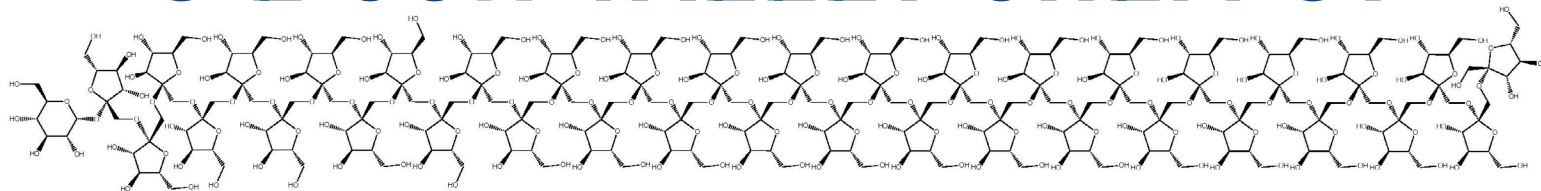


# SILICON VALLEY CHEMIST



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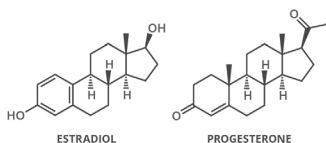
## Remembering and Celebrating Carl Djerassi

"Father of the Birth Control Pill" born 100 years ago on October 29, 1923

### THE CHEMISTRY OF ORAL CONTRACEPTIVES

The first oral contraceptive, norethindrone, was synthesised by Carl Djerassi in 1951. This graphic looks at the range of compounds used and how they work.

#### THE NATURAL HORMONES



Oral contraceptives contain synthetic versions of two hormones produced naturally by the body: estrogens and progestogens. Both hormones have roles in the female menstrual cycle.

#### HOW ORAL CONTRACEPTIVES WORK

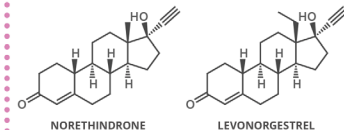


Steady levels of estrogens and/or progestogens in the body as a result of oral contraceptives trick the pituitary gland into thinking a woman is already pregnant, stopping it from releasing hormones that stimulate ovulation, and preventing pregnancy. Progestogens promote formation of a thicker layer of cervical mucus, which makes it difficult for sperm to reach the uterus, and also affect the uterine lining and make it harder for an egg to attach.



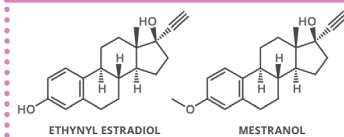
**99.9% EFFECTIVE**  
(WHEN TAKEN CORRECTLY)

#### PROGESTOGENS



Can be used in combination with estrogens, but also on their own in progestogen-only pills. These pills must be taken continuously and within 3 hours of a specific time every day. Recommended for breast-feeding women, as it doesn't affect milk production.

#### ESTROGENS



Combined oral contraceptive pills include an estrogen as well as a progestogen. Most are taken over a 28 day cycle, with 21 pills taken, followed by a week of no pills. They must be taken within 12 hours of a specific time every day to maximise protection.

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[Enlarge image](#) | [Read associated article](#)

This is a guest editorial by Roald Hoffmann of Cornell University, Jeffrey Seeman of the University of Richmond, Bassam Shakhshiri of the University of Wisconsin–Madison, and Richard Zare of Stanford University, published in C&EN on October 23, 2023.

"Carl Djerassi was born 100 years ago next Sunday. We remember him, and in that memory celebrate what it means for a human being to be fully alive. His willfully engaged life illuminates the many dimensions of freedom and the choices we make in a complicated world.

One such freedom is that of life and the remarkable opportunities America offered an immigrant. Oh, may it continue to do so! Carl was a refugee from Nazi Europe who was welcomed in the US. He took every advantage of what the country had to offer to a bright, hard-working youth—Carl completed his PhD at the University of Wisconsin–Madison in 2 ½ years. He remained a citizen of the world as well."

Read the full-text: [C&EN Guest Editorial: Celebrating Carl Djerassi](#) (October 23, 2023)

The Stanford Chemistry Department's [Carl Djerassi in Memoriam](#) page notes:

"A remarkable chemist who produced more than 1,200 scientific papers, Professor Carl Djerassi was also a man of literature and dedicated proponent of the arts. Beginning in the 1940s, he was a key figure in the first syntheses of antibiotics as well as the hormones cortisone and norethindrone. The latter led to development of the first birth control pill, earning Professor Djerassi the moniker "Father of the Pill." He made seminal contributions to tools for structural studies, including mass spectrometry, magnetic circular dichroism and optical rotatory dispersion. In his later years, he focused on his second career, in literature. He wrote poetry and authored many successful plays and novels, weaving science into their storylines. In 1979, he founded the

## Chair's Message

Natalie McClure



Mole Day (October 2023) has come and gone. My attention turns now to turkeys and Thanksgiving. For the Silicon Valley ACS section, it is time to focus on the election of new officers for the coming year. But we can also reflect on the celebration of Mole Day and the National Chemistry Week (NCW) events last month. As I described in my October Chair's message, our section put a lot of effort into National Chemistry Week (NCW). This year's theme was "The Healing Power of Chemistry".

