ACS Local Section
Silicon Valley

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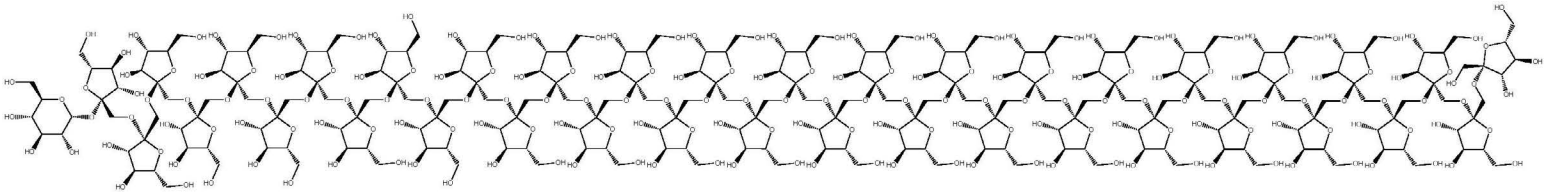
SILICON VALLEY CHEMIST



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Our Newsletter: It Takes a Village

Have you noticed something different about our newsletters? The new feel and the refreshing graphics are all thanks to three people, Kevin Greenman, Partha Bera and Annie Ma. Last year, the SVACS leadership team put together a taskforce to address newsletter costs and formats. They decided to transition the newsletter layout and distribution to a fully electronic workflow.

For nearly 7 years, Kevin and Partha have put in a considerable amount of work every month gathering and organizing the content for Silicon Valley Chemist, our monthly newsletter. Recently, Annie was charged with the task of coming up with new graphical elements for the newsletter and Kevin was asked to format and design the newsletter using software tools that didn't require contracting an external specialist. Our newsletter committee rose to the occasion and we have our new eye-catching newsletter! This was a huge undertaking and we would like to express our utmost gratitude to both Kevin, Partha and Annie for their hard work.

Putting together the newsletter is a tremendous endeavor. Our efforts are enriched by combining expertise and resources with volunteers who tackle problems collectively. It truly takes a village to help the smooth functioning of this organization and we are privileged to have hard working and talented volunteers who rise to the occasion.


Kevin Greenman


Partha Bera

Kevin Greenman and **Partha Bera** have been the editor and associate editor of the Silicon Valley Chemist for the last seven years. They have worked tirelessly

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Chair's Message

Matt Greaney

2019-nCoV, COVID-19, Coronavirus; no matter the terminology used, the **CO**rona**VI**rus **D**isease that was discovered in 20**19** (**COVID-19**) has quickly wreaked havoc across cities, states, countries, and continents. Well, it would be fair to say that most of our daily routines have been significantly altered since my last Chair's message. In response to the pandemic, businesses have shuttered, conferences and events are cancelled, and half of our country is in some form of lock down. While this is undeniably a serious and scary time, it can also serve as an opportunity for the scientific community to shine by leading the charge against this pandemic. In a hyper-partisan environment polluted by disinformation seemingly everywhere you look, scientific fact offers a reassuring reprieve from arguing over personal opinions and an honest guiding light for a path forward.

This crisis is hardly 4 months in the making and far from over, but the scientific community is well-positioned, prepared for, and jumping to address the challenges at hand. A few weeks ago (at a mind-blowing breakneck speed) cryogenic electron microscopy was used to image the

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UPCOMING EVENTS

Apr 9	***Patents: Catalyze Your Career*** (Free ACS Webinar)
Apr 16	***The 3D Printing Revolution: Advances in Material Design and Methods*** (Free ACS Webinar)
Apr 20	***Earth Day Future 50: A Celebration*** (Virtual Event) Sponsored by the Stanford Woods Institute for the Environment Open to Public, RSVP required.
Apr 20-24	***Celebrating Sustainability: A Resilient Future*** (Virtual Event) Stanford University Open to Public, RSVP by April 15
Jun 24	***Replacing Plastics: Can Bacteria Help Us Break the Habit?*** Dr. Molly Morse, CEO of Mango Materials Michaels' at Shoreline A joint event of the Golden Gate Polymer Forum and ACS Silicon Valley Section
Jul 11	***SVACS Annual Picnic, Awards, & Wine/Beer-Tasting*** Stanford Chemistry Department
Jul 18-23	***Biennial Conference on Chemical Education (BCCE) 2020*** Oregon State University, Corvallis, OR

It Takes a Village, continued from front page

each month to collect articles from a wide and fluid source of authors. They then worked with a publisher for layout and printing by deadline so that you, our readership, has a fresh newsletter every month. If you have ever herded cats, you understand the effort this takes.

