

JANUARY-FEBRUARY, 2025

NEWSLETTER OF THE

SOUTH CENTRAL FEDERATION

Of Mineral Societies



Member of: The American Federation of Mineral Societies



INSIDE THIS ISSUE

1. Front Cover
2. Table of Contents
3. SCFMS Information
4. President's Message
5. This and That / 2024 SCFMS Website Contest Results
6. SCFMS Minutes of the 80th Annual Meeting
7. Meeting Minutes Continued
8. Meeting Minutes Continued
9. Meeting Minutes Continued
10. AFMS Code of Ethics / AFMS Land Use Policy
11. Introduction
12. Field Trip Safety Suggestion / Geology Lab for Kids
13. Geology Lab for Kids Cont.
14. Semi-precious Gems
15. Semi-precious Gems Cont.
16. Semi-precious Gems Cont.
17. Bench Tips by Brad Smith
18. SCFMS Shows/Thank You

SOUTH CENTRAL FEDERATION OF MINERAL SOCIETIES, INC.

2025 SCFMS OFFICERS

President: Don Shurtz

Executive V-P: Sigrid Stewart

Secretary: Vacant

Treasurer: Henry Rojas

Web Master: Don Shurtz

Exec. Secretary: Susan Burch

**AFMS Endowment Fund Raffle
for SCFMS: Walt Beneze**

**SCFMS Endowment Fund
Treasurer: Walt Beneze**

**Nominating Committee –
Ron Carman**

Past President: Roger Burford

**For more information or to send in-
formation to the SCFMS or an
officer, please email:**

scfmsinformation@gmail.com



PURPOSE

*To promote popular interest and education in the various earth sciences, in particular those hobbies dealing with the art of lapidaries and the science of minerals, fossils, as well as their associated fields.

*To cooperate with educational and scientific institutions or other groups engaged in increasing knowledge in the earth sciences.

*To cooperate with or become members of similar Federations in the United States and elsewhere.

*To assist in the formation of earth sciences societies in localities where public interest justifies their formation.

**E-MAIL ADDRESS
CORRECTION AND CHANGES**

It is each members responsibility to send your email address corrections to the SCFMS Editor:

Susan Burch,
scfmseditor@yahoo.com

**NEWSLETTER PUBLISHED
BIMONTHLY**

DUPLICATION

In most instances material in this newsletter may be duplicated for non-commercial purposes providing full credit is given. There are exceptions, please do not assume permissions. For Commercial use, the individual author(s) must be contacted for their approval.

**A NOTE FROM
—THE EDITOR—**

**THE FINAL
DEADLINE, ETC.**



For each newsletter the deadline is the 25th of the month prior to scheduled publication. February-April-June-August-October-December all provide the deadline for the following bi-monthly issue. Although, the Editor may chose to adjust the deadline due to circumstances.

As a reminder! Shop hints and tips that are used in this newsletter have not been evaluated for safety or reliability by myself. Please use caution and safety when trying out any new idea. Please, if you have something urgent, send me a text letting me know, but send the newsletter content via email.

ANNUAL SHOW 2025

TBD

ANNUAL MEETING

TBD

SCFMS WEB-SITE:
WWW.SCFMS.NET

The SCFMS is a member of the American Federation of Mineral Societies. amfed.org

NEWSLETTER EDITOR/BEAC:

Susan Burch
scfmseditor@yahoo.com





The 80th Annual SCFMS Convention

In early November, I was convinced the SCFMS Annual Meeting was going to be a total disaster. The number of Delegate Forms received was less than 10. Many Officer and Committee Reports were missing, and only a few people had signed up for the Editor/Webmaster Breakfast, the Awards Banquet, and only one person for the Field Trip to the Perot Museum. The person who signed up for the Field Trip was me, and I have over 6,000 hours of volunteer time at the Perot, mostly in the Gem and Mineral and the Dinosaur Hall. I signed up only to help show the people the Museum, and to help the Docents with the hall tours. With only one person signed up for the Field Trip, it was a total bust – it was canceled as we had not reached the minimum 15 people required for the discounted rate. Overall, I had this sinking feeling that the Annual Meeting and the other Convention Activities were going to be total failures.

On the day of the convention, it was a pleasure to recognize JC Moore, the AFMS President, and his wife, Donna Moore, the AFMS Secretary, for all of our activities. The morning started with the Editor, Author, and Webmaster Breakfast. It certainly wasn't the room-filling type of meeting that I remember from Houston years ago, but at least a few people attended. The SCFMS BEAC, Susan Burch, announced the winners of the SCFMS Editor and Author Contest. Plaques and Certificates were awarded, but most were picked up by a representative rather than the actual winner. Like the AFMS Convention earlier this year, there were no Website Contest winners to be announced – our new fixed schedule delays all 2024 awards until 2025.

Next on the agenda was the 80th Annual SCFMS meeting. The surprising news was that we ran out of table space and chairs before the meeting started. We were able to shuffle the tables around a bit and found some chairs to fill up the room. We had the majority of the SCFMS clubs and officers represented either in person or by a delegate. There was no problem obtaining a quorum for the meeting to be official. Much of the first half was taken up with the roll call of the clubs/societies and approval of the Officer and Com-

mittee Reports. The most pressing item of the convention was to pass a budget for 2025. The budget was easily passed. The current officers are in the middle of a two-year term, so no elections were required at this Convention. The rest of the meeting was routine business and lively discussions of two basic topics. First was a discussion of whether we should move to an all-electronic meeting or continue with the present

live attendance format. No resolution was reached, but an informal (non-binding) poll of those in attendance showed a slight preference to continue with the current (live attendance) format. A side topic to the meeting discussions was the need to support and promote Competitive Case Competition. The SCFMS had exactly zero Competitive Cases entered this year. To move to the AFMS Competitive Case Competition, a competitor needs to earn points at regional federation competitions. The discussion evolved into how to increase the number of people interested in the Competitive Case Competition and how to get display cases for the competitions. The other hot topic was an active discussion was whether District Vice Presidents (VPs) should be elected for their position only by members of the District or the existing means - the entire SCFMS. The discussion also included the possibility of having the District VPs being one of the Presidents of a society/club in the district and the position moving from club to club on a set schedule. The end result of this was a committee to look into the process of electing District VPs. Sigrid Stewart will chair the committee with Joanne Cash, Janice Bowen, and Ted Wilson as members.

