



The Conglomerate

The Monthly Newsletter of the Reno
Gem and Mineral Society

April 2022

General Meeting

Wed. Apr 6, 7pm

Baldini's Second Floor

Board Meeting

Wed. Apr 13, 6 pm

Rock Building, 480 S. Rock,
Sparks

RGMS Mission Statement

The mission of the **Reno Gem and Mineral Society** is to create, develop, and encourage interest in the Earth Sciences and to locate and identify various material through field trips. As a **501C₍₃₎** corporation, RGMS qualifies for donation write offs of cash and materials. Donation receipts are available at the society's headquarters.

A **General Meeting**, open to the public, is held usually the first Wednesday of each month at 7 PM at Baldini's Casino, Second Floor, 865 S. Rock Blvd, Sparks, NV.

Board meetings are open to all members and are held the second Wednesday of each month at 6 PM at the Rock Building, 480 S. Rock Blvd., Sparks, NV.

Annual membership dues: student: \$25, Individual: \$35, and Family: \$50.

Conglomerate 2022

Digital edition: free to members.

Paper version, \$30 paid in advance.

Copies at the meeting \$3 each, free to guests.

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PRESIDENT'S MESSAGE *Dean Sizemore*

Hard to believe we are a quarter of the way through the year already. The field trip schedule is on p. 3, and offers a great variety of trips with a lot of weekend ones this year, and trips to many new places and spots we haven't been to for years. Weather caused a postponement of our first trip but it's still on.

I try to tell everyone around that they are doing a good job when they are, which with this group is all the time. I couldn't be luckier to have the Board I have and if I haven't said it enough, I am very proud of their continuous accomplishments and effort. We had an incident that some are aware of at our February board meeting; passions ran a little high at the end of the meeting, but after a month for everyone to think it through as I knew they would, they came back apologizing and shaking hands. I am so proud of them and the character they showed despite outside forces that would try to inflame things. They are the reason we are so successful, and why our building expansion is moving at the pace it is. Leading our building expansion we have Patrick who works more hours than you can imagine and who has helped find many ways to get the most out of our finances and effort.

But we can use more help., I know; it's a broken record, but so true. We have some key openings in our organization and we need your help. You can find out by reading the volunteer report, p. 4.

Be sure to visit the website, renogms.org on a regular basis for new information and updates. All the officers have new emails, so make sure to check the back of the Conglomerate for the new emails.

Board meetings are on the second Wednesday of each month at the Rock Building, 480 S. Rock, at 6PM. Please feel free to join us in person or on Zoom to see what it takes to be involved and help. Any position that's open has a job description and the previous or current person can share with you what it takes.

Our building fund for the expansion is going well but still short of its goal. The expansion will allow more classes, more open houses, the museum we've been planning for years, and an expanded library. Money isn't the only thing we need; you can donate materials yourself or by contacting local companies for donations or giving us, a lead and we can contact them. Labor is a big help; volunteering time to clean, tape and texture, paint and so on help tremendously.

Have a great April and a Happy Easter with your kids, grandkids, or rock hunting. Have fun! Denise and I will see you out there.

Spring 2022 Artisan Craft Fair
Theresa Langhans, Coordinator

2022 RGMS PICNIC
Denise Sizemore,
RGMS.socialdirector@gmail.com

Time is here for our semi-annual Artisan Craft Fair. I hope that you will visit us, do a little shopping, and support our RGMS members. The show is :

Friday	April 8	10am-6pm
Saturday	April 9	10am-5pm
Sunday	April 10	10am-3pm

We will have 20+ vendors selling everything from Fairy sticks to beautiful jewelry, stone and wood art, professional award-winning photography, stones and slabs. Shop now for unique items for your Mother's Days gifts. Shop for yourself.

Please assist with advertising and forward the attached postcard to friends, neighbors, work, etc.

Hope to see you there!

We have a time and a date! Saturday, May 21, 11am to 4pm at the Sugarloaf Pavilion at Lazy 5 Park, 7100 Pyramid Hwy., Sparks.

Lunch will be at noon and feature the traditional hamburgers and hot dogs. Please sign up to bring one of the following:

- Hamburger Patties,
- Hot Dogs,
- Hamburger Buns,
- Hot Dog Buns,
- Snacks,
- Side dishes,
- Salads, or
- Desserts.

We are estimating 100 people. If everyone will please RSVP, things will flow more smoothly.

RGMS will provide condiments, soda, water, plates, silverware, and cups.

We will have our customary BINGO games, and a Raffle (must be present to win).

Donations are needed for both. Please accompany your donation with a note containing your name and any info you know about the donated items, including a price for 501(C₃).

RSVP by May 16th with how many are coming and what you are bringing to share.

Please contact me
RGMS.SOCIAL@RENOGMS.ORG

**Mineral of the Month—
Fornacite**

D. W. Webb Varnum

FORNACITE, [Pb₂Cu(CrO₄)(AsO₄)(OH)] is a



Eagle Eye Mine, La Paz Co. AZ

rare lead and copper based mineral named after the French Governor of the Congo in the early 20th century--Lucien Louis Fourceau whose name means "The Furnace". Despite the lead and arsenic content, fornacite is considered a safe mineral. Its transparent to

translucent crystals range from deep green , green to gold green, or even bright yellow. It has an olive green streak, a hardness of 2-3, specific gravity of 6.27, and an irregular to conchoidal fracture. It is soluble in HCl. Found in oxidized hydrothermal deposits in several

Nevada counties--Humboldt, Elko, Clark, Nye, and Esmeralda. The type region is the Congo.



Reneeville Mine, Republic of the Congo

Sources:
Mindat.org, Wikipedia, Wikimedia, Handbook of Minerology

**Field Trips
Scheduled**

Our second field trip (April 2) will be to a new location just north of Fernley. We will meet at 7 AM at the Love's Travel Shop, Exit 46, then left under I-80 to the dirt parking area on the left. (North side of I-80) Address is: 825 Commerce Drive, Fernley, NV. This is a new site for RGMS, and Eric Lundin will lead the adventure. Fluorite crystals (green) and dog tooth calcite crystals are found here. Remember to top off your gas and bring lots to drink and a lunch. We will be traveling on a rough dirt road. You will need high clearance and/or 4 wheel drive. Be ready to have a good time. See you there at 7AM sharp. We leave at 7:20 AM.