Kevin was schooled in medicinal chemistry, with a BS from Stanford and a PhD from UC Irvine. His career has exemplified working in Silicon Valley with experience at ChemoCentryx, Halcyon Molecular, Nanosyn, and ChemPartner.

Partha has been the Associate editor of the Silicon Valley Chemist for seven years. At his day job in NASA, Partha investigates the novel chemistry of evolution of complex organic molecules towards becoming biogenic in astrophysical environments using the techniques of ab initio quantum chemistry. Recently, he has been investigating the formation pathways and evolution of polycyclic aromatic hydrocarbons (PAHs), nitrogenated polycyclic aromatic hydrocarbons (PANHs), nucleic acids, amino acids, and sugars in both gas phase and condensed phase ices in conditions akin to the interstellar medium and on the surfaces of extra-terrestrial solar system bodies.

Annie Ma is a senior at The Harker School in San Jose, where she is co-editor-in-chief of the school's literary magazine, HELM. Her poetry and prose have won several Scholastic Writing Awards. She holds Honors (top 150 nationally) for the National Chemistry Olympiad and is a co-author of a chemistry research paper recently accepted for publication by Advanced Materials. She is also co-captain of her Harker's speech and debate team. She loves photography, evidenced in her portfolio at ***www.anniema.co***. Annie is very talented in many ways. We look forward to her future accomplishments.


Annie Ma

Chair's Message, continued from front page

structure of the novel coronavirus, providing key structural information critical to building a comprehensive understanding of the virus and how it interacts with human cells (see ***https://science.sciencemag.org/content/367/6483/1260***). Decades of research seeking therapeutic agents for viral infections (e.g., the HIV/AIDS crisis) means we have libraries of small molecule drug candidates numbering in the tens of thousands that have already been initially studied for efficacy and safety. Upon revisiting these libraries with the assistance of modern data science and machine learning, several of these drugs have been identified as potential treatments for COVID-19 with laboratory testing in live cells going on as I type this message (see ***https://www.scientificamerican.com/article/how-covid-19-drug-hunters-spot-virus-fighting-compounds/***). The development of fast genetic sequencing is facilitating the creation of rapid result tests that are (again as I type this message) being deployed across the world addressing one of the pillars in our collective response to the pandemic (see ***https://horizon-magazine.eu/article/covid-19-how-unprecedented-data-sharing-has-led-faster-ever-outbreak-research.html***). These unprecedented examples go on.

As the Chair of the Silicon Valley ACS, I've seen our membership roles, and I know many of our constituents are actively involved in this challenge. As a professional society of more than 150,000 members internationally and nearly 3000 members locally, we've had to react and adapt to the crisis at hand by making a slew of temporary changes including cancelling nearly all meetings and events. It's serious. ACS had never in its history cancelled a National Meeting before 2020. But we persevere, and we are still here to serve our members. I actively solicit the feedback and input from anyone reading this newsletter. Are you one of the members on the front line in the fight against the virus? Have you been personally affected? We want to hear from you, and I encourage you to reach out to me or any of my fellow Officers and Councilors. It would be great to feature some of these stories in our next newsletter.

The collaborative nature of technical research and the rapid response of the community to this public health crisis is heartening, especially when reading the news could easily make one believe the world is coming to an end. Although I do not personally work in the fields (i.e., biochemistry, molecular biology, virology, immunology, etc.) that will be so important to the inevitable treatment(s) and vaccine developments for COVID-19, I am immensely proud of my colleagues that form the backbone of these critical branches of our greater scientific community. You should be proud of them too! Stay healthy and stay safe.