The final item for the 2024 Convention was the Awards Banquet. Like the Breakfast with the Editors and Webmasters, the attendance was disappointing. However, we did get to honor our 2024 SCFMS Scholarship Honoree, Dr. Ron Tykoski. Dr. Tykoski is the Vice President of Science and Curator of Vertebrate Paleontology at the Perot Museum of Nature and Science. He worked with his associates from the University of Texas to select two scholarship winners of \$4,000.00 each. It was a pleasure to have Dr. Tykoski and his wife join us at the Awards Banquet.

I thank all those who joined us for the Convention activities and making the Annual Meeting a success. I hope we can have more clubs join us at the next SCFMS Convention. We are still looking for a club to host the 2025 Convention. Keep in mind that the SCFMS Budget now has \$300.00 available for a host club to help defer costs in hosting a convention. Please let me know if your club/society has even the slightest interest.



*Don Shurtz,
SCFMS President*

**SOUTH CENTRAL FEDERATION OF MINERAL SOCIETIES
MINUTES OF THE 80TH ANNUAL MEETING**



Minutes of the 80th Annual Meeting of the South Central Federation of Mineral Societies, November 23, 2024. The Meeting was hosted by the Dallas Gem and Mineral Society at the Mesquite Convention Center.

CALL TO ORDER, INVOCATIONS, AND INTRODUCTIONS:

The meeting was called to order by Don Shurtz, President, at 1:07 PM. Don welcomed all directors, delegates, and non-delegates to our annual meeting. Don thanked the Dallas Gem and Mineral Society for hosting the SCFMS Convention activities, including the Annual Meeting.

Don asked for a moment of silence to honor Liz Burford, a past SCFMS Secretary, numerous other positions, and the SCFMS Executive Secretary at the time of her passing.

Don welcomed the AFMS President, J.C. Moore, and his wife, the AFMS Secretary, Donna Moore to the meeting. We also recognized Ron Carman, twice a past AFMS President. Don also recognized Ron Carman and Walt Beneze, past SCFMS Presidents.

The invocation was given by Walt Beneze.

Don: Explain that plans to have a Zoom Link for the meeting were canceled at the last minute as the person who was going to arrange the link and set up the meeting had to cancel due to illness

Ron Carman was introduced as the Parliamentarian for this meeting.

ROLL CALL OF MEMBER SOCIETIES:

ArkLa Tex Gem and Mineral Society (GMS) – Laura MacWilliams, President. PRESENT

Arlington Gem and Minera Club (GMC) – Rick Allen, President, represented by Delbert Speed. PRESENT

Austin GMS – John Connors, President. PRESENT

Baton Rouge GMS –Anthony Rouchon, President. PRESENT

Big Spring Prospector Club – Barbara Carter, President. NOT PRESENT

Central Texas GMS – Linda Walker, President. NOT PRESENT

CERA Gem, Mineral, & Glass Society – Carole Jean Wright, President. PRESENT

Chihuahuan Desert GMS – Judy Brueske, President. NOT PRESENT

Clear Lake GMS – Cynthia McGowen, President, represented by Steve Blyskal. PRESENT

Clear Lake GMS, Cynthia McGowen President, represented by Steve Blyskal. PRESENT

Dallas GMS – Sean McCloskey, President. PRESENT

DeRidder GMS – Tricia Cruz President (Betty Gosswehr primary contact). NOT PRESENT

East Texas GMS – Jerry Sudderth President and Rick Walker Vice President. PRESENT.

Fort Worth GMS –Janice (Craddock) Bowden President. PRESENT

Fredericksburg GMS – Joe Edstrom President (Jackie Chude primary contact). NOT PRESENT

Gem, Mineral, and Lapidary Society of Central Louisiana –J. David Cope primary contact. NOT PRESENT

GMLS of Louisiana – Nathaniel Haley President. NOT PRESENT

Geological Society of San Antonio – Larry L. Tillick President. NOT PRESENT

Golden Spread GMS – Andrew Amstut President,. NOT PRESENT

Gulf Coast GMS – Russell Wheeler President, represented by Henry Rojas, Treasurer. PRESENT

Hi-Plains GMS – Alex Kingston, President. NOT PRESENT

Hot Springs Geology Club – Dr. George Maxey President and Ray Lynch, Secretary. PRESENT

Houston GMS – Logan Wilcox, President, represented by Steve Blyskal. PRESENT

Lubbock GMS – Greg Roberts, President, represented by Walter Beneze. PRESENT

Midland GMS – Linda Johnson, President. NOT PRESENT

Continued from Page 6

Northeast Louisiana GMS – Jennifer Norris, President.
NOT PRESENT

Paleontological Society of Austin – Jennifer Aziz, President.
NOT PRESENT

Pleasant Oaks GMC of Dallas – Joe Vulk, President.
PRESENT

Rolling Rock Club – Walter Beneze, President. PRESENT

Southwest GMS – Joann Socash, President, PRESENT

Spring River Gem & Mineral Club – David Thomas, President. PRESENT

Texoma Rockhounds Inc. – Kathy Olivas, President.
NOT PRESENT

Tri-City GMS – David Farhie, President. PRESENT

Waco GMS – Bob Boyd, President. PRESENT

Williamson County GMS – Jo Ann Tooley. President.
PRESENT

ROLL CALL OF THE OFFICERS AND COMMITTEE CHAIRS:

President, Scholarship, Webmaster, Web Site Contest, Directory, Don Shurtz. PRESENT

Executive Vice President, Budget Committee, Sigrid Stewart. PRESENT

Secretary, - Vacant, Amy Vulk Acting Secretary for the meeting. PRESENT

Executive Secretary, BEAC, Newsletter Editor, Susan Burch. PRESENT

Treasurer, Budget – Henry Rojas. PRESENT

Past President – Roger Burford. NOT PRESENT

District I – Eddie Harmon, represented by Janice Bowden. PRESENT

District II – Vacant

District III – Wendy Crook-Abel. NOT PRESENT

District IV – Ron Carman. PRESENT

District V – Vacant

District VI – Betty Gossewehr. NOT PRESENT

District VII – Ray Lynch. PRESENT

District VIII – Del Glasner. PRESENT

Conservation & Legislation – Terrell “Terry” Proctor. NOT PRESENT

Endowment Fund & Treasurer – Walt Beneze. PRESENT

Uniform Rules – Represented by Ron Carman. PRESENT

Past President, Long Range Planning, Roger Burford, NOT PRESENT

Committees with Vacant Chairs: AFMS Endowment Fund Raffle, Auditing Committee.

Boundaries, Commemorative Stamps, Constitution and By-Laws, Education and All-American Award, Golden Spark Plug Award, Historian, Juniors Program, Long Range Planning, Nominating Committee, Program Library & Competition, Public Relations, Rockhound of the Year, Show Coordinator, Ways and Means, Uniform Rules

QUORUM:

The meeting Parliamentarian, Ron Carman declared a quorum was in attendance.

OLD BUSINESS:

Minutes of the 2023: The Minutes of the November SCFMS Annual Meeting were published in the November-December SCFMS Newsletter and a copy is available on the table. Don asked if there were any changes or additions? No changes or additions were brought forward. Susan Burch made a motion to accept the 2023 Minutes. Delbert Speed seconded the motion. The motion was passed.

NEW BUSINESS:

OFFICER REPORTS:

President’s Report – Don Shurtz is present. The report is in the Packet.

John Connors made a motion to accept the report. Laura McWilliams seconded the motion. The motion passed.

Executive Vice President – Sigrid Stewart is present. No Report.

Treasurer’s Report – Henry Rojas is present. The report is in the Packet. Ron Carman made a motion to accept the report. John Connors seconded the motion. The motion passed.

Past President’s Report – Roger Burford, was not present due to illness. No report



Continued from Page 7

Executive Secretary's Report – Susan Burch is present. The report is on the Table. Bob Boyd made a motion to accept the report. Jerry Sudderth seconded the motion. The motion passed.

District I Vice President (Northeast Texas) – Eddie Harmon was not present. The report is in the Packet. Delbert Speed made a motion to accept the report. Bob Boyd seconded the motion. The motion passed.

District II Vice President (Southeast Texas). Vacant, No Report

District III Vice President (South Texas). Wendy Crook-Abel was not present. No Report

District IV Vice President (Central Texas)– Ron Carman is present. No Report

District V Vice President (West Texas)– Vacant, No Report

District VI Vice President (Rollin' Rock Club – Betty Gosewehr was not present. The report is in the Packet. Jo Tooley made a motion to accept the report. Jerry Sudderth seconded the motion. The motion passed.

District VII Vice President (Arkansas) – Raymond Lynch is present. The report is in the Packet. Janice Bowen made a motion to accept the report. Dr. George Maxie seconded the motion. The motion passed.

District VIII Vice President (Louisiana) – Del Glasner is present. Don Shurtz commented on the thoroughness of this report and hopes all the District VPs take a look at this report. It provides the Status of each club in the District and goes on to provide recommendations. Don recommends that it become the standard format for District VP reports. The report is in the Packet. Ron Carman made a motion to accept the report. Laura McWilliams seconded the motion. The motion passed.

COMMITTEE REPORTS:

Budget Committee - Chairperson Sigrid Stewart, Chair is present and Committee Member Henry Rojas, Member is also present. The report is in the Packet. Note that this budget report is the status of the 2024 financial dealings. The Budget for 2025 will be addressed later in the meeting. Bob Boyd made a motion to accept the report. Susan Burch seconded the motion. The motion passed.

Bulletin Editor Advisory Committee - Chairperson Susan Burch is present. The report is on the table. Jo Tooley made a motion to accept the report. Delbert Speed seconded the motion. The motion passed.

Newsletter Editor Committee - Chairperson Susan Burch is present. The report is on the table. Jo Tooley made a motion to accept the report. Jerry Sudderth seconded the motion. The motion passed.

SCFMS Scholarship Committee - chairperson Don Shurtz is present. The report is in the Packet. Joe Vulk made a motion to accept the report. Bob Boyd seconded the motion. The motion passed.

Uniform Rules Committee – Committee Member Ron Carman is present. The report is in the Packet. Jo Tooley made a motion to accept the report. John Connors seconded the motion. The motion passed.

Website Committee - Chairperson Don Shurtz is present. The report is in the Packet. Jo Tooley made a motion to accept the report. Janice Bowen seconded the motion. The motion passed.

Website Contest - Chairperson Don Shurtz is present. The report is in the Packet. Jo Tooley made a motion to accept the report. Ron Carman seconded the motion. The motion passed.