*continued on page 3*

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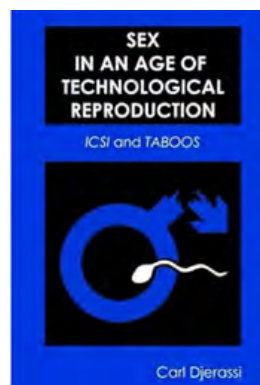
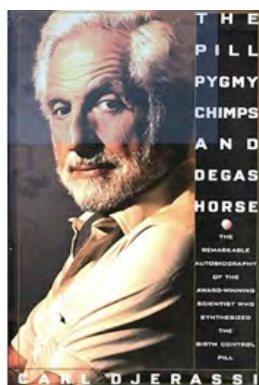
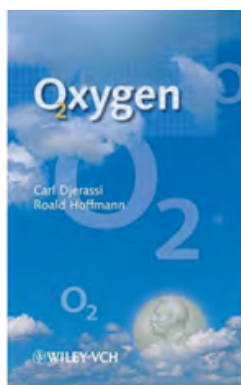
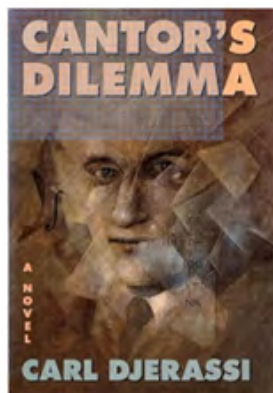
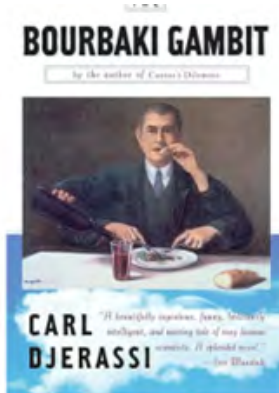
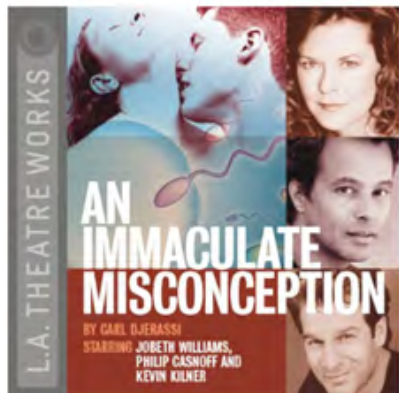
*Celebrating Carl Djerassi, continued from front page*

Djerassi Resident Artists Program near Woodside, California, which has provided artists' residencies to more than 2,000 artists in the visual arts, literature, choreography and music composition since its inception.

Professor Djerassi was born in Vienna, Austria, in 1923 to a dermatologist, and dentist and physician. In 1938 to 1939, he and his mother

moved to Bulgaria, then to the United States, to escape the rise of Nazi rule in Europe. At only 16 he entered junior college, going on to complete his undergraduate studies at age 18 (summa cum laude, Kenyon College). He completed doctoral studies at the University of Wisconsin (PhD 1945) before joining CIBA Pharmaceuticals as a research chemist, where he developed one of the first commercial antihistamines. At 26, he accepted a

position as associate director of research for Syntex in Mexico City. There, he and colleagues advanced hormone synthesis methods, including ones that led to oral contraceptives. He joined the Stanford Chemistry faculty in 1959 as one of the first faculty appointments made by then department Chair William Johnson, becoming a leader in a period that transformed the department and established its world-class standing."



#### Additional information about Carl Djerassi's life and accomplishments:

- Carl Djerassi - Science in Fiction. <https://www.djerassi.com/> Includes biographical sketch, plus literary and scientific biography.
- Hargittai, I. Remembering Carl Djerassi: a centennial. *Struct Chem* 34, 2005–2008 (2023). <https://doi.org/10.1007/s11224-023-02217-w>
- Carl Djerassi, 'father of the pill'. *Palo Alto Online*, Uploaded January 31, 2015. <https://paloaltoonline.com/news/2015/01/31/carl-djerassi-father-of-the-pill-dead-at-91>
- Farm Report: 'A Phenomenon of Nature.' *Stanford Magazine*, March/April 2015. <https://stanfordmag.org/contents/a-phenomenon-of-nature>
- Silicon Valley Historical Society. *An Interview with Dr. Carl Djerassi, Father of the Birth Control Pill and Founder of Syntex*. (3.44 minutes) 2012. <https://www.youtube.com/watch?v=oRSL7BdGIVE>
- Stanford Pioneers in Science: Carl Djerassi on chemistry (video), 2009. <https://searchworks.stanford.edu/view/zw998zj8337>
- Science History Institute. Digital Collections. *Oral history interview with Carl Djerassi* (3:09:00 minutes). July 31, 1985. <https://www.sciencehistory.org/education/scientific-biographies/carl-djerassi/>



- Stanford Theses and Dissertations. Carl Djerassi as Primary Faculty Advisor (64 items). *SearchWorks, the Stanford Libraries Catalog* [https://searchworks.stanford.edu/?f%5Bgenre\\_ssim%5D%5B%5D=Thesis%2FDissertation&q=%22Djerassi%2C+Carl%2C%22&search\\_field=search\\_author&sort=year-desc](https://searchworks.stanford.edu/?f%5Bgenre_ssim%5D%5B%5D=Thesis%2FDissertation&q=%22Djerassi%2C+Carl%2C%22&search_field=search_author&sort=year-desc)
- Hartwig, D. and Johnson, J. Guide to the Carl Djerassi Papers SC0348 (Covers 1952-2014). <https://oac.cdlib.org/findaid/ark:/13030/c82b90hq/> (Stanford Libraries, University Archives, IN Online Archive of California.)

#### Histories of Stanford's Chemistry Department that include Djerassi contributions:

- Stanford Department of Chemistry > History: <https://chemistry.stanford.edu/about/stanford-chemistry-milestones>
- HUTCHINSON, E. *The Department of Chemistry, Stanford University, 1891-1976: a brief account of the first eighty-five years*. Stanford, California, Department of Chemistry, Stanford University, 1977. <https://searchworks.stanford.edu/view/933024> (available online)
- MOSHER, H. S.; Moerner, W. E. (Editor). *Stanford Chemistry Department, 1977-2000*, 2006. <https://searchworks.stanford.edu/view/10786262> (available online)



*Chair's Message, continued from front page*

The Silicon Valley local section embraced the National Chemistry Week and conducted events at 4 different venues:

- Martin Luther King Library, San Jose
- Salinas Community Science Center, Salinas
- Ronald McDonald House, Palo Alto
- Redwood City Library, Redwood City

Over 300 students participated in the experiments which encompassed some old favorites like Slime and Boo Bubbles and some new experiments including "Cloudy with a Chance of Clear" which explored the buffer power of magnesium hydroxide (Milk of Magnesia). We also debuted a medicinal plant experiment in which the students were asked to match samples of medicinal plants like eucalyptus, cloves, or rosemary to their essential oils while learning about the natural origins of many of our medicines. Boo Bubbles, which are made using dry ice, were a great way to attract attention from passers-by and draw them into the full events. In honor of the Halloween season, we incorporated iron filings in the slime mixture which made the slime more interactive and almost seem alive when a magnet was in proximity.

