my knowledge in chemical engineering to automate the control of chemical reactions and processes at the Chevron Refinery in Richmond, CA.

Megan Pendleton Table 18, 17, 16

PhD Student, UC Berkeley mpendleton3@berkeley.edu

I am a native Texan who has attended school all across the country. I studied Aerospace Engineering at Georgia Tech for my undergraduate degree and am currently studying Mechanical Engineering at UC Berkeley for my PhD. Mechanical engineering is a very broad field, encompassing topics like robotics and manufacturing. Biomechanics is also part of mechanical engineering that focuses on the human body. My research at Berkeley and NASA focuses on evaluating the strength of your bones. Did you know that when astronauts go to space they lose bone tissue and this makes the bone weak? We do not want astronauts to break a bone when they are in space or when they come back to Earth. So as a scientist and engineer, I investigate what happens to the astronauts' bones in space and how we can keep them strong.

Michael Cabot Table 5, 4, 6

Director of Product Engineering,
Rodan + Fields mcabot@rodanandfields.com

I studied Chemical Engineering at MIT because I enjoyed chemistry and liked learning about the equipment that create chemical reactions. In the past, I was in the food industry. Currently, I work for Rodan + Fields, the largest premium skin care company in the US. I work with Formulation Chemists who create small batches (a couple of pounds) and I work with factories to make larger versions (a couple of tons).

Midori Greenwood-Goodwin Table 7, 9, 8
Scientist, BioTime midorigg@gmail.com

I received my degrees in Chemical Engineering from Northwestern University (near Chicago) and Bioengineering from Stanford University. I've always been interested in asking questions about how our minds and bodies works and now I get to work in stem cell research to find ways to make them work better. Thanks to my background in engineering, I get to build new tools and do biology research in order to help people lead happier, healthier lives!

Morgan Dill Table 12, 11, 10
Naturalist, East Bay Regional Park District mdill@ebparks.org

When I was a kid, I used to spend all of my time exploring outside, turning over logs, building forts, finding flowers and letting bugs crawl on me. I've made it my mission to share science and nature ever since, starting as a nature center volunteer in high school, and after getting a BS in Environmental Science from the University of Notre Dame, migrating to California to share everything from the forest to the ocean at outdoor school, California State Parks, and now as a naturalist at East Bay Regional Park District.

Parker Fagrelius Table 15, 14, 13
PhD Student,
Lawrence Berkeley National Laboratory parkerf@berkeley.edu

I study Cosmology, which is the study of the timeline and composition of the Universe. In particular, I am interested in building new instruments to help us understand the nature of Dark Energy, which makes up most of our Universe. I have always been interested in space and studying the stars, and after I received my bachelor's degree from Dartmouth College, I went to work at the Jet Propulsion Laboratory in Pasadena, CA. While working at NASA/JPL, I worked on an instrument that went on the International Space Station. I wanted to further my education, so I came to UC Berkeley to get more experience building instruments and understanding cosmology. I plan to one day return to NASA to help manage its missions to help us understand our universe.

Rebecca Pinals Table 26, 25, 27
Graduate Student, UC Berkeley rebecca_pinals@berkeley.edu

I am currently a PhD student in chemical engineering at UC Berkeley. The aim of my research is to develop fluorescent sensors that detect specific molecules in biological systems. I do this using the unique optical properties of nanomaterials such as carbon nanotubes and graphene quantum-dots, which fluoresce when certain wavelength light is shined

on them. I knew I needed to study science because I love finding out how things work and using creative problem-solving!

Stefanie Garcia Table 6, 5, 4
Graduate Student, UC Berkeley stefanievgarcia@berkeley.edu

I am an Electrical Engineer at UC Berkeley, and I work on tiny silicon devices that go inside the body to detect radiation for cancer applications. My undergraduate degree was in physics/biophysics. I have a lot of experience working with radiation for health applications and doing mathematics for both semiconductor device physics and medical physics. In high school, physics became really interesting to me because it is a mathematical way that humans describe the observable universe and the world in which we live. I really enjoy travel, hiking, backpacking, and astronomy, and I think that all of my outdoor activities really sparked my overall interest in science, especially interdisciplinary science.

Theresa Matthews Table 11, 10, 12
Process Controls Engineer,
Chevron Corporation Theresa.Matthews@chevron.com

I am a process controls engineer at Chevron. I grew up in Michigan and graduated in 2014 from Purdue University with a BS in Chemical Engineering. I love automation and chemistry, so I'm really excited my job is a mixture of both. Using operating experience, engineering judgment and statistics, I design ways to automatically run the plant as safe and optimally as possible. When not at work, I like to hike, climb, snowboard and bike.

Tianjiao Zhang Table 22, 24, 23
PhD Student, UC Berkeley t.zhang@berkeley.edu

I am a PhD student at UC Berkeley studying neuroscience, particularly vision and navigation. Computers are these amazing machines that can solve almost any problem. But despite all the advances we've made in computer engineering, computers don't even come close to what our brains can do at a fraction of the cost and time. So I went into neuroscience, so I can help understand how this squishy "computer" in our heads works!

Participating Schools

Acorn Woodland, Bella Vista, Burckhalter,
Carl Munck, Chabot, Cleveland, Crocker Highlands,
EnCompass Academy, Franklin, Greenleaf, Hillcrest, Howard,
Joaquin Miller, Kaiser, Laurel, Lincoln, Madison Park,
Montclair, New Highland,
Redwood Heights, RISE, Thornhill

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(Facilities, Donations, Registration, Setup, & Activities)

Keynote Scientist
Lisa D. White

Volunteer Scientists
Alexandra Ramsey, Amy Strom, Benjamin Kessler, Benjamin Smith,
Branden Brough, Carlos Serrano, Erin Conlisk, Henry Bechtel, Howard Matis,
Jackson Del Bonis-O'Donnell, James Valenti-Jordan, Joe Winer, Julie Rorrer,
Kaitlin Lawler, Katie Pfeiffer, Liz Buzzard, Malak El-Quessny,
Matthew Thibodaux, Megan Pendleton, Michael Cabot,
Midori Greenwood-Goodwin, Morgan Dill, Parker Fagrelius, Rebecca Pinals,
Stefanie Garcia, Theresa Matthews, Tianjiao Zhang

Oakland Unified School District
Thom Reinhardt, Beth Keer, Brenda Tuohy, Claudio Vargas,
David Avery, James Narvaez, Laura Prival, Ricky Logan,
Sarah Pipping, Sonnie Dae

Other
Michelle Fabros, Tyler Chuck, Traci Grzymala,
Community Resources for Science (Setup)
Joshua Tworig (Setup)
Lauren Hernele (Photography)
Espresso Gourmet (Catering)

Photos from tonight's event will be available at
http://science.ousd.org