Endowment Fund Committee – Walter Beneze is present. A revised report is on the table. Jerry Sudderth made a motion to accept the report. Bob Boyd seconded the motion. The motion passed.

BUDGET:

The Proposed Budget for FY2025 is in the Packet with the Budget Committee Report. Treasurer Henry Rojas made a few comments about the development of the budget. The total budget for 2025 is \$22,336.00. The details are in the Budget sheet. Delbert Speed made a motion to accept the FY2025 Budget. Jerry Sudderth seconded the motion. The motion passed.

Don Shurtz noted that we need to update the SCFMS members who are authorized to sign checks and make withdrawals from the account. Those currently authorized are Henry Rojas, Don Shurtz, and Kimberly Brannon. Don indicated that he needed a motion that reads as follows:

“The following individuals, members of the South Central Federation of Mineral Societies (SCFMS), Executive Vice President Sigrid Stewart, Executive Secretary Susan Burch, and Treasurer Henry Rojas, are hereby approved to sign checks issued by the SCFMS, make withdrawals from the SCFMS account, and have electronic access to any SCFMS accounts.”



Continued from Page 8

Janice Bowen made a motion to accept the wording above. Joe Vulk seconded the motion. The motion passed.

The endowment fund also needed approval for those individuals authorized to write checks and make withdrawals from the SCFMS Endowment Fund. After discussion, Delbert Speed made a motion that reads as follows:

“SCFMS Endowment Fund Committee Chair Walter Beneze, SCFMS Executive Secretary Susan Burch, and SCFMS Treasurer Henry Rojas are designated as individuals authorized to write checks and make withdrawals from the SCFMS Endowment Fund”.

Bob Boyd seconded the motion. The motion Passed.

APPOINTED OFFICERS:

SCFMS President Don Shurtz, following the guidance of the Constitution and By-Laws, appointed Susan Burch, our current Newsletter Editor and Bulletin Editor Advisory Chair as the SCFMS Executive Secretary, Officer. A motion is needed to approve the appointment of Susan Burch as the SCFMS Executive Secretary. Jerry Sudderth made the motion to approve the appointment of Susan Burch as the SCFMS Executive Secretary. Ron Carman seconded the motion. The motion passed

FUTURE SHOWS:

Only one club has expressed interest in hosting a show for 2025, the Austin Gem and Mineral Society will be hosting their 75th annual show, but after review, decided that the area was just too expensive for delegates to attend the show. At the same time as their show, Austin is also hosting a Formula 1 car race and a major collegiate football game that will drive hotel prices to more than \$300.00 per night. However, they did indicate that with the support of some of their sponsors, they may be able to hold the convention in one of the Austin suburbs where more reasonable hotel rates are expected. This remains an open discussion.

Don asked if any other clubs would offer to host next year's annual convention. No clubs responded.

Don also indicated that the SCFMS could hold its meeting electronically. We should keep in mind that we have an obligation to support the Competitive Display Case competition. However, finding a show to host the display case competition should be much easier – the budget impact would be significantly less (Breakfast with the Editors and Webmasters, the Annual Meeting, and the Awards Banquet would not be required) and would save the SCFMS significant travel expenditures. We also have an obligation every 7 years to host the AFMS Convention. Hosting the AFMS Convention is an honor, and does not

have to include the Regional Federation show. A lively discussion on the topic of having our convention in person and electronically. Eventually, the discussion shifted to how to increase the number of competitive cases and where cases can be obtained. After about 15 minutes of discussion, an informal poll was taken to determine a preference for an in-person convention or an electronic convention. The poll was non-binding but showed a slight preference for an in-person convention.

SCFMS OFFICER ELECTIONS:

Our Officers now serve for 2 years and are just completing their first year. Officer elections are not required at this time.

ELECTION OF DISTRICT VICE PRESIDENTS (DISTRICT VPs):

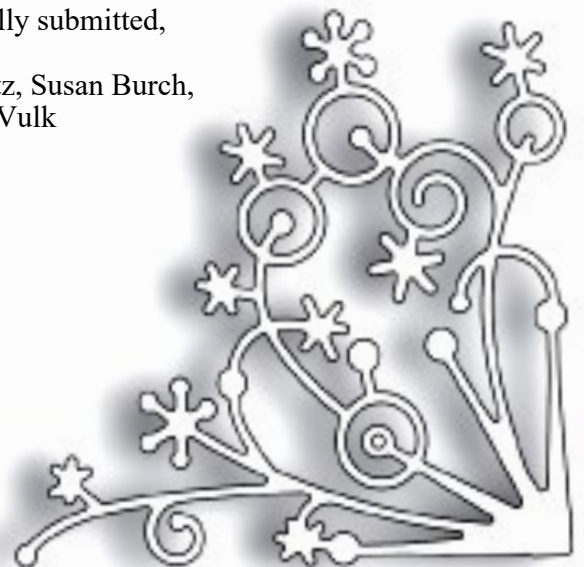
The District VPs represent a specific area (e.g., West Texas, Arkansas, etc.) yet are elected by the entire membership of the SCFMS Board of Directors. It would be better if the District VPs were elected by the Club Directors (Presidents) of the District. Another possibility is that the District VPs could be a position held by one of the Club Presidents within the District and moved from Club to Club in a set sequence. Either change suggested above would require a change to the Constitution and By-Laws. The options for electing our District VPs also resulted in a lively discussion. A committee was formed to review the election options for District VPs. Sigrid Stewart will chair the committee with Joanne Cash, Janice Bowen, and Ted Wilson as members.

ADJOURNMENT:

Don inquired if there were any additional New Business items from the floor. There were no responses. Don Shurtz adjourned the meeting at 2:32 PM.