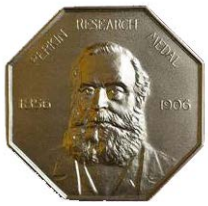
Welcome to the Silicon Valley Section of ACS

Each month, the 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. To welcome you to the section and get to know you, the Executive Committee offers new members a free dinner! To encourage you to attend a monthly section seminar meeting, we would like you to be our guest. When you register, make certain to mention that you are a new member and you and a friend will be our guests. The seminar meetings are held at a number of local venues. If you are unable to attend in the evening, perhaps you would join us for an outreach event, like judging a science fair, proctoring the Chemistry Olympiad or participating in a National Chemistry Week event in October. Then, there is our annual beer & wine tasting and awards picnic in July. The local section is a volunteer organization. Please attend an event, volunteer to help and get to know your local fellow chemists. Welcome!

NEW MEMBERS

Rey Banatao
Jean Baum
Brandon John Bills
Daniel Burdick
Jason Chiu
Dr. Gerald R. Crabtree
Dr. Robert Allen Craig II
Rick Curvers
Vladimir Dozortsev
David Grauer
Xilin Gu
Kim Hailey
Dr. Carlos J. Hernandez
Kevin M. Johnson
Dehui Kong
Dr. Cynthia K. Larive
Dylan Lawton
John MacMillan
Jack Maung
Joseph P. M. Motion
Daisie Ogawa
Dr. Munirathna Padmanaban
Nag Patibandla
Dr. Johnny D. Pham
Colin Quinton
Evan Reed
Dr. Andro C. Rios
Brian Ryu
Dr. Alberto Salleo
Beant Saroya
Elizabeth Sattely
Chris Shevlin
Wilson Sinclair
Jonathan Stebbins
Rhiannon Thomas-Tran
Jiabao Wen
Gerardo Zuluaga

SVACS Member Jane Frommer Awarded the Prestigious 2020 Perkin Medal



Dr. Jane Frommer, a member of the Silicon Valley ACS, has been awarded the 2020 Perkin Medal, the highest honor in the United States for achievement in industrial chemistry.

On announcing the award, the sponsoring Society of Chemical Industry America released "The work Dr. Frommer has done in nanoscopic analytical methods is vital to thin film and nano-structural efforts now pervasive throughout industries. Over three decades she has shared her pioneering work at IBM Research with the industrial and academic communities through an abundance of publications, public lectures and teaching. SCI is pleased to reward Dr. Frommer's remarkable success in the industry, her contributions to science, and her commitment to mentoring the next generation of scientists."

The Perkin Medal Selection Committee consists of the Chairs or Presidents of the American Chemical Society, the American Institute of Chemical Engineers, the Science History Institute, and the Society of Chemical Industry. They noted Frommer's groundbreaking research in conducting polymers and on scanning probe microscopies and their application to practical, real-world problems of vital importance to industry's research, development, and manufacturing quality. Her pioneering demonstrations of the molecular underpinnings in materials science and her leadership in the field of scanning probe nanotechnology worldwide, and the impact of her discoveries on the technical industrial community at large, led to choosing her as the 2020 Perkin medalist.

Jane Frommer's approach of bringing chemical awareness to physics and engineering in R&D environments is illustrated well by two of the research areas she pursued: conducting polymers and scanning probe microscopy. She began her career in 1980 at Allied Corporate Laboratories (now Honeywell) where, motivated to perform mechanistic studies, she discovered the solution state of electronically conducting organic polymers. In 1986 she joined IBM Research - a nexus for scanning probe invention - where, together with instrumentalists, demonstrated unambiguously the ability to image and manipulate single molecules with STM (scanning tunneling microscopy). On a multiyear assignment to the University of Basel Physics Institute in the early 90's, her academic team expanded the capability of scanning probes into measuring functional properties of materials in confined geometries with AFM (atomic force microscopy). In doing so, they demonstrated the method's ability to distinguish between different molecular species within monolayers.

Since 2018 she has served as a science advisor on behalf of Google to expand their presence in open source data in the physical and life sciences. She also advises numerous Silicon Valley start-ups in addressing the chemical and material challenges of nanotechnology.