Ronald McDonald House is a facility where young outpatients and their families and siblings can stay while undergoing medical procedures. We made UV-activated bead bracelets and played the board game that was included in the ACS Celebrating Chemistry magazine.

At the Salinas Community Science Center, we explored cochineal dye and water surface tension experiments. The center runs an afterschool program at El Sausal Middle School in Salinas where students can build projects and explore hands-on science. This was our first SVACS event at their center, and we are already planning to return.

Our section also has an ongoing hands-on science program at the Redwood City Library, where we meet with students each month for an hour and explore new science experiments. We have a regular following of students who come each month to try the new experiment. This is a particularly attractive program for home-schooled students who might not get much exposure to science. For NCW, they evaluated the buffering capacity of magnesium hydroxide.

These events were supported by the Chemistry Clubs at San Jose State University and Santa Clara University, as well as volunteers from Silicon Valley local ACS section. I'm not sure who had more fun, the students or the volunteers. And of course, each student left with a mole sticker, an ACS pencil, or a tattoo (or maybe even one of each!)

The end of the year is also the time when we conduct our elections for the Silicon Valley local

section members who will serve on the Executive Committee for 2024. The polls will open for on-line voting in mid-November. Please take a few minutes and vote. We are always happy to involve more people in our local section. All you need to do is let someone on the Executive Committee know of your interest. Even if you don't want to serve as an officer, we would be delighted to have more participation at our committee meetings and events. You can see from our website, and from all the newsletters, that we are an active local section, so there is likely something of interest to anyone who would like to get involved. The officers' names are all shown at the end of this newsletter – *reach out to us* if you would like more information.

## 2023 Election of SVACS Officers, Councilors, Alternate Councilors for 2024

**Voting Period: November 15 to 30, 2023**

**SVACS members eligible to vote for our leadership group will soon receive an email notification to cast their votes online.**

**A sample ballot is shown below, in preparation for receiving the email.**

**Biographies and candidate statements will be posted by November 5, 2023 on the [Silicon Valley ACS website](#).**

**Silicon Valley ACS is a volunteer-run organization. Please show them your support by voting!**

### ----- Sample Ballot -----

Chair-Elect (3-year commitment, will be Chair-elect 2024, Chair in 2025, and Immediate Past Chair in 2026)

Vote for ONE (1)

- Amanda Nelson
- Write-in \_\_\_\_\_

Treasurer (2-year term, 2024-2026)

Vote for ONE (1)

- Ihab Darwish
- Write-in \_\_\_\_\_

Councilor (3-year term, 2024-2026): 2 open positions. Vote for TWO (2)

- Natalie McClure
- Grace Baysinger
- Write-in \_\_\_\_\_

Alternate Councilor (3-year term, 2024-2026): 1 open position. Vote for ONE (1)

- Karan Dikshit
- Howard Peters
- Write-in \_\_\_\_\_

## Digital Learning Solutions for Lab Safety Instruction

Powered by the ACS Institute  
Explore Organizational Solutions



*The ACS Center for Lab Safety supports and promotes the safe, ethical, responsible, and sustainable practice of chemistry through easy access to authoritative tools, education, training, and guidance.*

"Explore digital learning solutions that are authoritative, accessible, and compatible with learning management systems (LMS). The courses on this page are geared toward organizational users who want to integrate learning into their educational systems. They are easy to integrate into existing LMS and curricula so you can focus more on other important tasks." [Learn more](#)

**Digital, On-Demand Courses available for a fee:**

- [ACS Essentials of Lab Safety for General Chemistry](#)
- [ACS Essentials of Lab Safety for Organic Chemistry](#)
- [ACS Essentials of Lab Safety for Instructors and TAs](#)
- [ACS Case Studies for Research Lab Safety](#)

**Free, on-demand self-paced courses also available:**

- [Foundations for Storing, Organizing and Disposing of Chemicals in Educational Settings](#)
- [Foundations of Chemical Safety and Risk Management](#)