Respectfully submitted,

Don Shurtz, Susan Burch,
and Amy Vulk





AFMS CODE OF ETHICS

I will respect both private and public property and will do no collecting on privately owned land without the owner's permission.

I will keep informed on all laws, regulations or rules governing collecting on public lands and will observe them.

I will, to the best of my ability, ascertain the boundary lines of property on which I plan to collect.

I will use no firearms or blasting material in collecting areas.

I will cause no willful damage to property of any kind—fences, signs, buildings.

I will leave all gates as found.

I will build fires in designated or safe places only and will be certain they are completely extinguished before leaving the area.

I will discard no burning material—matches, cigarettes, etc.

I will fill all excavation holes, which may be dangerous to livestock.

I will not contaminate wells, creeks or other water supply.

I will cause no willful damage to collecting material and will take home only what I can reasonably use.

I will practice conservation and undertake to utilize fully and well the materials I have collected and will recycle my surplus for the pleasure and benefit of others.

I will support the rockhound project H.E.L.P. (Help Eliminate Litter Please) and will leave all collecting areas devoid of litter, regardless of how found.

I will cooperate with field trip leaders and those in designated authority in all collecting areas.

I will report to my club or Federation officers, Bureau of Land Management, or other authorities, any deposit of petrified wood or other materials on public lands which should be protected for the enjoyment of future generations for public educational and scientific purposes.

I will appreciate and protect our heritage of natural resources.

I will observe the "Golden Rule," will use "Good Outdoor Manners" and will at all times conduct myself in a manner which will add to the stature and public image of rockhounds everywhere.

AFMS LAND USE POLICY



1. Adherence to the AFMS Code of Ethics assures compliance with most statutes and regulations governing collecting on public lands and encourages respect for private property rights and the environment. Clubs are urged to read the AFMS Code of Ethics in at least one meeting every year, to publish the Code frequently in the club newsletter, and to compel compliance on club field trips.

2. Individuals and clubs are urged to write their elected representatives and land use management agency supervisors regarding issues of rule making, legislation and enforcement affecting field collecting of minerals and fossils.

3. Individuals and clubs are urged to join and support activities of the American Lands Access Association (ALAA), a sister organization with responsibility for advancing the interests of earth science amateurs with legislatures and land use management agencies.

4. The AFMS will receive a report from ALAA at its annual meeting.

5. The AFMS endorses the principle of multiple use of public lands as a guarantee of continuing recreational opportunities.

6. Wilderness and monument designations are inconsistent with the principle of multiple use. In view of the vast amount of public land already designated as wilderness and monuments, future such designations should be minimal, taking into account the increased demand for recreational opportunities, including rockhounding, created by a growing population.

7. In furtherance of the principle of multiple use, the AFMS believes that laws, regulations and rules established by relevant governmental authorities should be designed to allow freest possible access to all public lands, coupled with minimal restrictions on the recreational collection of minerals, fossils, gemstone materials and other naturally occurring materials.

8. A right to collect minerals and fossils on public lands should be protected by statute.

9. The AFMS urges its members to work with any or all government authorities to achieve a good working relationship in order to improve the public image of recreational collectors.



INTRODUCTION

Erin Irwin, SCFMS Junior Chairperson

My name is Erin Irwin and I am the new South Central Federation of Mineral Societies Junior Chairperson. I live in West Texas with my husband, Daniel, our 14-year-old daughter, Libby, and 15-year-old son, Micaden Steele. I also have an adult son who is 30, Alex Atkinson.

I've been the Juniors Coordinator for the Lubbock Gem and Mineral Society for two years. I recently also accepted the position of secretary and hospitality chair for our club. To say I love our club and all that it encompasses is putting it lightly.

I came about the Juniors Coordinator position by accident. I have homeschooled my 15-year-old for about five years now and I currently also run a homeschool social group and while planning activities, I contacted the Lubbock Gem and Mineral Society looking for educational opportunities for my homeschoolers. I was told there wasn't currently a Juniors Program and the next thing I knew I was agreeing to be the Juniors Coordinator! I knew nothing about rocks other than picking up the pretty ones when we were out and about. Thank goodness I could at least organize and plan, and I have so many good members willing to pass along some gem and mineral knowledge to me. I have jumped in with both feet and am having a blast!

I feel so strongly now about our club and the Juniors Program and love everything about it. I think so much of the time I am more excited than the kids during show and tell. I have the best time planning activities for these kids.

In the two years we have had our program we have had two of our kids earn their first six badges along with their official Rockhound status. Most of our juniors have earned several other badges as well. My son has also completed his 20 hours of volunteer time. He has completed so many more hours but in all fairness, he doesn't get to count everything he does for the club since he is with me so much of the time.

The goals in my group right now, beyond teaching the kids and helping them earn their badges are finding ways to retain the kids over time and working to develop a successful Junior Leadership program for the kids to transition to our adult group. I am always looking for ways to reward these kids and motivate them to continue learning.

I am so thrilled to be able to serve our community in this capacity and I am so appreciative of the opportunity.

Photo 1: At right, Daniel and Erin Irwin



Photo 2: At left, the Irwin's son Micaden Steele, who is receiving an award for completing 20 volunteer hours



Photo 3: At right, Libby Irwin.