Frommer has always been an avid mentor to high school and college students, most first in their families to seek advanced degrees. She is an associate editor of the Beilstein Journal of Nanotechnology and an advisor for numerous public and private science and community organizations. In the ACS she has served at many levels: symposium organizer and editor for the Colloids Division, board member and reviewer for ACS Publications, chair and councilor for the Silicon Valley local section, and member of the Ethics Committee at the national level.

Dr. Frommer has authored over 100 refereed publications and is co-inventor on over 50 issued patents. She is a Fellow of the American Chemical Society and the 2017 recipient of the ACS Award in Industrial Chemistry. Other honors include the YWCA Silicon Valley Tribute to Women Award, IBM Best Paper Award (Nanoscale Three-Dimensional Patterning of Molecular Resists by Scanning Probes, in Science), Brazilian Agriculture Department recognition for contributions to R&D in Nanotechnology in Brazil, R&D Magazine's 25 Technologies of Tomorrow Award (UltraFast Electrophoresis at the Nanoscale), and an IBM Outstanding Technical Achievement Award for Imaging and Manipulating Single Molecules.

Jane Frommer obtained her B.S. degree in chemistry from Tufts University while performing bio-organic undergraduate research at MIT with Bill Rastetter. Following graduation, she worked in Vitamin D endocrinology with Michael Holick at Harvard's Mass General Hospital. She earned her Ph.D. degree from Caltech, studying transition metal-functionalized polymers and organometallic cluster compounds as models for Fischer-Tropsch catalysis with Bob Bergman.

SCI (Society of Chemical Industry) America, launched in 1894, provides a networking forum for chemical industry leaders, industrial scientists, and technologists. It celebrates achievement to promote public awareness of the contributions of industrial chemistry and inspires students to enter technical careers. The Perkin Medal annual award is recognized as the highest honor given for outstanding work in applied chemistry in the United States.

1 micron x 1 micron sculpture of Jane in silicon oxide. Z-scale = 2nm. Created at Asylum Research by Ted Limpoco using an AFM operating in anodic oxidation mode on the surface of a silicon wafer. Presented to Jane by Roger Proksch of Asylum Research on the occasion of her receiving the 2017 ACS Industrial Chemist Award.

2020 Abraham Ottenberg Service Award
Call for Nominations: Silicon Valley Section

The Ottenberg Award is presented annually to a member of our local section for outstanding service to the section. Previous recipients are not eligible to receive it again. Nominations should include the nominee's biography, a description of the service(s) for which the member is nominated, and an evaluation of the service to be recognized by the award. Nominations are not retained for subsequent years but re-nominations are accepted for consideration.

Please send your nomination before June 1, 2020, to:

Peter Rusch, Chair
Ottenberg Award Selection Committee
Silicon Valley Section
American Chemical Society
P.O. Box 395
Palo Alto, CA 94302-0395
E-mail: ***PFRusch@aol.com***
Fax: 650-961-8120

Ihab Darwish 2017 Ottenberg Service Awardee

2020 Outreach Volunteer of the Year for the Silicon Valley Section

Natalie McClure

While most of our efforts require dedicated teamwork, because of the leadership role Natalie played in outreach efforts in 2019, she was nominated for the 2020 Outreach Volunteer of the Year Award given by ACS. We are delighted to announce that she was one of the finalists! Natalie will receive her award at the Silicon Valley Section's Annual Picnic and Awards event that will be held in July. Here is a brief summary of her accomplishments:

"Natalie McClure is amazing! She is creative, a leader, and a doer with an endless fountain of energy. She created an escape room chemistry game that was played at two local universities.

She led an evening of chemistry experiments for Tech Trek, a program for middle school girls designed to keep them interested in STEM. She managed our ACS Project Seed program that helped fund two high school girls doing summer research at Stanford. She spearheaded efforts to be in Palo Alto's S.T.E.A.M. event. She led our efforts for the Bay Area Science Festival, a large event held in San Francisco."

Outreach Volunteer of the Year (VOTY) awards recognize the immeasurable efforts made by ACS local section volunteers who conduct outreach and teach the public about chemistry. ACS presents awardees with a small gift and a certificate during a meeting or event hosted by the local section. The awardees are also recognized at the annual ***ChemLuminary Awards***, on social media, and in a special article in ***C&EN***.