# CALENDAR OF EVENTS

<https://www.siliconvalleyacs.org/events/>

## - November 2023 -

- Nov 2** **Silicon Valley ACS Executive Committee monthly meeting**  
7:00-9:00pm, Online via Zoom, Free. To attend as a guest, please contact the [Chair](#)
- Nov 3** **4th Annual Bay Area Chemistry Symposium (BACS) 2023**  
Robertson Auditorium, UCSF  
For more information on sponsorship & registration:  
[bayareachemistrysymposium.com](http://bayareachemistrysymposium.com)  
[View and share flyer](#)
- Nov 4** **Shining Light on Solar Cells and Their Material Impacts**  
Rachel Woods-Robinson, PhD, University of Washington Clean Energy Institute  
Sponsored by the California local ACS section  
10:30am-Noon, Online via Zoom, Free, [Registration required](#)
- Nov 8** **The James Webb Space Telescope: Astrochemistry's Exciting New Window**  
Sponsored by ACS Webinars and the Astrochemical Subdivision of the ACS Physical Chemistry Division  
11:00am-Noon, Online via Zoom, Free, [Registration required](#)
- Nov 9** **Psychological Safety is Lab Safety: Using RAMP to Assess DEIR Hazards**  
Sponsored by ACS Webinars and ACS Chemical Health & Safety Division  
11:00am-Noon, Online via Zoom, Free, [Registration required](#)
- Nov 11** **Teaching Chemistry to Students with Disabilities Symposium (Hybrid Event)**  
Sponsored by ACS New York Local Section, ACS Committee on Chemists with Disabilities, ACS Committee on Chemical Safety, and the Graduate Center of the City University of New York  
6:00am-1:00pm, Online via Zoom, Free, [Registration required](#)  
[Download 5th edition of eBook](#)
- Nov 13** **Tour of the Shoreway Environmental Center, the South Bay's waste management center**  
Sponsored by the Society of Plastic Engineers, Golden Gate Section  
1:00-2:30pm, In-person in San Carlos, Free, [Registration required](#)
- Nov 15** **Programmable Shape Morphing & Responsiveness of Composite Hydrogels**  
Prof. Jinhye Bae, UC San Diego  
Department of NanoEngineering & Materials Science and Engineering  
Sponsored by the Golden Gate Polymer Forum (GGPF)  
6:00-7:00pm, Online via Zoom, Free/\$5 Donation, [Registration required](#)
- Nov 16** **Antibody-drug conjugates: Using IP and R&D trends to inform innovation**  
Sponsored by CAS (Chemical Abstracts Service)  
10:00-11:00am, Online via Zoom, Free, [Registration required](#)
- Nov 16** **Unbreakable Design: The Polymer Mechanochemistry of Self-Healing Materials**  
Sponsored by ACS Webinars and ACS Polymer Chemistry Division  
11:00am-12:30pm, Online via Zoom, Free, [Registration required](#)
- Nov 29** **Making dark formulations data work for you**  
Sponsored by CAS (Chemical Abstracts Service)  
7:00-8:00am, Online via Zoom, Free, [Registration required](#)
- Nov 30** **SLAC Public Lecture: Faster! Catching up to Electrons on the Move (Hybrid Event)**  
Sponsored by SLAC National Accelerator Laboratory  
7:00-8:00pm, Free, [Registration required to attend in-person](#) (SLAC National Accelerator Laboratory, Kavli Auditorium, 2575 Sand Hill Rd, Menlo Park, CA 94025) or [Watch Live on SLAC National Accelerator Laboratory's YouTube Channel](#) | [Learn more](#)

## - December 2023 and Beyond -

- Dec 7** **Silicon Valley ACS Executive Committee Meeting**  
7:00-9:00pm, Online via Zoom, Free. To attend as a guest, please contact the [Chair](#)
- Dec 7-8** **2nd Annual ACS Sustainability Summit: Reimagining Chemistry Education (Hybrid Event)**  
Sponsored by ACS campaign for a Sustainable Future, Green Chemistry Institute, ACS Education Division, and Beyond Benign Green Chemistry Education  
[Learn more and register now](#)
- Dec 13** **Know the Crystallization Pathway During Processing: Crystallization of Nylons Using Fast Scanning Calorimetry and Beyond**  
Xiaoshi Zhang, PhD, Plastics Engineering Technology, Penn State University Behrend  
Sponsored by the Golden Gate Polymer Forum (GGPF)  
6pm, Online via Zoom, Free/\$5 Donation; [Registration Details TBA](#)

# BACS



BAY AREA CHEMISTRY SYMPOSIUM  
connecting industry + academia

an ACS  
sponsored  
event



Please join us for

The 4<sup>th</sup> annual **Bay Area Chemistry Symposium**, an ACS sponsored symposium for Synthesis and Design in Medicinal & Process Chemistry



WHEN  
WHERE  
SUBMIT

Friday, November 3<sup>rd</sup>, 2023

Robertson Auditorium, UCSF

Abstracts for talks & posters today!

This symposium, unique in the Bay, will provide an ideal forum for students, postdocs, and industrial chemists to meet and exchange ideas covering themes in chemical biology, synthesis, and computational chemistry. The 2023 symposium will feature keynote seminars from leading local academics & industrial chemists, as well as short talks from students, postdocs, and industry researchers. A lively poster session promises a much-anticipated return to networking with local chemists through this opportunity to learn about cutting-edge chemistry across the Bay Area's outstanding institutions. Visit our website for more details!

## OUR 2023 KEYNOTE ACADEMIC SPEAKERS



Prof. Kevan Shokat  
UC San Francisco



Prof. Carrie Partch  
UC Santa Cruz



Prof. John Hartwig  
UC Berkeley

Last year's BACS was  
generously supported by our

## INDUSTRY SPONSORS



For more information on sponsorship & registration, visit: [bayareachemistrsymposium.com](http://bayareachemistrsymposium.com)



# Silicon Valley ACS Chemistry of Wine Event

UC Santa Cruz Arboretum & Botanic Garden, October 7, 2023

Prof. Emeritus Phil Crews, UC Santa Cruz, gave an excellent presentation about the Chemistry of Wine. The event room filled with attendees to learn not only about the chemistry of wine, but also about the impact of recent wildfires on grapes. The talk was illustrated with wine-tasting from the Crews family-owned winery, *Pelican Ranch*.



Many thanks to Anais Nguyen (in pink) for organizing this event. Other pictured SVACsers who helped host the event: Jim McClure, Amanda Nelson, Bonnie Charpentier, Natalie McClure, Phil Crews, and Grace Baysinger.

## Welcome to the Silicon Valley Section of ACS



Each month, our Silicon Valley local ACS section receives a spreadsheet from national ACS with the names of members new to our section. The members are either new to ACS, have transferred in from other areas, or are the newest members - students. As a welcoming gesture, the SVACS Executive Committee offers new members free attendance at a catered SVACS event. Come join us at our in-person gatherings! To register as our guest for a catered event, [contact us](#) directly to receive complimentary admission for you and a friend.

We hope you will also join us for an outreach event, like judging a science fair, proctoring the high school Chemistry Olympiad or participating in a National Chemistry Week hands-on experiment event. The local section is a volunteer organization. Attend an event, volunteer to help, and get to know your local fellow chemists. Welcome!

