

Oakland Unified School District



# DINNER with a SCIENTIST

May 2, 2012, 5-8 pm

Welcome to Oakland Unified School District's fourth annual Dinner with a Scientist! We are proud to collaborate with Chevron Corporation, Oakland Zoo, S. D. Bechtel, Jr. Foundation, 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.

Caleb Cheung  
*Science Manager, OUSD*

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On behalf of the Oakland Zoo, we would like to thank the Oakland Unified School district for organizing this inspiring, exciting event. We are honored to be a part of an evening that brings together teachers, students, and scientists who are interested and energized about science. Among us are current and future leaders of the scientific community. Also among us are the tireless, extraordinary mentors, the ones that have brought all of us to where we are now - teachers.

Whether you are aspiring to become a biologist, chemist, veterinarian, green engineer, or simply a nature lover, we invite you to explore the Oakland Zoo and be inspired by our animals, research, programs, and plans for the future. 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 passionate about science and have a wonderful evening.

Dr. Joel Parrott  
*Executive Director, Oakland Zoo*

## Program

- 2:00 Visit Zoo (optional)
- 5:00 Registration & Live Animal Encounters
- 5:25 Seating (*table # on name tags*)
- Welcome & Ice Breaker  
*Caleb Cheung, Science Manager, OUSD*
- Welcome  
*Tony Smith, Superintendent, OUSD*  
*Dr. Joel Parrott, Executive Director, Oakland Zoo*  
*Hannah Davies, Chevron Corporation*
- 5:50 Dinner & Conversation with Scientist #1
- 6:20 Keynote  
*Andrea Goodnight, Associate Veterinarian, Oakland Zoo*
- 6:45 Dinner & Conversation with Scientist #2
- 7:15 Raffle
- 7:20 Dessert & Conversation with Scientist #3
- 7:50 Appreciations and Conclusion
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## Menu

Turbulent 530 nm Salad with Various Suspensions & Emulsions  
Triticum Globules  
Malus domestica Extract  
Dihydrogen Monoxide in Two States with Citrus Accents  
Sodium Chloride & Piper nigrum  
Steamed Random Plant Parts  
Oryza sativa Seeds & Plant Material  
Grilled Gallus gallus with Allium cepa & Fungus  
Herbaceous Lasagna  
Heat-Treated Cacao Carbohydrate Solids with Ripened Plant Ovaries

## Scientist Biographies

### Andrea Goodnight

Keynote

Associate Veterinarian, Oakland Zoo

*andreag@oaklandzoo.org*

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I have always been fascinated by animals and their environment. As a veterinarian at the Oakland Zoo, I diagnose and treat a wide variety of diseases in captive wildlife. My current field work is in Northern CA, working with biologists at Sonoma State University to understand the ecology and physiology of the Western Pond Turtle. I hope that my work will encourage further multidisciplinary scientific collaboration to benefit animals in the wild.

### Arunan Skandarajah

Table 1, 4, 3

Graduate Student Researcher

University of California, Berkeley

*arunan@berkeley.edu*

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The idea of creating something, whether it is knowledge about our world or a new tool, had captured my imagination by the time I started high school. I studied Biomedical Engineering so that I could work toward my goal in the context of human health. As a graduate student at Berkeley, I am trying to understand how we work from the cell up and building tools that may help doctors diagnose diseases.

### Charlene Ng

Table 6, 5, 7

Graduate Student

University of California, Berkeley

*charng@berkeley.edu*

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I am a graduate student at UC Berkeley where I study how freshwater rivers deliver both chemicals and plants to the ocean and how this affects animals. I knew I wanted to be a marine biologist the first time I went to the Monterey Bay Aquarium as a child. When I went to college at Stanford University, my favorite class took place underwater! The students and teacher went scuba diving every day to explore the ocean.

### Chris Nasrallah

Table 5, 7, 6

Doctoral Candidate

University of California, Berkeley

*nasrallah@berkeley.edu*

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"Why does that happen? How does this work?" Wanting to answer these questions is why I became a scientist. I love science because it helps me to discover new things about the world around us. I build computer programs that can tell how living things are related to each other by comparing their DNA.