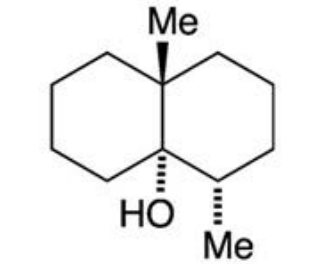
COVID-19 News Links

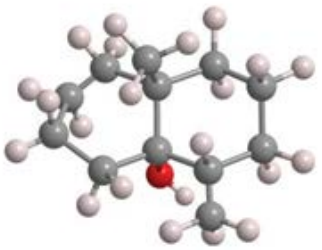
Here are a few resources to help keep you up-to-date on Coronavirus activity:

- Chemistry in Coronavirus Research: A Free to Read Collection from ACS – ***Virtual Issue***
- ***R&D on Therapeutic Agents and Vaccines for Coronavirus*** by CAS in ACS Central Science
- Continuously updated, see Nature magazine's ***latest news***
- Protein Data Bank in Europe – ***COVID19 entries***
- ***LitCovid*** – Updated daily, this is a curated hub of literature about COVID-19 from PubMed.
- Updated daily, the Dimensions Plus database has identified publications, datasets, patents, and clinical trials on COVID-19. View ***search results*** or download citations as a ***Google Sheet*** or as a ***CSV file on Figshare***
- John Hopkins University's ***Mapping 2019-nCoV***
- ***Bing COVID-19 Tracker*** – Using data from CDC, WHO, ECDC, and Wikipedia, Microsoft has launched an interactive Bing Map. ***More info***
- ***Amplyfi's Coronavirus Gateway*** – updated daily, includes data from WHO, CDC, ECDC, NHC, and DXY daily by Johns Hopkins CSSE.

CHEMISTRY *Quiz*

I can trap disease-carrying mosquitoes.





What molecule am I?

Answer

2020 CCEW Illustrated Poem Contest
Protecting Our Planet through Chemistry

The Silicon Valley Local Section of the American Chemical Society (ACS)
is sponsoring an illustrated poem contest for students in Kindergarten through 12th grade.

Contest Deadline: May 1, 2020

Prize: $25 Gift Card

Contact: Elizabeth Migicovsky (*elizabeth.migicovsky@sjsu.edu*)

Winners of the Silicon Valley Local Section's Illustrated Poem Contest will advance to the National Illustrated Poem Contest for a chance to be featured on the ACS website and to win prizes!

Write and illustrate a poem using the CCEW theme, "Protecting Our Planet through Chemistry."
Your poem must be no more than 40 words and in the following styles to be considered:

HAIKU - LIMERICK - ODE - ABC POEM - FREE VERSE - END RHYME - BLANK VERSE

Possible topics related to sustainable chemistry include:

- Green chemistry
- Environment
- Pollution
- Clean air and water
- Natural resources
- Waste