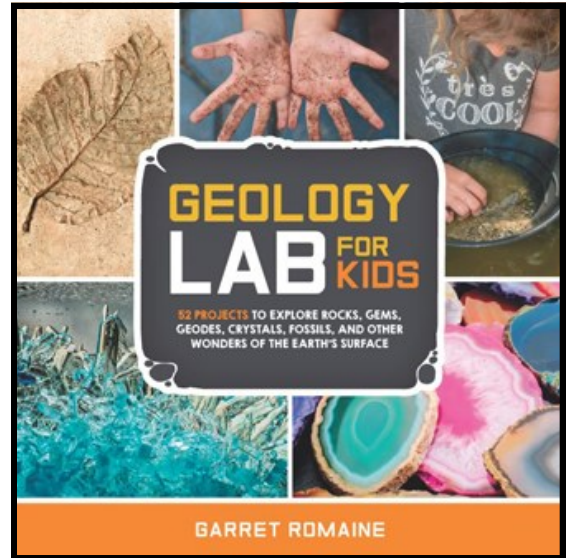


Photo 4: At left, the Irwin's oldest son, Alex Atkinson.

FIELD TRIP SAFETY SUGGESTION

Erin Irwin, SCFMS Junior Chairperson

On October 26th we had a field trip to Fluvanna, TX to look for fossils. I planned for Micaden to change into his red Junior Rockhound shirt. However, we both forgot and he was in tan shorts and a black shirt. After the field trip, I realized when looking at the photos, he blended in and was almost invisible in the photos. During the actual field trip, I knew that we did have to look for him when he was on the higher ledges finding fossils. In the pictures I included, I cropped and zoomed in on him so that it is clear what I am referencing. In the future, I will be making sure my kids have bright-colored shirts on at least and I will be reminding my juniors to dress more colorful to make them easier to find in nature.



If you wish to have the full experience, please, purchase a copy for yourself. Reprinted with permission from Author, Garret Romaine. Please, include the link below.

<https://www.amazon.com/Garret-Romaine/e/B0037187T8>



Watch sprouts break out of small enclosures. This shows how plants can help break down rocks.

MATERIALS

- 4 tablespoons (55 g) of mung bean seeds for sprouting—mung beans are a good, inexpensive choice, and they're edible
- Mixing glass
- Water
- Small saucer to act as a lid
- Big rock, about 1/2 pound (225 g)



Safety Tips

— Be very careful when mixing rocks and glass.



PROTOCOL

STEP 1: Place your seeds in the mixing glass, rinse twice, then add 1 1/2 cups (335 ml) of water. Let soak overnight.

Continued on Page 13

Continued from Page 12



STEP 2: The next day, pour off the water and rinse the seeds. Don't let the seeds get slimy or stay too wet, but don't let them go thirsty for too long either.

STEP 3: When the seeds are near the top of the container, place the small saucer and the rock on top of them.

STEP 4: Monitor the seeds daily.

STEP 5: When it looks like all the seeds have sprouted, but they are still growing quickly,

you can rinse them and toss out the seed husks and any seeds that didn't sprout. These tend to go bad quickly and can smell if they start rotting.

STEP 6: Keep rinsing twice a day as the sprouts grow.



THE SCIENCE BEHIND THE FUN

This experiment shows the force of a growing plant. By expanding and getting bigger, the seeds have the power to pop the lid off a container. Their ability to "push" is slow and steady, and they will keep going if they can. The other way that plants can break apart rocks is when their roots penetrate deep into cracks. The same general idea applies: the tip of the root is trying to find water or nutrients it can tap into, so it pushes and pushes until it comes up against something it cannot penetrate. Then it will try to go around, over, under, or backwards. While the tip of the root is pushing out, the root itself is growing and getting thicker. It won't be as delicate as the tiny tip of the root. The next time you go for a walk on a sidewalk, look at all the different ways the concrete slabs are pushed up or over by tree roots. You might even see cracks in the cement with roots poking up. That concrete never had a chance!



Creative Enrichment

1. What happens if you use an even heavier rock?
2. Do different seeds have different strengths?



SEMI-PRECIOUS GEMS—GARNET AND SPINEL

Prof. Philip R. Kesten, Ph.D.

Got rocks in your pocket? You might, or you might, at least, have a semi-precious gemstone hanging from a chain around your neck or from a bracelet on your wrist... or set into a ring. The gemstones in your jewelry, both precious and semi-precious gemstones, are rocks. Yes, when you see them for sale in a store or on website they are usually faceted and polished, but they are rocks nevertheless. Rocks that you can certainly find for sale as rough stones. In this essay we will take a look at two semi-precious gemstones... garnet and spinel. I could have selected any of the many stones that are considered semi-precious for this essay—amethyst, say, or aquamarine, onyx, or turquoise, for example—but I chose garnet and spinel because... well, because their color and crystal habit make them visually striking. Let us start, then, by taking a glance at a crystal of garnet and a crystal of spinel. Garnets can be found in a variety of colors – green (see Fig. 1a.), for example, and yellow (see Fig. 1b.). But the deep reddish-brown color of the specimen shown in Fig. 1c. is most common. (Which shouldn't, perhaps be a surprise: the word “garnet” comes to us from the fourteenth century, Middle English garnet, meaning “dark red”.) And although garnets are found that exhibit a variety of crystal habits, generally crystals of garnet can be categorized as isometric, that is, having three axes of equal length that are all perpendicular to one another. For garnets, this most often results in the dodecahedral shape, with its twelve, diamond-shaped faces, of the specimen shown in Fig. 1c. Garnet crystals with twenty-four faces (trapezohedrons) and with forty-eight faces (hexoctahedrons) are also found. And variations on these shapes also occur; note, for example, the thin, flat ridges along the edges of the crystal shown in Fig. 1a.

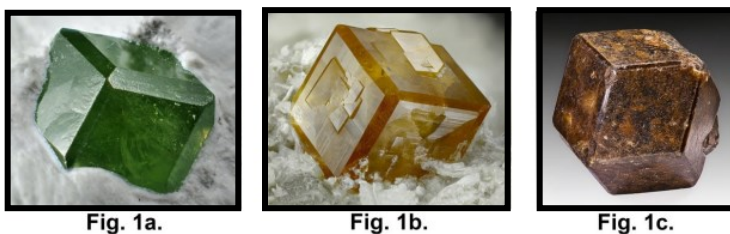


Fig. 1a.