**Darcy Ernst**

Table 8, 10, 9

Graduate Student

University of California, Berkeley

*dfkernst@berkeley.edu*

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I am a graduate student in the Integrative Biology Ph.D. program at UC Berkeley. In the past I have studied ground squirrel behavior and the brains and behavior of giant orange sea slugs. Studying slugs allowed me to SCUBA dive to see them in their natural habitat. Now I study birds and how their hormones respond to the environment to allow them to breed. Whatever the animal I'm studying, I love learning about how the brain controls the behaviors of animals; human behavior is determined in much the same way!

**Elizabeth Donald**

Table 9, 8, 10

Scientist, Science Education Program Leader

The Clorox Company

*elizabeth.donald@clorox.com*

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I am a geochemist, and I love exploring rocks, mixing chemicals, and making new supermarket products! I earned my Bachelor of Science degree from Yale University, and my Ph.D. from Stanford University. Growing up I loved exploring the outdoors and the library, going to new places, and making messes! Science is exciting because it constantly reveals new things about who we are and the universe around us. The best part is that ANYONE can be a scientist!

**Eric Norman**

Table 3, 2, 1

Professor of Nuclear Engineering

University of California, Berkeley

*ebnorman@lbl.gov*

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I am a professor at Lawrence Berkeley National Laboratory. I graduated from Monteria MS and Skyline HS in Oakland. Then I earned my BA from Cornell University. After that, I earned my MS and PhD from the University of Chicago. When I was young, I was the nerdy kid blowing things up in my basement with the chemistry set my parents got me. My dad was a doctor, and he used to help us with animal dissections on our kitchen table!

**Eve Robinson**

Table 20, 22, 21

Graduate Student

University of California, Berkeley

*erobinson@berkeley.edu*

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I am currently a biomechanics graduate student at UC Berkeley researching flow patterns in the ocean to understand how small animals interact with their predators. I study how waves along the California coast affect the plankton that sea anemones can eat. I have worked as a science writer, in marine conservation, and SCUBA dived on coral reefs in Belize, Australia, and along the rocky shores of the Pacific Northwest. I love writing, art, reading, and building things; going into a science career has allowed me to incorporate all of this.

**Felisa Wolfe-Simon**

Table 12, 11, 13

NASA Astrobiology Research Fellow, Lawrence Berkeley National

Laboratory

*felisawolfesimon@gmail.com*

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I am a NASA Astrobiology Research Fellow in residence at the Lawrence Berkeley National Laboratory. I obtained a dual undergraduate degrees in Biology (B.A.) and Music Performance (B.M.) at Oberlin College and Conservatory of Music and went on to earn a Ph.D. in Oceanography at Rutgers University. My interests cover the intersection between biology and geology focusing on astrobiology, the study of life in outer space.

**Gautham Venugopalan**

Table 11, 13, 12

Graduate Student Researcher

University of California, Berkeley

*gautham.venugopalan@gmail.com*

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I'm a PhD student at UC Berkeley. I research how growing cells interact with their surroundings to develop into complex, organized structures. This work will help us to fight cancer. It's really exciting to develop new technology and to try answering questions to which nobody knows the right answer.

**Howard Matis**

Table 7, 6, 5

Staff Physicist

Lawrence Berkeley National Laboratory

*hsmatis@gmail.com*

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I am a Physicist at Lawrence Berkeley National Laboratory. I earned my BS from Rensselaer 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.

**Jared Heymann**

Table 15, 14, 16

R&amp;D Scientist, Product Developer

The Clorox Company

[jared.heyman@clorox.com](mailto:jared.heyman@clorox.com)

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I am a scientist and product developer for the Clorox Company. I grew up in rural Pennsylvania and was the first in my family to graduate from college. Eventually, I earned a Ph.D. in chemistry from Duke University. I have always been interested in understanding how things work. Now, my job is to use science to help millions of people clean their homes more quickly, easily, and safely.

**Jean Alupay**

Table 14, 16, 15

Graduate Student

University of California, Berkeley

[jsalupay@berkeley.edu](mailto:jsalupay@berkeley.edu)

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I am a graduate student in Integrative Biology at UC Berkeley. I study how and why an octopus uses a special defense mechanism called autotomy. You've probably seen autotomy if you've ever grabbed a lizard by its tail and found only the tail in your hand and the lizard escaped. I became interested in marine invertebrates, ecology, and behavior growing up in Santa Cruz with a fisherman father, frequently going to the beach.