Scheduled Trips

May 13, 14, 15:

Overnight
Gabbs
Quartz Mountain road campsite
Opalized wood, jasper and agates
Kayla, trip leader

May 28, 29 & 30th:

Overnight
Luning
Fossils, ammonites, jasper, agates
Hillary, trip leader
(New location)

June 10, 11, 12th:

Overnight
Berlin, NV
Fossils, agate, chalcedony
Hillary, trip leader
(New location)

July 8,9,10,11th:

Overnight
Texas Springs
Pink Petrified wood and more
Eric Fendelander, trip leader (5 yrs ago last trip)

August 26, 27, 28, 29th:

Overnight
Black Rock Desert
Geodes, chalcedony, agates, petrified wood and more
TBD

Sept 16, 17, 18, 19:

Overnight
McDermitt
Geodes, jasper, petrified wood, picture stone.
TBD

**Education Outreach
Steve Norman**

Reno Gem and Mineral Society's Education Outreach program made 18 classroom presentations to about 400 students. Each presentation is scheduled for an hour: Van Gorder ES fourth grade classes with 120 students; Sun Valley ES fifth grade after-school class with 12 students; Dunn ES third and fourth-grade classes with 110 students; Smithridge ES fourth grade with 96 students; and Vaughn MS seventh and eighth-grade after-school program with 60 students. The Vaughn Middle school students received a presentation on minerals one day and the next day a look at natural disasters in the Nevada region. Students are encouraged to do well in school and think about pursuing science education. Every student is given a mineral gift and information to take to their parents about the Reno Gem and Mineral Society. We get support from the Nevada Division of Minerals with stickers, pencils, and brochures that explain to parents how to keep safe in the wide and wild spaces of Nevada. I want to thank **Debbie Bush** and **Sam Knipmeyer** for their help in giving the classes and to **Alan and Bobbi Metzger** for furnishing student and teacher polished stone mineral gifts.

Volunteer Report
Terry Bush, Volunteer Director

Amazon Smile
Robyn Howard, Treasurer

Hello everyone. As always we have a plethora of opportunities for anyone interested in lending a hand in running the RGMS. Additionally we are currently working on the expansion project at the Rock building and can always use both skilled and non-skilled help. For the latter keep an eye out for blasts that stipulate days and hours. For the former please see the list below and contact me if you are interested in learning more. Happy rock hounding.

Jackpot of Gems Silent Auction Chairman – The chairman guides a committee of volunteers collecting, cataloging and labeling donations for the auction and runs the auction at the JPOG show.

Facility Director – Responsible for coordinating building repairs and upkeep and working with the Security Director to maintain security of our facilities.

Sunshine Director – Reaches out to members who are having difficulties in their lives be it medical or otherwise.

Assistant to the Secretary – Work with our current Secretary (Steve Norman) to attend and take notes of various meetings that that require his attendance.

Shop Director – Responsible for the necessary equipment and supplies for and maintenance of equipment needed for classes and other shop uses as approved by the BOD

Generate Donations

Are you a regular Amazon shopper?



Support us by signing up for 1/2% of all eligible purchases goes to **Reno Gem and Mineral Society, Inc.**

- ◇ no fees, no extra cost.
- ◇ Completely free to you.

When you set up an Amazon Smile account, simply specify **Reno Gem and Mineral Society, Inc.** as your charity of choice.

Go To: <https://smile.amazon.com/>

Thanks for “Celebration of Tamela”
Norma Wortman (Tamela’s mother)

A big Thank You to the members of RGMS for hosting the memorial for Tamela Ruth (Wortman) Germano last month on February 27th. It was long overdue because of Covid, but it was well attended by many of her family and friends from different groups, as well as from the membership of RGMS. It was estimated that around 50 people attended. Many, many people shared stories about Tamela, as well as intermingling and sharing stories with each other.

We appreciated all the work done by everyone from RGMS, including the organization, the set up, the refreshments provided, the decorations, etc. It was well done! Thank you most sincerely.

Membership
Janet Longueira, Director

RGMS continues to grow. Remember we must receive your membership dues for you to attend field trips, take classes, and receive the Conglomerate. Complete the application attached and send it in. It can also be obtained from the website, [Membership – Reno Gem & Mineral Society \(renogms.org\)](http://renogms.org).

We want to welcome all of the new members who have joined us recently:

- | | |
|--------------------------|------------------|
| Patricia Chalas | Susan Petry |
| Thom & Joanna Deane | Don & Trish Hays |
| Robin Farrage | Monika Jaworska |
| Mark Oswell & Molly Hart | Kathryn Savage |
| Bob & Thala Wolin | |

We also welcome back those who have renewed their membership,

- | | |
|--------------------|------------------|
| Juliet Hitchcock | Renée Samuels |
| Colleen Laidlaw | Susan Wildermuth |
| Scott & Barb Olsen | Kathleen Worbel |

Letter from the Past
Phillip Weirauch, RGMS Historian

It was 1977/78, the society was thriving, Kids were running around and rocks were hunted. It was the year when the Wolf Pack was the Number 1 football team--not in the region, not in the state, not in this part of the country, no, but number one in the whole nation ! Yep, you read this correctly: Reno's very own Wolf Pack closed the 1978 season with an 11-0 record as the nation's only unbeaten team the entire season. They played their first season in what was then called the I-AA football (now called NCS).

Just one year before this incredible success in football, in June 1977, our society held its annual Jackpot of Gems, and that was a show for the record books as well:

First of all, according to the invitations, it was already the 38th show held, which would put the first Jackpot of Gems in the year 1939! Can you believe it? I have not found additional proof of that date yet, but will dig deeper into it and let you know. If anyone has more details on this distant past, please contact me!

1977 was also the year when one of our founding members, Mrs. Gladys Hamm, died. She was born on April 19, 1894 in Sheridan, Wyoming! And she

April Meeting Announcement

Please join us for our general meeting on Wednesday April 6th 7pm.

RGMS member Lori Peterson will present part two of her talk on agates.

We will also have our wonderful door prizes with our theme of spring colors and rock eggs.

Come early to sign up for classes and meet up with friends. See you there.

was not only one of the founders of the Washoe Gem and Mineral Society, she also helped to establish the Nevada Historical Society, and was on the faculty at Sparks High School for 17 years. And she was one of 6 life members of our society at that time. Maybe she was one of the initiators of the original Jackpot of Gems in 1939? Who knows? I will try to do some more research in newspaper archives.

Most notably that 1939 show was also the show where a \$365,000 uncut Sapphire "disappeared." That is roughly \$1,700,000 in today's money. Peter Dias of Paramount, CA told police that he and his partner were setting up for the show and showed the 29.77 carat gem to one of the security officers. When they later set up the display case and opened the jewelry box it contained 12 plastic bags to hold gems and one was empty. The stone was actually already sold and should have been delivered the following week. There was no insurance on the stone. According to the pictures and follow-up articles, the rest of the show was, nevertheless, quite a success.

And our very own **Edmund C. Douglas**, representing the RGMS, informed the city council that for the show he was expecting around 1,000 RVs. And boy, was that a problem.