### New SVACS Members for November 2023

Oshri Afanзар	Gengyu Du	Xavier Jones	Jacob Silver
Erik Pablo Almaraz	Linuki Samara Ekenayake	Keerthi Krishnan	Zi Tan
Adam Barsamian	Eabha Finn	Ibrahem Lana	Jing Tang
Abiageal Barton	William A. Garland	Guangtao Li	Makayla Teppang
Yukio Cho	Ran Geng	Lecheng Lyu	Yu Wang
Jeong Choe	Tyler H. Heibeck	Jagadeesh Nagendra Manda	Brendan M. Wirtz
William Chueh	Hsu Wai Hnin	Hung Quang Pham	Yirui Zhang
Teng Cui	Reagan Hooper	Paaras A. Shah	Xinzhi Zou
Allison Nicole Devitt	Dan Ilyin	Preethi Sundaresakumar	

## An Antidote for Deadly Mushrooms?



[Watch video on YouTube](#) (11:40 minutes)  
[View associated article](#)

“Almost all mushroom-related fatalities worldwide are caused by a single group of molecules, cyclopeptides, which are found in death caps and destroying angels. A single mushroom from this family can contain enough of these toxins to destroy your liver or even kill you. And there’s no antidote for mushroom poisoning. But that could change very soon.”

Source: Science Reactions video, published October 18, 2023

# Silicon Valley ACS Strategic Plan - 2023 Update

Why get involved in the Silicon Valley ACS Section? You can network & make connections, build your leadership skills, enhance your professional development, engage in your community, and give back to your community.

## Updated Strategic Plan

**VISION:** Building and sustaining connections through chemistry in Silicon Valley region.

**MISSION:** Engaging the chemistry community by providing professional development, educational opportunities, networking and recognition, and serving as a resource for fundamental, innovative, exciting, and fun chemistry to our diverse broader community through education and outreach.

GOALS	STRATEGIES
Enhance professional development opportunities	BACS; YCC networking; Career days; Interviewing/Resume Workshops; Dinner meeting networking; Leadership opportunities in local section governance; Support for career transitions
Deliver and communicate engaging events and outreach	Technical talks; Trivia nights; PopUP chemistry; Book club; CCEW; NCW; BASF; Monterey Bay regional activities; Sustainability projects; STEM-related experiences (performances and tours), Newsletter; Website; Social media; Connections with other communities and societies
Support STEM education	Teach the Teachers; Bubble Grant; NCURS; Paving the Path; Project SEED; Science Fair; David Parker Award for Excellence in Chemistry; US Chemistry Olympiad
Recognize excellence in science and reward volunteers	Mosher, Ottenberg, and Radding Awards; Annual picnic and award ceremony; Teacher Scholar Award; Salute for Excellence; ACS Fellow nominations
Provide sustained leadership to achieve strategic goals and ongoing responsibilities of the local section	Executive and financial committees; ExComm meetings and minutes; Nominations and elections for leadership positions; Representation on the ACS Council; Managing of strategic goals by Goal Champions

Acronyms used in our Strategic Plan: SVACS = Silicon Valley American Chemical Society; STEM = Science, Technology, Engineering, and Math; BACS = Bay Area Chemistry Symposium; YCC = Younger Chemists Committee; CCEW = Chemists Celebrate Earth Week; NCW = National Chemistry Week; BASF = Bay Area Science Festival; NCURS = Northern California Undergraduate Research Symposium; SEED = Summer Experiences for the Economically Disadvantaged

## About the Silicon Valley ACS Section

Our local ACS Section was formed in 1954, incorporated in 1955 as the Santa Clara Valley ACS Section, and renamed the Silicon Valley ACS Section in 2017. It includes five California counties: San Mateo, Santa Clara, Santa Cruz, San Benito, and Monterey. Its neighbor and former parent is the California Section, headquartered across the San Francisco Bay. SVACS is in the 'large' category of ACS local sections, with ~2,000 regular members and ~1,000 community associate members (3,154 total as of September 2023).

### Website and Social Media

Website: <https://www.siliconvalleyacs.org/>

Facebook: <https://www.facebook.com/SiValleyACS/>

SiValleyACS/

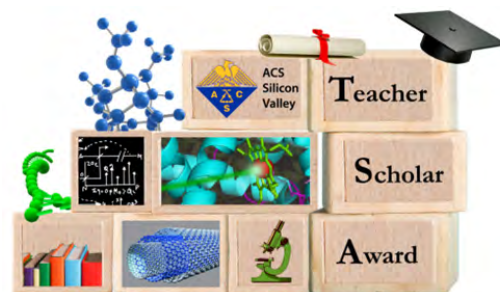
LinkedIn: <https://www.linkedin.com/company/american-chemical-society-silicon-valley-section/>

Twitter: <http://www.twitter.com/SiValleyACS>



# Silicon Valley ACS Teacher-Scholar Award

Nominate a community college educator



*Recognizing Community College science teachers who go above & beyond to inspire and support their students to pursue a career in science.*

The Silicon Valley ACS Teacher-Scholar Award honors community college faculty who impact their communities through outstanding leadership and service. These academic heroes inspire future generations by demonstrating excellence in teaching, mentoring and scholarship.

The ACS recognition consists of a \$500 award and certificate to the recipient and a \$500 award and certificate to their associated community college department. In addition, travel expenses (up to \$1000) to an ACS activity of the recipient's choice will be reimbursed.

The annual SVACS Teacher-Scholar Award spotlights the significant contribution that California community colleges make to advancing the future of chemistry by supporting our next generation of scientists. Almost 51 percent of graduates of the California State University system and 29 percent of the University of California system transferred from a California community college. The majority of these students comes from economically disadvantaged backgrounds, for whom effective instruction demonstrated by community college educators is essential.

Initiated in 2008, the SVACS Teacher-Scholar Award was the first ACS award specifically for community college science educators. The rarity of an award in this category and the abundance of qualified candidates catalyzed our expanding eligibility beyond our immediate region to include chemistry faculty from any of the 116 California community colleges. We encourage all readers to identify and nominate worthy community college faculty. Nominations accepted through March 1, 2024.