Fig. 1b.

Fig. 1c.

Fig. 1a. A green specimen of garnet.

Fig. 1b. A yellow specimen of garnet.

Fig. 1c. A deep reddish-brown specimen of garnet.

Fig. 1a. <https://www.mindat.org/photo-514019.html>

Fig. 1b. <https://www.mindat.org/photo-206462.html>

Fig. 1c. <https://en.wikipedia.org/wiki/File:Andradite-Mali.jpg>

As is the case for garnet, crystals of spinel can also be found in a wide variety of colors, including green (see Fig. 2a.) and purple (see Fig. 2b.), as well as dark

green, blue, and even colorless. Most common, however—at least for high quality, semi-precious stones that are cut and faceted to be used in jewelry—are red (see Fig. 2c.) and light blue (see Fig. 2d.).



Fig. 2a.

Fig. 2b.

Fig. 2c.

Fig. 2d.

Fig. 2a. A green specimen of spinel.

Fig. 2b. A purple specimen of spinel.

Fig. 2c. A red specimen of spinel.

Fig. 2d. A light blue specimen of spinel.

Fig. 2a. <https://raresource.com/raresource/wp-content/uploads/2020/08/Peridot-Rough-in-Burma1024x796.png>

Fig. 2b. <https://geology.com/gemstones/spinel/crystals-of-spinel.jpg>

Fig. 2c. <https://geology.com/gemstones/spinel/crystals-of-spinel.jpg>

Fig. 2d.

https://i.etsystatic.com/43272707/r/il/8d7939/5023011654/il_794xN.5023011654_6s1w.jpg

Unlike the word “garnet”, “spinel” does not have a clear etymology. Some linguists claim it is derived from the Greek σπίνος (spínos), meaning a sparkling rock. Others trace it back to the Latin word spina, meaning “a thorn”. An octahedral spinel crystal has many, somewhat sharp points, so both of these seem reasonable.

The chemical formula of the molecules that make up garnet is $X_3Al_2(SiO_4)_3$, in which X represents one of a few different elements. Most common is a combination of three iron (Fe) atoms bonded to aluminum (Al) atoms, silicon (Si) atoms, and oxygen atoms; this $Fe_3Al_2(SiO_4)_3$ molecule is found in almandine garnet. The molecules in spinel also contain two aluminum atoms, together with an atom of magnesium (Mg) and oxygen atoms; the chemical formula for a molecule in a spinel crystal is $MgAl_2O_4$. It is the arrangement of the bonding together of the atoms in spinel and garnet that results in the distinctive habits of these two minerals. For example, the symmetry of the $MgAl_2O_4$ molecules in spinel (see Fig. 3.) gives rise to the two four-sided pyramids that, back-to-back, form octahedral spinel crystals.

Fig. 3. The arrangement of the magnesium (Mg) atom, the aluminum (Al) atoms, and the oxygen (O) atoms

Continued from Page 14



that combine to make up the molecules in spinel result in the octahedral habit of these crystals. Fig. 3. Made by PRK

Not surprising, perhaps: the color of a crystal of garnet or spinel is often the result of trace elements mixed together with either the $\text{Fe}_3\text{Al}_2(\text{SiO}_4)_3$ or MgAl_2O_4 molecules. For example, a few chromium atoms mixed in with the MgAl_2O_4 molecules results in red spinel crystals. A bit of iron in the mix produces orange spinel crystals, and a few cobalt atoms produces (the relatively rare) blue spinel. The color of one of these crystals can also result from a slight variation in the chemical makeup of the molecules. The orange garnet known as “spessartine”, for example, comes to be when manganese (Mn) atoms substitute for the iron atoms, resulting in molecules that have the chemical formula $\text{Mn}_3\text{Al}_2(\text{SiO}_4)_3$. And when iron is replaced by calcium (Ca) atoms, the result is grossular (or uvarovite or andradite) garnet ($\text{Ca}_3\text{Al}_2(\text{SiO}_4)_3$); the varieties of garnet can be brown, red, or yellow, but are most often green.

As an aside, it is worth noting that, despite what their classifications suggest, semi-precious stones such as garnet and spinel may not be less costly than the gems classified as “precious”, that is, diamonds, rubies, emeralds, and blue sapphires. Yes, a high-quality diamond, for example, is rather expensive. But while a diamond of modest quality can be purchased for as little as, perhaps, two thousand dollars per carat, a high-quality, one-carat spinel might sell for over nine thousand dollars. So beware of the “semi-precious” versus “precious” distinction! Let us take a look at a faceted and polished, gemstone-quality garnet and spinel. First, for the purpose of making jewelry, both of these stones will be cut into a variety of shapes. Common is the more traditional, “round-cut”, garnet and spinel stones cut into this shape are shown in Fig. 4a. and Fig 4b. Less common shapes, such as the “trilliant-cut” garnet shown in Fig. 4c., and the “pear-cut” spinel shown in Fig. 4d., are often also created. I don’t know about you, but I would be delighted to give to a loved one a piece of jewelry in which any one of these stones had been set!



Fig. 4a.

Fig. 4b.

Fig. 4c.

Fig. 4d.

Fig. 4a. A “round”-cut garnet.
Fig. 4b. A “round”-cut spinel.

Fig. 4c. A “trilliant”-cut garnet.

Fig. 4d. A “pear”-cut spinel.