At this time there was still a law in place which restricted RVs to using RV parks. And these RV park owners opposed any change of that law. But since there were only a total of 378 legal RV spaces available, the council reconsidered its original denial and changed the law.

So if you are nowadays a happy RV street-camper, remember it was our 1977 RGMS Jackpot of Gems which enabled you to do so!

Board Meeting Minutes –February, 2022
Steve Norman, Secretary

President Dean Sizemore called the meeting to order at 6:00 PM. Vice President **Steve Smith** led the pledge of allegiance.

Secretary's Report: **Steve Norman** has board meeting notes for anyone needing a copy and Board members have a copy via email. Many members said they had not read them or didn't remember getting them so they will be resent. Corrections may be emailed. **Web Varnum** made a motion to approve the February Board notes as amended. **April Young** seconded. Motion carried.

Treasurer's Report: **Robyn Howard** reviewed the Profit and Loss Statement for January 2022. Robyn reviewed the Profit and Loss statement showing \$2,342.50 Total Class fees income, Total membership income \$3,033.00, and California Federation Mineral Society Member Insurance for the year at \$3,168 expense. The Balance Sheet as of February 9, 2022, shows a total bank account of \$89,056.31 and total fixed assets at \$142,000. Total other assets \$171,677.93 with Total Assets \$402,734.24. The Building fund started with \$6,350 and with a \$2,000 gift card donation, an anonymous matching gift of \$5,000 for donations, and \$2,720 there is now \$14,070. **Tom Nichols** moved to accept the Treasurer's report. **Steve Smith** seconded and the motion carried.

TechChair: **Breia Sanders** suggested putting the picture poster done by **Carol Ennis** to show building fund progress on the website. It could also be shown on the Conglomerate.

President Sizemore: Dean provided a Board position job description with instructions to add or delete items to make the job descriptions up to date. TechChair does not have a job description since the position is new. Breia and Tom Nichols will write the duties. Dean reported for **Terry Bush's** absence that volunteers are needed for Field Trip Director, Publicity Assistant, Assistant Secretary, Facilities Director, and Shop Director. Junior Rock hound advisor, and Silent Auction manager for the Jackpot of Gems Show. Dean reminded volunteers to report their hours to Terry Bush monthly. Dean introduced **Deno Germano** who informed the group that a memorial for his late wife will be Sunday, February 27, which is also **Tamela's** birthdate. The event will begin at 10 AM till 2 PM.

TechChair: **Breia Sanders** has worked on email access to all board members with a changeable password. Breia plans to do a class on how to post on Facebook. She has plans for a Board and General Meeting presentation. Curtis, her fiancé is going to start a Blog for the Society. Breia has made progress on the e-commerce part of the website with **Mark Cabangon** testing. The plan is to allow donations to the building fund through the website. Sven Sanders reported that the Facebook Group page is at 12,000 views last month a 36 percent increase. The Facebook page is 150 percent increase over a year ago. Please continue to post by commenting at least once a week on the Facebook Group site.

President Sizemore noted that he had a report of \$910 bidding so far on the 32 Auction. Saturday, February 12, 2022, is the pickup and payment day. Dean in for Denise reported \$310 on the door prize at the General Meeting. She counted 79 in attendance at the General meeting.

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The Rock Building (TRB): No report with Zoom connection problem.

California Federation Mineral Association: Nothing to report; however, **Sue Webb** will be acting as her assistant. American Federation meeting May 5-7 and CFMS Oct 13-16 in New Orleans. There is also a Rocky Mountain Federation meeting in Las Vegas from June 16 – 18.

Conglomerate: Director **Sue Webb** announced her new assistant **Karen Boldi**. She needs all articles by the 15th of the Month with articles from the Board members or commission Directors. Sue is a great editor and will make the articles look good for publication. (Former teacher/professor). Advertising is available on the Conglomerate at \$30 per year for a 2x3 inch business card size.

History: **Philipp Weirauch** absent.

School: Director **Julie Hilsabeck** reports busy lapidary with possible a class offered on Saturday from 10 AM to Noon. Silver fabrication has some space available so for any questions contact Julie by her email. She is working on a Stabilizing class for February 25 – 26.

Security: Director **Carl Olson** has a key inventory and working with instructors to have access to toolboxes. There will be a lockbox installed with a combination lock and a logbook.

Education Outreach: **Steve Norman** reports that the Future Rock Hounds of America met on January 15 from 2 PM to 4 PM. There were 23 students in attendance and 10 parents. The class went over Rocks and Minerals used by people every day. The educational team visited Lemmon Valley ES and 4 classrooms making presentations to fourth-grade students. Each student receives a polished rock thanks to **Alan and Bobbi Metzger**. Webb Varnum presented Mineral Identification to the Mason Valley Mineral Society.

Field Trips: Vice President **Steve Smith** announced that the first trip of the season is scheduled for Wonderstone Mountain outside of Fallon, NV on March 5. See details in the Conglomerate and get the email blast.

Guest Speaker: VP **Steve Smith** stated that **Lorrie Peterson** will be the presenter in March and April with an Introduction to Agates. A discussion by several board members that the focus should be on the presenter and not so much on RGMS business that goes over a lot of information that is in the Conglomerate. It was suggested that if a presentation was going long that the presentation could be continued at a stated time and place at the Rock Building. No action was taken just discussion.

New Business: VP **Steve Smith** explained the need for a donation policy. Each board member was given a list of items that may be considered for a policy. Steve asked for input to add or delete ideas or come up with new ideas that would make good protocols in regards to picking up delivering donations. No action was taken on anything but just to review the material and get back to Steve Smith next month at the Board meeting.

Sometimes people are not donating but are interested in selling their equipment or material. This is a different situation where they could be times when a buying committee could convene to purchase some things at a good price for the Society. If the Society was not interested then, anyone else interested could purchase from a seller. It was brought up by the Treasurer that due to tax and storage problems RGMS would not do consignments. It is up to the seller of materials to make the sale and provide at least a 10 percent fee for using the Society's resources.

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Used Equipment Sale: **George Forbes** will be in charge of the Used Equipment Sale at the Rock Building on Saturday, March 19, 2022. See Conglomerate for more details. 2.

Shop: President Sizemore reported in **Chuck Jackson's** absence and awaiting a new shop director that Chuck is still working on the big project of getting a 24 inch saw put back together. A thank you letter was sent out to the person who donated the saw to our Society.

Photographer: **Steve Smith** needs a photo release form that membership could fill out to consent to use pictures in the Conglomerate publication primarily. A suggestion to make it a part of the membership form. The photo release is also required for children. The issue will be researched with CFMS and AFMS resources.

Craft Fair: Security: **Theresa Langhans** reports 12 dealers signed up so far. She will need the sign-up for table space by the middle of March to secure a one-time event license. The Craft Fair is scheduled at the Old Town Mall for April 8 from 10 AM to 5 PM, April 9 from 10 AM to 4 PM and April 10 from 10 AM to 3 PM. See Conglomerate for more details.