To learn more and to submit a nomination:  
[Silicon Valley ACS Teacher-Scholar Award](#)







## Upcoming ACS Funding Opportunities

Mid-November through December 2023

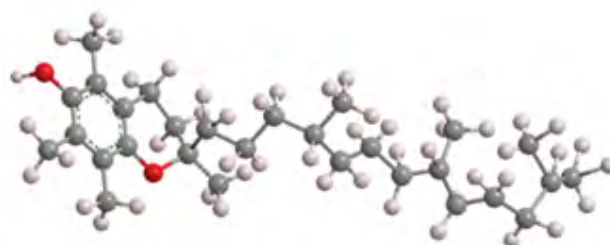
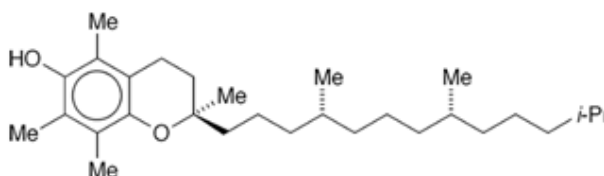
[Browse more funding opportunities](#)

- **The Jonathan L. Sessler Fellowship for Emerging Leaders in Bioinorganic and Medicinal Inorganic Chemistry** Recognizes emerging leaders in bioinorganic and medicinal inorganic chemistry.  
*Amount: Variable. Deadline: November 10, 2023*
- **Principal Investigator Development in Sustainability Grant** Provides funding to early or mid-career investigators (Associate+) to spend 6-12 months in the laboratory of a private company, a national laboratory, or an academic laboratory in a different institution, with the goal of establishing robust collaborations across industry-academia or across disciplines and taking advantage of the mentorship of a faculty member distinct from prior mentors.  
*Amount: \$50,000. Deadline: November 15, 2023*
- **Pittsburgh Conference on Analytical Chemistry and Applied Spectroscopy (Pittcon) Travel Grant** Provides travel and conference funding for early-career chemists from developing countries to attend the Pittsburgh Conference on Analytical Chemistry and Applied Spectroscopy (Pittcon).  
*Amount: Up to \$1,800. Deadline: November 15, 2023*
- **CIBA/YCC Young Scientist Travel Award** Provides funding for young and early-career chemists to travel to and participate in an ACS meeting.  
*Amount: up to \$1,000. Deadline: November 15, 2023*
- **Heh-Won Chang, PhD Fellowship in Green Chemistry** Provides financial support to full-time graduate students conducting research in green chemistry and/or engineering.  
*Amount: \$5,000 (open to U.S. & International graduate students). Deadline: November 17, 2023*
- **Joseph Breen Memorial Fellowship** Sponsors the participation of students (undergraduate, graduate, or post-doctoral) to attend the Green Chemistry & Engineering Conference and present their work in a talk or poster. Breen Fellowships are for International applicants only.  
*Amount: Up to \$2,000 per student. Deadline: November 17, 2023*
- **Nina McClelland Memorial Award** Sponsors the participation of postdoctoral scholars from both U.S. and international institutions to attend the annual Green Chemistry & Engineering Conference and present their work in a talk or poster.  
*Amount: \$2,000. Deadline: November 17, 2023*
- **Kenneth G. Hancock Memorial Award** Provides national recognition and honor for outstanding student contributions to furthering the goals of green chemistry and engineering through research and/or studies. This includes but is not limited to the research, development, and implementation of fundamental and innovative chemical technologies that incorporate the principles of green chemistry into chemical design, manufacture, and use, and that have the potential to be utilized in achieving national pollution prevention goals.  
*Amount: \$1,000 + Travel expenses up to \$1,000 (Undergraduate & Graduates student are eligible; open to U.S. and International applicants). Deadline: November 17, 2023*
- **ACS PrepareCTP Seed Grant** Aims to support partnership building at community colleges and similar two-year degree-granting institutions, focusing on preparing skilled technical workers (STW) in the chemical enterprise, termed chemical technical professionals (CTPs). The grant program will support student stipends/scholarships, faculty workload release, instrumentation purchases, and other activities suitable for preparing and recruiting chemical technical professionals and establishing partnerships with chemistry-related employers in the awarded institution's community.  
*Amount: Up to \$20,000. Deadline: November 30, 2023*
- **Merck Research Award** Recognizes eight individuals who will present their research at an awards symposium held during the ACS Fall Meeting. This includes women (both cis and trans) and persons assigned female at birth (AFAB). For more information regarding the gender inclusive language used in this document, please visit the ACS Inclusivity Style Guide.  
*Amount: \$1,500. Deadline: December 1, 2023*
- **Peter J. Dunn Award for Green Chemistry & Engineering Impact in the Pharmaceutical Industry** Established in 2016 by the ACS GCI Pharmaceutical Roundtable (ACS GCIPR) to recognize excellence in the research, development, and execution of green chemistry that demonstrates compelling environmental, safety, and efficiency improvements over current technologies in the pharmaceutical industry and its allied industrial partners. The inaugural award was given to Peter J. Dunn of Pfizer and subsequently named in his honor.  
*Amount: Up to \$5,000. Deadline: December 1, 2023*
- **CMO Excellence in Green Chemistry Award** Recognizes outstanding efforts by Contract Manufacturing Organization (CMO) companies in pharmaceutical green chemistry in support of pharmaceutical research, development and manufacturing that demonstrate compelling environmental, safety and/or efficiency improvements.  
*Amount: Up to \$5,000. Deadline: December 1, 2023*
- **Green Chemistry Challenge Award** Promotes the environmental and economic benefits of developing and using novel green chemistry.  
*Amount: Variable. Deadline: December 8, 2023*
- **Outreach Volunteer of the Year Award** Recognizes the immeasurable efforts made by ACS local section and international chapter volunteers who conduct outreach and teach the public about chemistry.  
*Amount: Gift and Certificate. Deadline: December 17, 2023*

CHEMISTRY

Quiz

I'm one of your body's safeguards. What molecule am I?