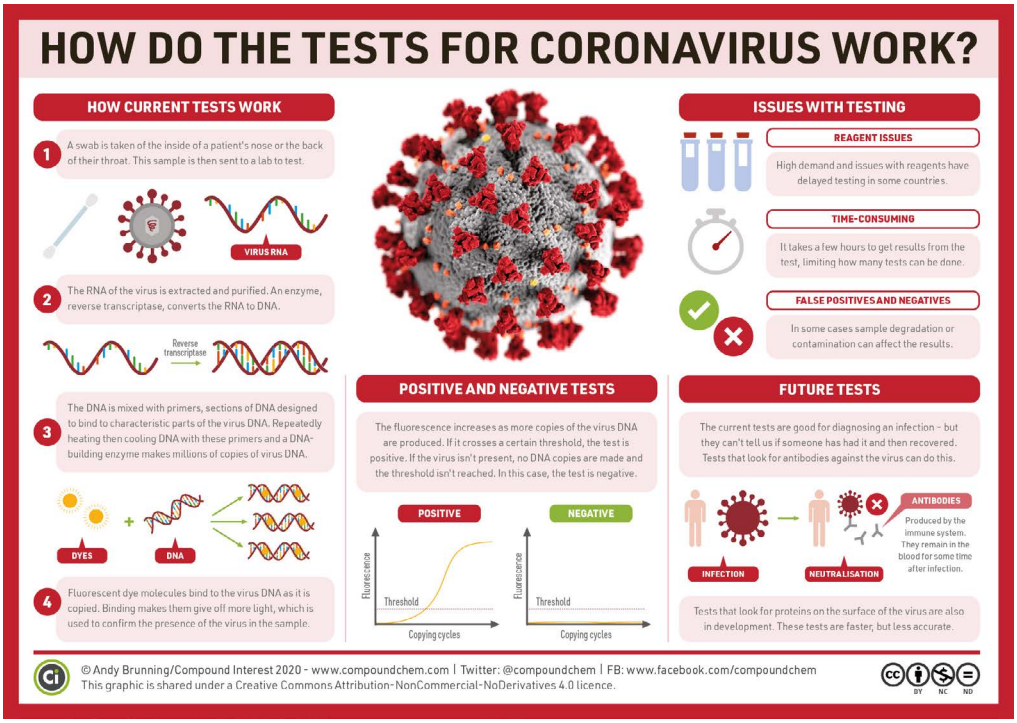
Entries will be judged based upon:

Artistic Merit - use of color, quality of drawing, design & layout
Poem Message - fun, motivational, inspiring about yearly theme
Originality Creativity - unique, clever and/or creative design
Neatness - free of spelling and grammatical errors

Take a look at last year's winning entries!

Contest rules:

- All poems must be no more than 40 words, and in one of the following styles to be considered: Haiku, Limerick, Ode, ABC poem, Free verse, End rhyme, and Blank verse.
- Entries are judged based upon relevance to and incorporation of the NCW theme, word choice and imagery, colorful artwork, adherence to poem style, originality and creativity, and overall presentation.
- All entries must be original works without aid from others. Poems may be submitted by hand on an unlined sheet of paper not larger than 11" by 14" or scanned and sent via email. Illustrations may be created using crayons, watercolors, other types of paint, colored pencils, or markers. The illustration may also be electronically created by using a digital painting and drawing app on a computer, tablet, or mobile device.
- The text of the poem should be easy to read and may be typed before the hand-drawn or digital illustration is added, or the poem may be written on lined paper, which is cut out and pasted onto the unlined paper with the illustration.
- No clipart or unoriginal images can be used.
- Only one entry per student will be accepted; all entries must include an entry form. If the illustration is created using a digital painting or drawing app, the name of the program must be included on the entry form.
- All illustrated poems and/or digital representations of the poems become the property of the American Chemical Society.
- Acceptance of prizes constitutes consent to use winners' names, likenesses, and entries for editorial, advertising, and publicity purposes.



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2020 Section Officers

Chair	Matt Greaney	510-410-0195	greaney19@gmail.com
Chair-Elect	Jigisha Shah	315-289-5115	jssheth@syr.edu
Past-Chair	Grace Baysinger	650-725-1039	graceb@stanford.edu
Secretary	Laura Yeager	626-826-3145	laura.yeager123@gmail.com
Treasurer	Ihab Darwish	650-624-1389	darwishis@yahoo.com

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2018-2020	Natalie McClure	650-906-7831	nmcclure@drugregulatoryaffairs.com
2019-2021	Linda Brunauer	408-554-6947	lbrunauer@scu.edu
2019-2021	Jane Frommer	408-927-2225	jane@collabra.net
2019-2021	Sally Peters	650-447-3027	sallybrownpeters@gmail.com
2020-2022	Matt Greaney	510-410-0195	greaney19@gmail.com
2020-2022	Madalyn Radlauer	408-924-5482	madalyn.radlauer@sjsu.edu

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2020-2022	Todd Eberspacher	650-723-2505	eberspacher@stanford.edu
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2020-2022	Heddie Nichols	310-435-2133	hnichols105@gmail.com
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2020-2020	Peter Rusch	650-961-8120	pfrusch@aol.com

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Silicon Valley

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