American Land Association: Director **Al Bolshazy** absent

Public Relations: **Carol Ennis** reports work on a trifold featuring classes and events suitable for passing out during the year at any event RGMS participates and could be put on Facebook.

Membership: Director **Janet Longueira** reports RGMS with 226 memberships adding up to 398 members. Janet asks that as soon as possible to get your renewal turned back in for next year's exciting events. Janet reminded Board members to be respectful and not hold side conversations.

New Business: (Amended) A member requested a correction of last month's (January) Board notes that stated that there was no one making any claims on sites used by RGMS on field trips. **President Sizemore** noted that he had looked into the ONE incident that was brought up and it was not where we go. He did not say no one has done that even though it was maintained that claims were being made even when done for the good of the Society by Society member(s). A couple of Board members supported the president's assertion, one vociferously. Later it was established by other people in attendance that claim(s) were being made to maintain the right for RGMS to use the field trip sites. The vociferous member apologized for his outburst.

President Dean Sizemore asked that anyone needing to contact him, please use his cell phone number as emails may not get looked at till the end of the day.

Adjournment: 8:08 PM.

Note: Next General meeting at Baldini's Sports Casino is on Wednesday, March 2, 2022, starting at 7 PM.

A Deep Burning under a Thin Skin, Rebecca Phillips, Washington State Magazine, Spring, 2022, pp. 29-33. Reprinted by permission of Washington State Magazine.

From the air Grand Prismatic Spring resembles an enormous multicolored eye. Set in Yellowstone’s volcanic caldera, the hot spring gazes up with a brilliant blue “pupil” surrounded by vivid rings of turquoise, green, yellow, orange, and rust.

Third largest in the world, Grand Prismatic is heated by an underground magma chamber that boosts the blue part of the pool to around 200 degrees Fahrenheit. As the water spreads out and cools, it creates distinct layers that support specific types and colors of heat-loving bacteria.



Photo Sam Beebe/ Wikimedia Commons

Not only do the bacteria tolerate extremely high temperatures, they also endure dangerously low pH levels. In essence, Grand Prismatic Spring is a beautiful vat of boiling acid.

The spring is just one of Yellowstone National Park’s 10,000 hydrothermal features that range from mud pots and geysers to fumaroles and travertine terraces like Mammoth Hot Springs.

Their eruptions and bubbles indicate that the rare hotspot volcano is very much alive, a fact confirmed by constant seismic activity.

Washington State University (WSU) geology professor, Peter Larson has spent 18 years investigating Yellowstone’s hot springs as well as the nearby rock formations that were altered by these complex waters.

“The rocks are discolored reddish and white at the Lower Falls of Yellowstone River, where it plunges into the Grand Canyon of the Yellowstone,” says Larson. “I tried to get approval from the Park Service to do field work there in 2006, but they said it’s too difficult to recover people who fall or get injured. So, we were granted research permits to work downstream at Seven Mile Hole.”

Larson says when hot springs flow through subsurface rocks, they react with them chemically, leaving tell-tale alterations. Studying these alterations provides clues to prior activity of the hydrothermal fluids at Yellowstone—including hints as to when the massive super-volcano might once again erupt.

“The last violent eruption was 640,000 years ago,” says Larson. “A thousand cubic kilometers of ash fell over much of the US, to east of the Mississippi River. It was the third in a cyclic series of eruptions at Yellowstone.”

“There was a big one 2.1 million years ago that produced the Huckleberry Ridge Tuff and another about 8000,000 years later with the Mesa Falls Tuff.” He says. The most recent eruption occurred 660,000 years after that, and it’s now been 640,000 years since that event. Past behavior isn’t always a true prediction of the next eruption but we’re somewhere in that window of when you might expect another big one.

“It’s not going to happen anytime soon,” he cautions. “But it would be nice to have an idea and that’s part of the motivation for our research.”



Mist rises from the Yellowstone River (Photo Peter B. Larson)

Larson says the Yellowstone caldera is a hotspot volcano that formed from an errant plume of magma rising through the Earth’s mantle. The magma melts rocks in the crust, creating the shallow chamber and much deeper reservoir that superheat Yellowstone’s hydrothermal features.

Unlike Mount St. Helens in the Cascades, hotspot volcanoes do not occur along the edges of tectonic plates. Instead, the tectonic plate moves over the hotspot, creating a chain of volcanoes, which in time become dormant as they move off the plume.

“Yellowstone is the continental equivalent of Hawaii as a volcanic system, says Larson.

Since 2007, Larson has organized rustic research trips into Yellowstone for many of his graduate students. Though recently retired, he maintains a lab in support of his last doctoral student, Jarred Zimmerman, who is investigating altered rocks in the Grand Canyon area of the park.

“Jarred’s work is important because when basalt magma works its way into the crust beneath the caldera, it creates a rock called rhyolite that causes catastrophic eruptions,” says Larson. “We can estimate the amount of basalt being input into the crust by looking at how active the hydrothermal system has been. The altered rocks give an indication of that.”



Jarred Zimmerman examines a rock while Peter Larson watches during a hike in the Grand Canyon of the Yellowstone (Photo Peter B. Larson)



WSU student gathers data at a Yellowstone hot spring (Photo Peter B. Larson)

Sampling those altered rocks, however, is dangerous and challenging.

“You have to hike three miles into Seven Mile Hole and then it drops 1,000 vertical feet into the canyon,” says Zimmerman. “I carry a big backpack with three liters of water plus rock hammers, bags, a shovel, and GPS.” And he never goes alone.

Zimmerman says that over time, changes in hot water levels created a highly acidic environment that “chewed on the rocks and made them crunchy,” which helps with identification.

“We are looking for signs of volcanic cyclicity in the rocks,” Larson adds. “Has the rate of basalt recharging into the crust been constant or varied or the years? We’re in a period right now where there’s a lot of basalt coming in.”

That finding aligns with Larson’s earlier studies on hot water discharge in the Morning Mist Springs in Yellowstone’s Lower Geyser Basin. Larson says it’s another way to measure the activity of the magma.