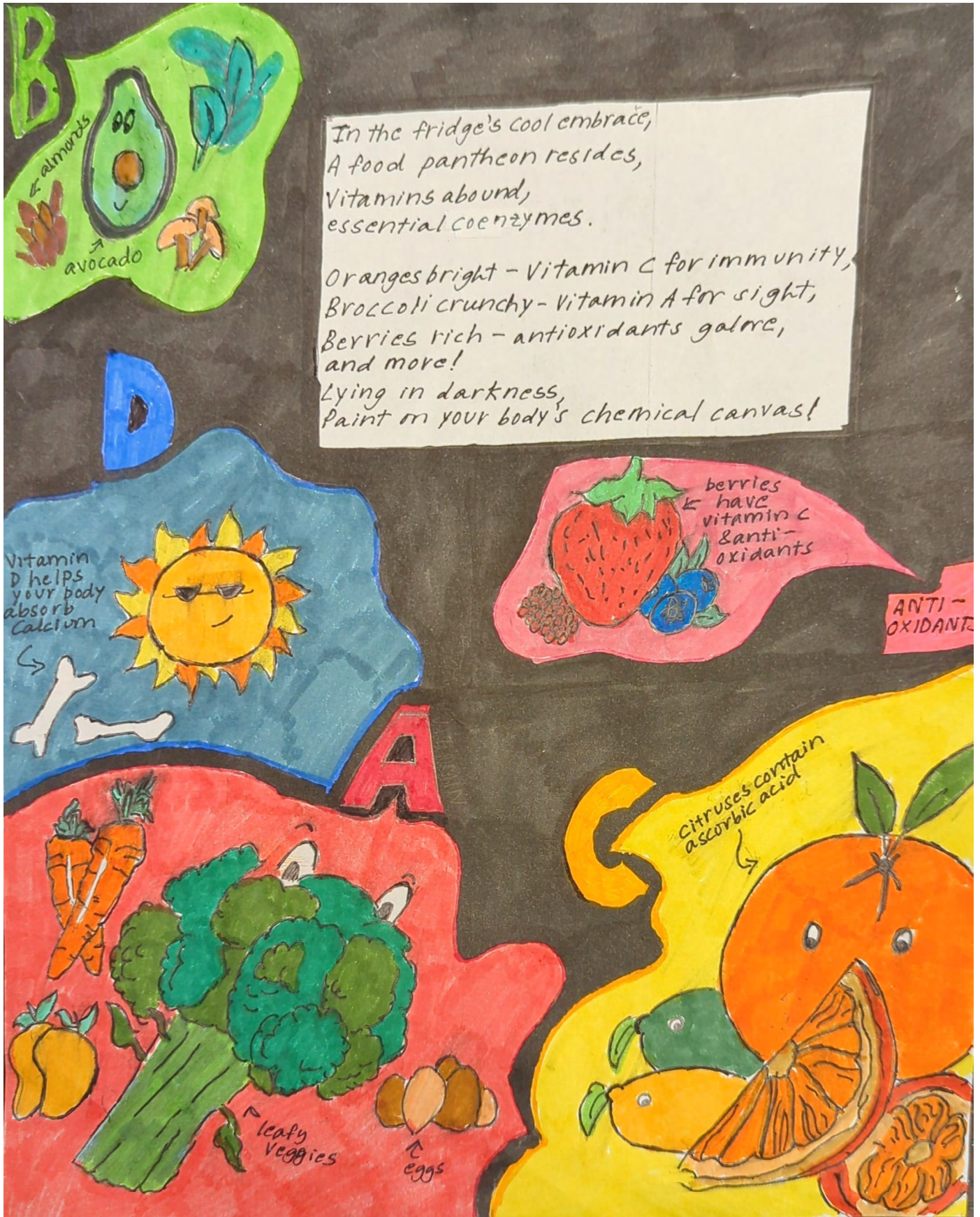


Answer



# National Chemistry Week Poetry Contest SVACS Middle School Winner

Shreyas K., Grade 8, Harker School





National Chemistry Week Poetry Contest  
SVACS High School Winner

Raeanne L., Grade 9, Harker School

Uh oh! Your body has detected an unwanted **pathogen!**  
Fortunately, you've taken the **vaccine**—  
Your **memory cells** recall this scene.



Thank the scientists who cleverly designed  
**Inactivated, weakened, recombinant, conjugate, and toxoid**  
**Vaccines**, helping your **immune system** have harm destroyed!



## Interesting and Cool Science in the News

[ACS to honor Bettye Washington Greene with National Historic Chemical Landmark designation](#) (ACS News Release, October 20, 2023)

[Activating a chemical reaction by 'flipping a switch'](#) (Chemistry World, October 27, 2023)

[AI identifies antimalarial drug as possible osteoporosis treatment](#) (ACS Press Release, October 18, 2023)

[Anti-COVID drug accelerates viral evolution](#) (Nature News, October 24, 2023)

[Are covalent inhibitors the key to curing cancer?](#) (CAS Insights, October 25, 2023)

[Carbon's anti-aromatic allotrope is ringing the changes](#) (Chemistry World, October 26, 2023)

[Challenges and opportunities in protein function prediction for drug discovery](#) (CAS Insights, October 19, 2023)

[Cocoa pods — a source of chocolate, and potentially, flame retardants](#) (ACS Press Release, October 17, 2023)

[Controlling insulin activity in cells with 'DNA origami'](#) (Chemistry World, October 25, 2023)

[Cool solutions for urban heat islands](#) (Stanford Woods Institute for the Environment, October 26, 2023)

[EPA's 2023 Green Chemistry Challenge Awards honor innovators](#) (ACS News Release, October 23, 2023)

[Falling behind: postdocs in their thirties tire of putting life on hold](#) (Nature News, October 24, 2023)

[Genetically modified bacteria break down plastics in saltwater](#) (NSF Research News, October 26, 2023)