**Jeffrey Silverman**

Table 10, 9, 8

Postdoctoral Researcher

University of California, Berkeley

[jsilverman@astro.berkeley.edu](mailto:jsilverman@astro.berkeley.edu)

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I received my PhD in Astrophysics from UC Berkeley and wrote a thesis on exploding stars called supernova. Without supernova the Earth and all living things wouldn't exist! My work involves using some of the biggest telescopes in the world to observe these gigantic explosions. I have always been fascinated by the awe-inspiring beauty of the night sky and the vastness of the Universe. Ever since I was young I have been interested in science and astronomy in particular.

**Jennifer Jacobs**

Table 23, 25, 24

Graduate Student

University of California, Berkeley

[jmjacobs@berkeley.edu](mailto:jmjacobs@berkeley.edu)

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I am a graduate student in Integrative Biology at UC Berkeley. I study how and why an octopus uses a special defense mechanism called autotomy. You've probably seen autotomy if you've ever grabbed a lizard by its tail and found only the tail in your hand and the lizard escaped. I became interested in marine invertebrates, ecology, and behavior growing up in Santa Cruz with a fisherman father, frequently going to the beach.

**Katherine Copic**

Table 13, 12, 11

Staff Scientist, Physics Division

Lawrence Berkeley National Laboratory

*kcopic@lbl.gov*

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I am a physicist at Lawrence Berkeley National Laboratory who looks at data taken by the ATLAS detector from the Large Hadron Collider near Geneva, Switzerland, to learn more about the smallest things in the universe. Inside atoms are protons, neutrons, and electrons. I study quarks- the particles that make up protons and neutrons. So far, scientists have discovered six kinds of quarks. We think there might be more!

**Kirsten Dunatov**

Table 4, 3, 2

Information Technology Business Analyst

Chevron Cooperation

*khdu@chevron.com*

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I am an Information Technology Analyst for Chevron Corporation. When I first started college, I majored in Engineering because I liked Math. After taking a programming class, I switched my major to Management Information Systems because I realized how much fun it was to solve problems with computers! In my job I get to work with people throughout Chevron who work in different parts of the world using software to solve business problems.

**Leona Scanlan**

Table 18, 17, 19

Graduate Student

University of California, Berkeley

*LDS@berkeley.edu*

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I am a graduate student at UC Berkeley studying Molecular Toxicology. For the last five years, I have been studying how chemicals and pollutants in the environment cause toxicity to ecologically important organisms. The reason why I decided to studying this field is because I grew up in an old mining town in California, where the land was contaminated with mercury and arsenic. People were concerned with how contaminants in the environment might affect our health.

**Maynard Holliday**

Table 24, 23, 25

Systems Engineer

Sandia National Labs

*mhollid@sandia.gov*

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I am a senior engineering and robotics professional. Using my knowledge of robotics and intelligent machine systems, I have published and presented my work internationally over the past 25 years. In addition, I won a scholarship to Stanford University and to the International Space University in France!

**Melinda Sievert**

Teen Programs Manager, Oakland Zoo

Presenter

[melinda@oaklandzoo.org](mailto:melinda@oaklandzoo.org)

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I am the Teen Programs Manager at the Oakland Zoo where I get to work with teens and volunteers who want to learn more about animals. I have always loved animals. In high school, I volunteered at the San Francisco Zoo where I learned about biology, taxonomy and animal husbandry. I went to college at San Francisco State where I majored in Environmental Studies.

**Molly Wright**

Graduate Student Researcher

Table 17, 19, 18

University of California, Berkeley

[wrightml@berkeley.edu](mailto:wrightml@berkeley.edu)

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I am a graduate student at UC Berkeley studying mantis shrimps, aggressive crustaceans with limbs that can shatter glass and break bones. Working in coral reefs, I try to figure out if environmental variation affects whether mantis shrimps are monogamous. I hope that my research will help to conserve these charismatic crustaceans and the coral reefs where they live. I became a marine biologist because I love exploring tide pools and coral reefs and studying the creatures that live there!

**Nicholas McConnell**

Graduate Student, University of California, Berkeley

Table 16, 15, 14

[nmcc@berkeley.edu](mailto:nmcc@berkeley.edu)

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I am a PhD student in Astronomy at UC Berkeley. I use giant telescopes to search for supermassive black holes in distant galaxies. When I was young my parents gave me books about dinosaurs and volcanoes and creatures in the deep ocean. I had so many questions about the weird stuff in those books, and I just kept asking questions as I grew up. Now it's my full-time job!