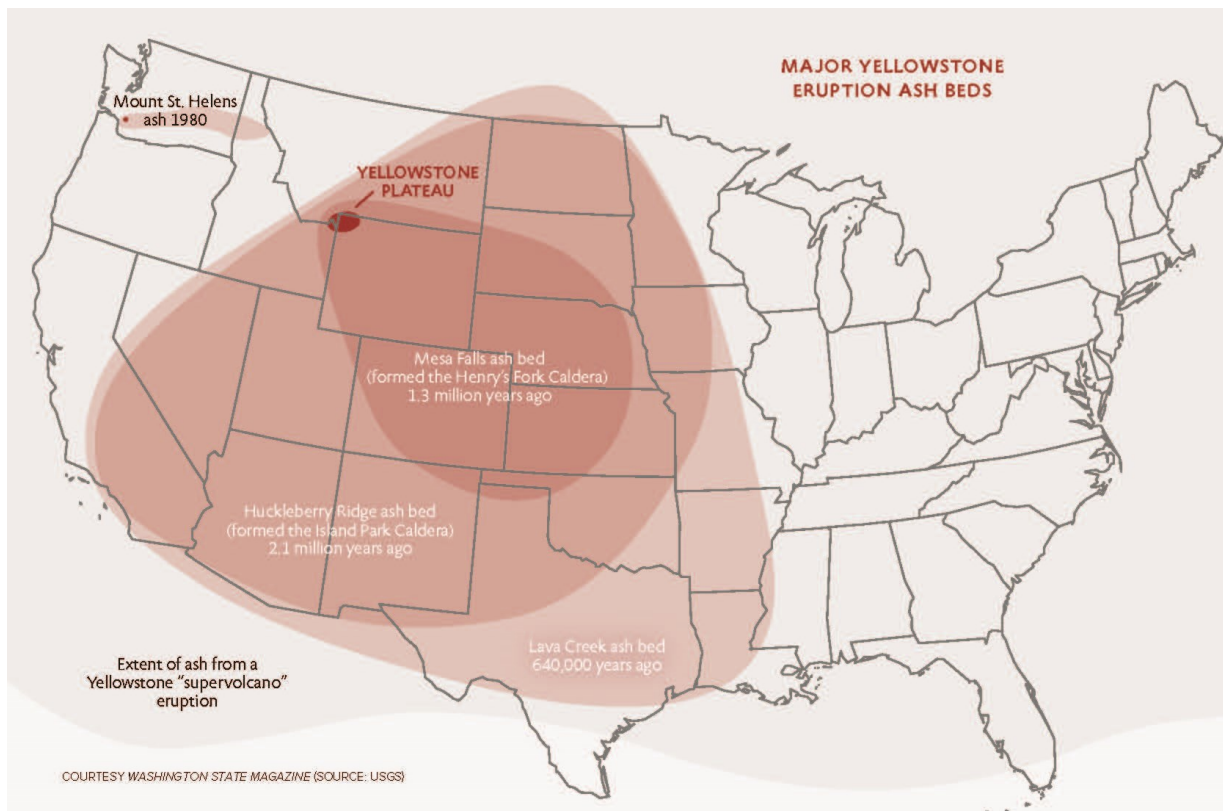
In 2014, he and University of Idaho (UI) geologist Jerry Fairley set out to determine how much water and heat were coursing through the hot springs.

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“Basalt is coming up from the mantle into the lower crust,” says Larson. “The heat goes in the bottom and comes out at the top. We wondered if we could estimate how much magma is coming in by doing a thermal balance.”

To avoid harming sensitive bacteria living around the hot spring edges, the pair spiked the springs with deuterium, or heavy water, a safe compound that quickly dilutes to background levels.

Water samples taken throughout the day revealed, surprisingly, that the amount of magma entering the crust is likely much higher than previously thought. At the minimum, Larson estimates it as half the amount that is coming up under Kilauea volcano in Hawaii.



(Illustration *Washington State Magazine*/Source: USGS)

Their technique not only provides a new way to calculate how fast molten rock is recharging the Yellowstone caldera but also gives insights into the potential for future eruptions. The study was published in 2018 in the journal *Geosphere*.

Olivia Hecimovich ('21 MS Geol.) also conducted her graduate research on Morning Mist Springs during follow-up studies with Larson and Fairley. She too spiked the springs and found similar results. On days off, she joined Zimmerman in hiking the Grand Canyon of the Yellowstone and collecting altered rocks at Seven Mile Hole.

“The research was so enjoyable,” Hecimovich says, “It was a great experience. I felt like I was in the backcountry just living out of my tent. It was nice to wake up to have elk right outside and then make some coffee with my lab partners.”

Continued next page

Larson says his work has been successful “due to the fact I’ve had good students who are willing to climb into the canyon and carry out rocks to do analyses. It’s a great training ground and many have gone into good careers in the geoscience industry, USGS, research, and academics.”


Larson’s program has been funded by the National Science Foundation in partnership with UI, the United States Geological Survey, and Oakridge National Laboratory.

Tracking the Hotspot

Before it became a volcanic wonderland in Wyoming, the Yellowstone hotspot spent millions of years “traveling” through Washington and Idaho.

Ferried by plate tectonics, the North American continent has been gradually moving west over a plume of molten magma that periodically burst through the Earth’s crust, spewing lava onto the surface. As the continent moves off the plume, a trail of dormant basaltic floods and calderas is left behind.

That plume or hotspot once occupied the grounds of Washington State University Pullman, where evidence of volcanic flows can be seen in the rocky cliffs that border the southwest corner of campus.

“We’re sitting on some of the earliest history of the hotspot right here with the Columbia River basalts which underlie Pullman to the depth of 2,000 feet,” says WSU geology professor emeritus John Wolff. 

Those lavas were erupted from gigantic fissure vents that extended down through southeast Washington and Oregon 16 million years ago. We know because we have vertical walls of rock called dikes that are exposed in this region.”

Wolff says the massive eruptions created a basaltic floodplain that stretches from Spokane south to the Oregon-Nevada border—and from the Idaho panhandle west to the Pacific Ocean. Similar fissure vent eruptions have recently taken place on Hawaii’s Kilauea volcano.