[How to design marine protected areas that keep pace with climate change](#) (Stanford News, October 26, 2023)

[Illuminating the dance of RNA with ultrabright X-rays](#) (SLAC News, October 10, 2023)

[Killer whales' diet more important than location for pollutant exposure, study says](#) (ACS Press Release, October 11, 2023)

[Lung cancer cells covertly thrive in brain under guise of protection, Stanford Medicine study finds](#) (Stanford Medicine News, October 23, 2023)

[Magnetic atoms push interactions to new lengths for quantum simulation](#) (Nature News, October 25, 2023)

[Mars has a surprise layer of molten rock inside](#) (Nature News, October 25, 2023)

[Metal-organic frameworks could someday deliver antibacterial nitric oxide](#) (ACS Press Release, October 11, 2023)

[Mimicking 'plant power' through artificial photosynthesis](#) (ACS Press Release, October 9, 2023)

['Mona Lisa' hides a surprising mix of toxic pigments, study shows](#) (ACS Press Release, October 11, 2023)

[New AI-driven tool streamlines experiments](#) (SLAC News, October 12, 2023)

[Painting with DNA](#) (Chemistry World, October 25, 2023)

[Pumpkin Chemistry: Research Highlights Featuring Fall's Favorite Gourd](#) (ACS Axial, October 13, 2023)

[Recent advances in cannabis and hemp research](#) (ACS Press Release, October 26, 2023)

[Recognising the roles that senior PhDs and postdocs play in training new lab members](#) (Chemistry World, October 31, 2023)

[The remaining frontiers in fighting hepatitis C](#) (Knowable Magazine, October 30, 2023)

[Renewed support for high power laser facilities will benefit discovery science and inertial fusion energy research at SLAC](#) (SLAC News, October 26, 2023)

[Research findings could explain why young kids rarely get very sick from COVID-19](#) (Stanford Medicine News, October 12, 2023)

[Researchers identify metals released into the atmosphere by satellite reentry](#) (Chemistry World, October 26, 2023)

[Researchers probe molten rock to crack Earth's deepest secrets](#) (SLAC News, October 23, 2023)

[Restoring nerve-muscle connections boosts strength of aging mice, Stanford Medicine study finds](#) (Stanford Medicine News, October 11, 2023)

[The rise of covalent inhibitors in strategic therapeutic design](#) (CAS Insights, October 17, 2023)

[Scientists develop method to detect deadly infectious diseases](#) (NSF Research News, October 31, 2023)

[Shining light on the radical production of DNA building blocks](#) (SLAC News, October 11, 2023)

[SLAC scientists shed light on potential breakthrough biomedical molecule](#) (SLAC News, October 24, 2023)

[Stanford Medicine researchers build an eye 'aging clock' that could lead to treatments for ocular diseases](#) (Stanford Medicine News, October 19, 2023)

[Stanford study shows how modifying enzymes' electric fields boosts their speed](#) (Stanford News, October 24, 2023)

[Sunflower extract fights fungi to keep blueberries fresh](#) (ACS Press Release, October 25, 2023)

[Surprising finding links sleep, brain insulation, and neurodegeneration](#) (Wu Tsai Neuroscience Institute, Stanford University, October 27, 2023)

[Taran Driver wins 2023 LCLS Young Investigator Award for work on capturing ultrafast electron movements](#) (SLAC News, October 20, 2023)

[Tiny technology, big possibilities](#) (CAS Insights, October 25, 2023)

['Ultrashort' PFAS compounds detected in people and their homes, study shows](#) (ACS Press Release, October 11, 2023)

[Unlocking pathways to break down problem proteins presents new treatment opportunities](#) (Stanford News, October 25, 2023)

[Unveiling the potential of the antibody drug conjugate](#) (CAS Insights, October 12, 2023)

[What do EV batteries have to do with health?](#) (Stanford Woods Institute for the Environment, October 12, 2023)

[What's standing in the way of sustainable steel?](#) (Stanford Engineering, October 30, 2023)

[Where the heck did all those structures inside complex cells come from?](#) (Knowable Magazine, October 23, 2023)

[The Whole of the Whole Earth Catalog Is Now Online \(for free\)](#) (Wired, October 13, 2023)

[Worm Slime: The Key to More Eco-Friendly Plastics?](#) (ACS Axial, October 31, 2023)

# The plastic anatomy of a Barbie doll

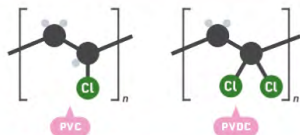


ACS Local Section  
Silicon Valley

P.O. Box 395, Palo Alto, CA 94302

## Head and hair

Barbie doll heads are made from polyvinyl chloride (PVC), mixed with plasticiser to make it more flexible. The hair is commonly made from polyvinylidene dichloride (PVDC), but other polymers including nylon and polypropylene.



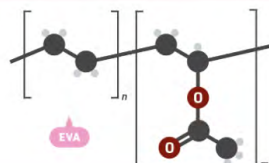
## Torso

PVC was used for early Barbie doll torsos. Dolls from the mid-1960s to the mid-1970s used low density polyethylene (LDPE), while today's dolls use acrylonitrile butadiene styrene (ABS), the same plastic that Lego bricks are made of.



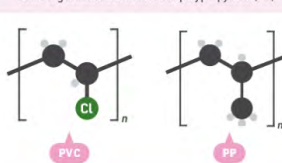
## Arms

Historically, Barbie doll arms were made of PVC. Today, Barbie's arms are made of ethylene-vinyl acetate (EVA), a copolymer of ethylene and vinyl acetate which is soft and flexible.



## Legs

Much like the other parts of the doll, PVC was used for the legs of early dolls. It's still used today, though the phthalate plasticisers used in early dolls have been replaced by safer alternatives. The bend-leg armatures are made of polypropylene (PP).



KEY: ● Carbon ○ Oxygen ● Nitrogen ● Hydrogen

www.compoundchem.com

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