**Onur Ergen**

Graduate Student Researcher

Table 19, 18, 17

University of California, Berkeley

[onurergen@berkeley.edu](mailto:onurergen@berkeley.edu)

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I am a graduate student at UC Berkeley where I am focusing primarily on finding new, low-cost designs and materials for solar energy devices that can meet the growing global energy demand. This work draws from many different disciplines of nanotechnology as well as chemistry. In my research, I use a wide range of instruments and experimental methods. I really like solving puzzles which is why I like science!

**Randolf Klein**

Table 22, 21, 20

Astronomer/Science Flight Planner  
SOFIA / NASA Ames

*rklein@sofia.usra.edu*

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I received my doctoral degree from the University in Jena, Germany and currently work as an astrophysicist at UC Berkeley. My work focuses on two things: Answering the question, "How do massive stars form?" and building instruments. Currently, I am involved in building a 100 inch telescope for NASA's airborne observatory SOFIA (Stratospheric Observatory for Infrared Astronomy) that is on a 747 Boeing jet. It studies how stars form.

**Steve Fournier**

Table 25, 24, 23

Laser Engineer and Project Manager  
Lawrence Berkeley National Laboratory

*DSFournier@lbl.gov*

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I am a Laser Engineer at Lawrence Berkeley National Laboratory where I am in charge of the Laser Group and manager of the Petawatt laser system project. I was born in Quebec, Canada. I studied at the University Laval and at University of Toronto in Canada. Previously, I consultant for a startup company in Quebec as Optical Engineer. I moved to California in 2003 to work for a large laser company and now work form LBNL.

**Susan Tsutakawa**

Table 2, 1, 4

Scientist, Lawrence Berkeley National Laboratory

*setsutakawa@lbl.gov*

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I am working to understand how proteins mechanistically function from biochemistry and structural analysis at Lawrence Berkeley National Laboratory. I have a PhD from UC Berkeley. After I finished school, I lived and worked in Japan. When I was young, I didn't like science, especially biology. Then one summer I washed dishes in a biochemistry lab and learned that science is about finding out the answers to new questions. What fun!

**Vish Mazumder**

Table 21, 20, 22

Product Development Scientist  
The Clorox Company

*vish.mazumder@clorox.com*

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I am currently a Product Development Scientist at the Clorox Company where I get to work on developing new technology for making better products. I earned a Ph. D from Brown University. My experiences in graduate school created a craving to learn about how science affects commercial products.

## Participating Schools

Alliance Academy, ASCEND, Bret Harte Middle School,  
Bunche Academy, Claremont Middle School, Community Day School,  
East Oakland School Of The Arts, Edna Brewer Middle School,  
Frick Middle School, Media College Prep, Melrose Leadership Academy,  
Montera Middle School, Oakland High School,  
Oakland International High School, Oakland Technical High School,  
Roosevelt Middle School, Skyline High School, Street Academy,  
United For Success, Westlake Middle School

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Volunteer Scientists  
*Andrea Goodnight, Arunan Skandarajah, Charlene Ng,  
Chris Nasrallah, Darcy Ernst, Elizabeth Donald, Eric Norman, Eve Robinson,  
Felisa Wolfe-Simon, Gautham Venugopalan, Howard Matis, Jared Heymann,  
Jean Alupay, Jeffrey Silverman, Jennifer Jacobs, Katherine Copic,  
Kirsten Dunatov, Leona Scanlan, Maynard Holliday, Molly Wright,  
Nicholas McConnell, Onur Ergen, Randolph Klein, Steve Fournier,  
Susan Tsutakawa, Vish Mazumder,*

Oakland Unified School District  
*Tony Smith, Caleb Cheung,  
Laura Binczak, Phil Cotty, Ricky Logan,  
Nancy Midlin, Laura Prival, Duffy Ross, Joanna Sperber,  
Claudio Vargas, Elizabeth Woodward*

Other  
*Teresa Barnett (Setup)  
Howard Ruffner (Photography), Eric Saddler (Sound)  
Espresso Gourmet (Catering)*