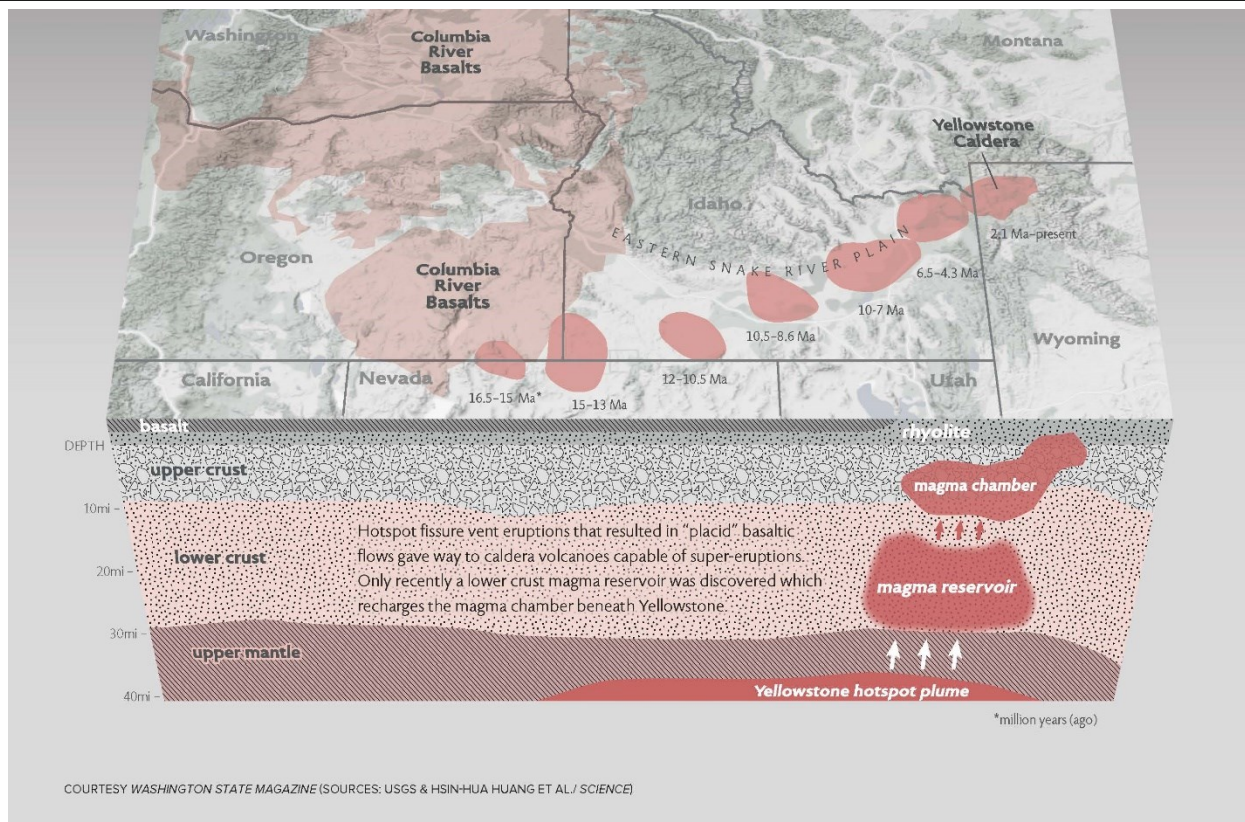
According to retired San Diego State University geologist Victor Camp (’76 PhD Geol.) the Yellowstone hotspot can be traced back even further to the Pacific Ocean off the coast of Washington.

Camp speculates that prior to 50 million years ago, the hotspot was part of the Siletzia oceanic plateau which later crashed into the North American continent during the Eocene. Evidence of the event is visible in exposed fragments of Siletzia rock on Vancouver Island, the Olympic Peninsula, and the Coast Ranges of Oregon and Washington.

From there, Wolff says, the hotspot slowly moved east eventually flooding the Pacific Northwest with layers of basalt.

Then, about 14 million years ago, along the southern Idaho-Oregon border, something strange occurred. The hotspot’s fissure vent eruptions abruptly gave way to caldera volcanoes capable of producing super-eruptions.

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(Illustration *Washington State Magazine*/Source: USGS & Hsin-Hua Huang et al./*Science*)

“The calderas progressively formed a chain all the way through southern Idaho leading up to the present-day location at Yellowstone,” Wolff says. “There were many calderas in the Snake River Plains 8-11 million years ago, and they produced huge eruptions of the Yellowstone type.”

Not only did the hotspot volcanoes change physical form, but their magma type changed as well. Gone were the placid basaltic flows. These calderas erupted extremely dangerous rhyolite, a type of rock that is formed when magma melts granite in the Earth’s crust.

A rhyolite eruption explodes with showers of molten glass that essentially enamel the entire landscape, killing every living thing on the surface. Ash particles also shoot into the stratosphere and gradually spread around the globe.

Wolff holds up a large chunk of shiny black rock. “The calderas erupted a kind of obsidian with crystals called vitrophyre,” he says. “It’s typically black glass which mostly crystallizes into gray rock soon after eruption.

“We find examples of it in bluffs all over southern Idaho, in the mountains and in the Bruneau Hot Springs area. The Black Rock Escarpment is a spectacular exposure. You can see layers in the cliffs there and each layer was a different eruption. Wolff says that in the future, the Yellowstone hotspot will likely continue to travel in an east-northeast direction toward Montana. Though nobody knows for certain, it could potentially keep moving forever.

Temporary Shop Director Job Needs Helpers

Patrick Davis

As temporary Shop Director, I would like to take a moment to thank **Chuck Jackson**, our former Shop Director for many years, for all of his hard work and most importantly his time in keeping the machines up and running and installing all of the new cabbing machines. This has definitely helped the Society to make expense money and to offer more classes, which makes more money to cover more expenses. The more money we make, the more specialized equipment we can buy for our members to use in the future as we build new classrooms to put the equipment in. Do you see the pattern here ?

I joined the Society a year ago this March and was able to take the first saw class Chuck Jackson offered in July of 2021 after the pandemic started. During the next couple of months, I stepped in and helped to run the all-day open houses on Mondays and Tuesdays with Julie while also helping out with the Lapidary and Saw Classes.

When Chuck needed to take time off in November for a break I stepped in and taught the saw class after doing an apprenticeship with Chuck. Then he took a new job and unfortunately does not have the time to give to the Society anymore. This is a big loss for the Society. We will all miss Chuck for his humor, knowledge and experience in almost all things rock and equipment related. We wish him all the best and hope that he has the time in the future to come back and enjoy the Society that he helped build. I offer my thanks to Chuck for all of his help in educating me in all things rock, equipment and Society related.

We have filled Chuck's position in Beginning Silversmithing with **Spencer Ennis** who taking on that class along with a couple of others. We have moved that class to Tuesday nights to take advantage of the new jewelry benches and work areas. This allows Advanced Silversmithing with Jill Atkins to remain on Thursday evenings and to use the same areas. Silversmithing is also available on Mondays and Tuesdays during the Open House period but without an instructor. All tools will be available to use.

Since then, I have taken over as temporary Shop Director, and with some help from Eric I have taught the saw classes since the beginning of January. I have also done my best to keep up with the maintenance of both the saws and the cabbing machines. As most of you know who do Lapidary, we have had issues with the new Johnson Brothers wheels that we had purchased. It seems that it is a manufacturing defect and we have addressed the issue by purchasing new Diamond Pacific wheels which we are now slowly replacing on all of the machines. We hope to obtain a credit from Johnson Brothers which we can use to acquire other items we may need in the future.

So now we come to the crux of the problems that all of this moving around has caused and how it has impacted the Society and the position of Shop Director. As many of you may know, I am also the Project Manager for the build-out of the existing building and the Project Manager for the new building tenant improvement.

This does not leave me a lot of time to deal with all of the issues that come with being the Temporary Shop Director and Saw Class Instructor. However, with the help of some of my friends in the Society we have managed to get all of the saws cleaned up and fixed at this time. Thanks to **Eric, Kayla, Chris** and **Todd** for helping out for almost a full day on a Saturday to clean the 3 trim saws, the 10" and 12" saws and one of the 18" saws. And thanks to **Sam** and **Deanna** and **John** to come in on a Monday afternoon and clean and help fix the 20" saw so that we can use it again. And thanks to Paul for helping me to clean up all of the old oil buckets and stuff that was scattered around. Unfortunately, Sam and Deanna are moving to Folsom, CA and we will miss them. Hopefully they will be able to visit often. John is also going through all of our old electric motors to see which ones work, to hopefully repair a few, and to help determine which ones we can use on other equipment or replacements for existing equipment.

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The cleaning and maintenance of the saws and the capping machines requires effort and time which I do not have as I am busy with the new build out and have many other things and personal issues on my plate. I hope that some members who have taken the saw class in the last 9 months could clean a saw or two occasionally to help me out. We can do this on a maintenance schedule with each volunteer having to put in only a couple of hours every 3 to 6 months. This work by committee can easily be done under my supervision until we find a new Shop Director to take over the duties.

I am also looking for people who have passed the saw class to help out with cutting slabs for our members, our classes, and for Jackpot of Gems and the 32 Auctions. I don't have time to cut slabs anymore (I used to cut for approximately 15 hours a week minimum). I do have **Phillip, John** and some others starting to help out with this issue. Starting in May, after we identify which donated rocks we wish to cut, we will be cutting for the next 4 months for our annual Jackpot of Gems Show on September 10th and 11th, 2022. There will be an incentive for members who wish to help out.

In addition, since I will be here so often during the next 6 to 9 months, there will be lots of opportunity and various times to come in and volunteer during the week, the evenings and the weekends to help out with different projects and rock cutting in the shop area. And last of all, I would like to take a minute to address some rumors, some comments and some observations.

I stepped in as **Temporary** Shop Director during a time when we thought Chuck would be back. I did not plan on being in this position as I had only planned on helping out when help was needed which I will still do. Then

I made the decision to jump in and continue to help out until a new Shop Director offers to take over. While I have a lot of diverse skills, I did not know a lot about this type of equipment. So, I have had to learn about this equipment, and how to maintain it and work on it. This has taken me more time as rock saws and capping machines were not my forte though I do understand the workings of them. I own a lot of different types of saws and equipment in my businesses that I have worked on over the years. Now that I have been working on them a lot, I know better what to do and how to do it. However, I

have heard of rumors and comments about how things could be better.

First, I am not a rumor or comment type of person. If anyone feels that they can do better as Temporary Shop Director, please step up and do so. The job is yours as I will gladly and quickly relinquish those duties. I do not have any intention of holding on to the Temporary Shop director position. I will, however, continue to teach saw classes as I enjoy doing that and helping members become proficient in cutting their own rocks.

Second, if someone thinks that the oil in the saws is dirty, that person should feel free to make the time to clean one or more of them. I definitely will not have any problems whatsoever with anyone who wishes to do that. The more people who feel that way and who will step up and help out, the better for all of us. As far as I am concerned, rumors and comments are detrimental to the function of our Society.

Photos—Steve Smith



School Report
Julie Hilsabeck, School Director

Look closely – there are class times and limit changes below! Beginning Lapidary, Introduction to Tumbling, Intro to Slab Saw Use, and Beginning Silver Fabrication will be registered for via e-mail only. An announcement email will be sent to all members on Tuesday, the 29th, between 6:00 pm and 10:00 pm. Your first class occurs before the General Meeting! If you want to enroll in one of the classes listed above, respond to the email (school@renogms.org) quickly as the classes fill rapidly. Payment will be collected at the first class meeting. All other classes will be registered for at the General Meeting.

Mondays:

Open House, 11:00 am to 9:00 pm, \$7.50/hour; Slab Saw use is \$.50 per square inch cut,

Tuesdays: Mandatory safety class occurs 30 minutes prior to start times for the first Beginning Lapidary class.

Beginning Lapidary, 1:00 pm to 3:00 pm limited to 4 students, cost is \$60.00 for the month

Introduction to Slab Saw Use, 6:30 to 8:30 pm, limited to 4 students, cost is \$60.00 for the month

Beginning Lapidary, 6:30 pm to 8:30 pm, limited to 6 students, cost is \$60.00 for the month.

Beginning Silver Fabrication, 6:00pm to 9:00 pm, limited to 8 students, cost is \$120.00.00 for the month, includes Kit fee

Wednesdays:

Introduction to Tumbling, 1:00 pm to 3:00 pm, limited to 4 students, cost is \$60.00 for the month and includes all supplies

Beginning Silver Fabrication, 6:00 pm to 9:00 pm on **only the 4th Wednesday evening**.

Thursdays:

Advanced Silver Fabrication, 6:00 pm to 9:00 pm, no limit on students, Cost is \$7.50/hour or \$90.00 for the month. There may be a kit fee as well.

Casting, 6:00 pm to 9:00 pm, limited to 6 students, Cost is \$120.00 (includes the kit fee) for the month

Fridays:

Beginning Wire Wrapping--this is a very basic beginner's class. Your project will be learning to wrap a quarter. There will be two classes on Friday, April 15th only. The afternoon class begins at 1:00 pm and ends at 3:30 pm. The evening class begins at 6:30 pm and ends at 9:00 pm. Class fee is \$15.00. Each class is limited to 8 students. Be sure to bring your quarters.

Saturdays:

Sundays:

April 2022

Sun	Mon	Tue	Wed	Thu	Fri	Sat
	Mar. 28 Open House 11am -9 pm	Mar. 29 Safety 12:30-1 6-6:30 Lapidary 1-3pm; 6;30-8:30 Slab saw 1:30-3:30 Beg. Silver Fabrication 6-9pm	Mar. 30 Tumbling 1pm-3pm	Mar. 31 Adv. Silver Fabrication 6-9pm Casting 6-9pmx	1	2 Field Trip Fernley
3 Wax Carving for Casting 9am-4pm	4 Open House 11am -9 pm	5 Lapidary 1-3pm; 6;30-8:30 Slab saw 1:30-3:30 Beg. Silver Fabrication 6-9pm	6 General Meeting 7pm Baldini's Tumbling 1pm-3pm	7 Adv. Silver Fabrication 6-9pm Casting 6-9pmx	8	9 FRA 2pm-4pm
10 Palm Sunday	11 Open House 11am -9 pm	12 Lapidary 1-3pm 6:30-8:30 Slab saw 1:30-3:30 Beg. Silver Fabrication 6-9pm	13 Board Meeting 6 pm 480 S. Rock- Tumbling 1pm-3pm	14 Adv. Silver Fabrication 6-9pm Casting 6-9pmx	15 Wire Wrap 1 pm-3:30 Wire Wrap 6:30-9pm i	16
17 Easter 	18 Open House 11am -9 pm.	19 Lapidary 1-3pm 6:30-8:30 Slab saw 1:30-3:30	20 Tumbling 1pm-3pm Beg. Silver Fabrication 6-9pm	21 Adv. Silver Fabrication 6-9pm Casting 6-9pmx	22	23
24 Memorial Dale Sworthout	25 Open House 11am- 9pm	26 Lapidary 1-3pm 6:30-8:30 Slab saw 1:30-3:30 Beg. Silver Fabrication 6-9pm	27 Tumbling 1pm-3pm	28 Adv. Silver Fabrication 6-9pm Casting 6-9pmx	29	30

CFMS & AFMS Shows, 2022

Covid is still not over! Please check to be sure the show is happening.

2022 Shows**April 1-3, 2022, Vista CA**

Vista Gem and Mineral Society
Antique Gas and Steam Engine Museum, 2040 N. Santa Fe Ave., Contact: info@vistarocks.org
Website: <https://vistarocks.org>

April 9-10, 2022 – Mariposa

Mariposa Gem and Mineral Club
Mariposa County Fairgrounds, 5005 Fairgrounds Road,
Contact: mgmc@sti.net
Website: <http://mariposagemclub.org>

April 9-10, 2022, Thousand Oaks, CA

Canejo Gem and Mineral Club Borchard Park, 190 N. Reino Rd. Thousand Oaks, CA
Contact: gguttman8@gmail.com Website: <https://cgamc.org>

April 16, 2022 – Lake Elsinore, CA

Lake Elsinore Gem & Mineral Society
32097 Corydon Rd., Lake Elsinore, CA 92530
Contact: 1 (909) 208-6956, berylman50@aol.com

April 23-24, 2022 – Santa Cruz, CA

Santa Cruz Mineral and Gem Society
Santa Cruz Civic Auditorium, 307 Church St, Santa Cruz,
Contact: scuzgms@gmail.com
Website: <https://www.scrockngem.org>

April 30 – May 1, 2022 – Anaheim, CA

Searchers Gem & Mineral Society
Website: <https://searchersrocks.org>

May 6-7-8, 2022 – Lancaster, CA

CFMS Gems, Minerals, Fossils & Jewelry Show
Antelope Valley Fairgrounds, 2551 W Avenue H, Lancaster, CA 93536 Contact: Bob Backus (661) 526-3564, email: lbackus@aol.com; Susan Chaisson-Walblom (661) 406-0143, email: slchaisson@yahoo.com

May 6-7, 2022 – Yucaipa, CA

Yucaipa Valley Gem and Mineral Society
Yucaipa Blvd and Adams Street, Yucaipa CA 92399
Contact: (909) 794-0731
Website: <http://yvgms.org>

May 7-8, 2022 – Jackson, CA

Amador County Gem & Mineral Society
Kennedy Mine Gem & Craft Show, 12594 Kennedy Mine Rd., Jackson, CA 95642
Contact: (916) 698-9853
Website: <http://www.amadorgemandmineral.or>

May 6-7-8, 2022 – Lancaster, CA

CFMS Gems, Minerals, Fossils & Jewelry Show
Antelope Valley Fairgrounds, 2551 W Avenue H, Lancaster, CA 93536 Contact: Bob Backus (661) 526-3564, email: lbackus@aol.com; Susan Chaisson-Walblom (661) 406-0143, email: slchaisson@yahoo.com

May 6-7, 2022 – Yucaipa, CA

Yucaipa Valley Gem and Mineral Society
Yucaipa Blvd and Adams Street, Yucaipa CA 92399
Contact: (909) 794-0731
Website: <http://yvgms.org>

May 7-8, 2022 – Jackson, CA

Amador County Gem & Mineral Society
Kennedy Mine Gem & Craft Show, 12594 Kennedy Mine Rd., Jackson, CA 95642
Hours: Saturday 10 AM – 5 PM, Sunday 10 AM – 4 PM
Contact: (916) 698-9853
Website: <http://www.amadorgemandmineral.or>

June 11-12, 2022 —Escondido, CA

Palomar Gem and Mineral Club
California Center for the Arts,
340 N. Escondido, Contact: (425) 281-6218, tonifloyd41615@gmail.com Website: <http://palomargem.org>

July 16-17, 2022 – Culver City, CA

Culver City Gem & Mineral Society
Veterans Memorial Aud., 4117 Overland Ave., Culver City, Contact: BradSmithJewelry@gmail.com
Website: <http://CulverCityRocks.org/fiesta.htm>

August 20-21, 2022 – Arcadia, CA

Pasadena Lapidary Society, Arcadia Masonic Center, 50 W. Duarte Rd., Arcadia Contact: Ellen Ferrell 1-727-512-0381
Email: ellenbf2007@aol.com
Website: <https://www.pasadenalapidary.org>

September 10-11, 2022, Reno, NV

The Reno Gem & Mineral Society, Inc.
Reno Convention Center, 4390 S. Virginia, Reno, NV 89502 Contact: sailondan55@aol.com
Website: <http://www.renogms.org>

October 13-16 AFMS New Orleans, LA Gem & Mineral Society of LA. Location TBA.



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Volunteer Page

A new feature in the *Conglomerate*, this space will feature those members who have volunteered their time to help RGMS function in a number of different and valuable ways. Please thank them for their service if you see them at the Rock Building or at the meeting. You will notice that some members serve in more than one capacity—for example, Steve Norman has 3 jobs—count ‘em. A number of others are doing 2. Think you might find time to do just one job? There are several available.

Used Equip, Sale Coord.	George Forbes
Gen. Mtg. Guest Greeter	Joanne Sworthout
Gen. Mtg Door Prizes	Denise Sizemore,
Educational Outreach	Steve Norman
Future Rockhounds Advisor	Steve Norman
Silent Auction	Available
JPOG Auction	Available
Facility Expansion	Patrick Davis

Instructors

<i>Bead weaving:</i>	Sue Webb
Casting:	Stuart Ellis
Jewelry 101 & Cold Connections	Robyn Howard
Lapidary	Barbara Hartman Julie Hilsabeck
Lost Wax Carving	Tim Streeper
Mineral ID	Webb Varnum
Adv. <i>Silver</i> Fabrication	Jill Atkins Al Bolshazy
Beg. <i>Silver</i> Fabrication	Stuart Ellis
Slab saw	Patrick Davis
Stabilizing	Adam Sousa
Tumbling	Janet & Albie Longueira
<i>Wire Art</i>	Available