Fig. 4a. <https://yurgajewelry.com/wp-content/uploads/2023/02/Red-Round-Garnet-800x800.png>

Fig. 4b.

https://i.etsystatic.com/26425541/r/il/e0f6e1/3360118413/il_fullxfull.3360118413_kan9.jpg

Fig. 4c.

<https://www.gemsociety.org/uploads/1920/75/2016/03/ga1447-n.jpg>

Fig. 4d. <https://www.gia.edu/images/polished-spinel.png>

But fair enough... if you are like I am, you are more interested in stones that look like the ones shown in Fig. 1a., Fig. 1b., Fig. 1c, or Fig. 1d. ... or Fig. 2a., Fig. 2b., or Fig. 2c., rather than the faceted gemstones shown in Fig. 4. It is just my opinion, but I say that nature’s hand creates a more appealing stone than human hands! So let us consider rough crystals of garnet and spinel. Certainly, garnet and spinel can be found with regular, symmetric crystal habits (such as the specimens shown above) and any of these would make fine additions to your rock, crystal, and mineral collection. But you might also want to consider other forms of these rocks, such as the red botryoidal (shapeless) garnet shown in Fig. 5a., the green grossular garnet shown in Fig. 5b., or the yellow garnet shown in Fig. 5c. (This yellow garnet is also classified as “grossular”, but with a crystal habit somewhat dissimilar to the specimen of grossular garnet in Fig. 5b.)



Fig. 5a.

Fig. 5b.

Fig. 5c.

Fig. 5a. A red, noncrystalline, botryoidal, garnet.

Fig. 5b. A specimen of green grossular garnet.

Fig. 5c. A yellow garnet crystal.

Fig. 5a. https://cityofgem.com/wp-content/uploads/2021/08/4_Natural-Spessartite-Garnet-RoughGemstones-city-of-gem-Ratnapura-.jpg

Fig. 5b.

<https://prettyrock.com/cdn/shop/products/green-grossular-garnet-10192006-1-1.jpg>

Fig. 5c.

<https://i.pinimg.com/564x/22/62/41/2262417db2015917158010b2f9de7f55.jpg>

You might also want to consider acquiring a cluster of garnet and spinel crystals. Garnets are often found in

Continued on Page 16

Continued from Page 15

clusters—separate crystals that formed in a group. Fig. 6a. shows such a cluster, a cluster of almandine garnets in matrix. Spinel does not form in clusters of this kind, but they can be found as twinned crystals. Crystal twinning occurs when two (or more) adjacent crystals—of the same mineral—become intertwined as they grow. This can occur, for example, when a crystal experiences a change in temperature or pressure as it is forming. Fig. 6b. shows two twinned spinel crystals.



Fig. 6a.



Fig. 6b.

Fig. 6a. A cluster of separate almandine garnet crystals in matrix.

Fig. 6b. Two “twinned” spinel crystals.

Fig. 6a.

<https://assets0.fossilera.com/sp/559118/almandine/garnet-var-almandine.jpg>

Fig. 6b. https://cityofgem.com/wp-content/uploads/2021/08/7_Natural-Spinel-Crystal-Collection-with-Twin-Crystals-city-of-gem-Ratnapura.jpg

Unlike spinel, by the by, garnets are not found as twinned crystals. Indeed, relatively few minerals form in this way. But if you are a fan of the shapes of crystals, you will definitely want to add some specimens of twinned crystal to your collection! Minerals that can be found as twinned crystals include amethyst (see Fig. 7a.), aragonite (see Fig. 7b.), orthoclase feldspar (see Fig. 7c.), and pyrite (see Fig. 7d.).



Fig. 7a.



Fig. 7b.



Fig. 7c.



Fig. 7d.

Fig. 7a. Two twinned amethyst crystals.

Fig. 7b. Two twinned aragonite crystals.

Fig. 7c. Two twinned orthoclase feldspar crystals.

Fig. 7d. Two twinned pyrite crystals.

Fig. 7a. <https://www.mindat.org/photo-489882.htm>

Fig. 7b. <https://www.ebay.com/itm/186752264681>

Fig. 7c.

<https://i.pinimg.com/originals/1f/0d/9f/1f0d9f14b9820686442f1ebc815b099b.jpg>

Fig. 7d. <https://assets2.fossilera.com/sp/252571/pyrite-cubes-spain/708x500%3E/pyrite.jpg>

Both garnet and spinel are relatively hard. Garnet measures between 6.5 to 7.5 on the Mohs hardness scale, and spinel comes in at 8. (The Mohs hardness scale runs from 1 to 10; a stone with a hardness of 1 (talc, for example) is easily scratched, and a stone with a hardness of 10 (diamond, for example) will leave a scratch on any other stone when one is rubbed against the other.) The relative hardness of both garnet and spinel means they are relatively immune to becoming scratched; this makes them fine choices as stones to be set into jewelry. In addition, because garnet is relatively hard, and both less prone to making dust and also not particularly expensive, it is frequently the choice of technicians and others who do blasting work or who operate waterjet cutting machines. (Waterjet cutting machines are sometimes called the “Swiss Army Knives” of the machine world. Using one of these machines, a skilled operator can cut pieces of almost any shape and size from a variety of materials, including stainless steel and other metals, marble, stone, and rubber.) Are you excited to add some specimens of garnet and spinel to your collection? I hope so! These stones can be had in many crystal shapes and many colors—they make a terrific addition to any rock, crystal, and mineral collection.

Prof. Philip R. Kesten, Ph.D., Department of Physics, Santa Clara University

From Breccia, January 2025

ROCK COLLECTING IS EASY

1. You see a rock.
2. You pick it up.
3. You take it home and put it in a box in your basement.

It is rumored that some people take rock collecting a step or two beyond that...

John Weidner

—Mineralogical Society of DC

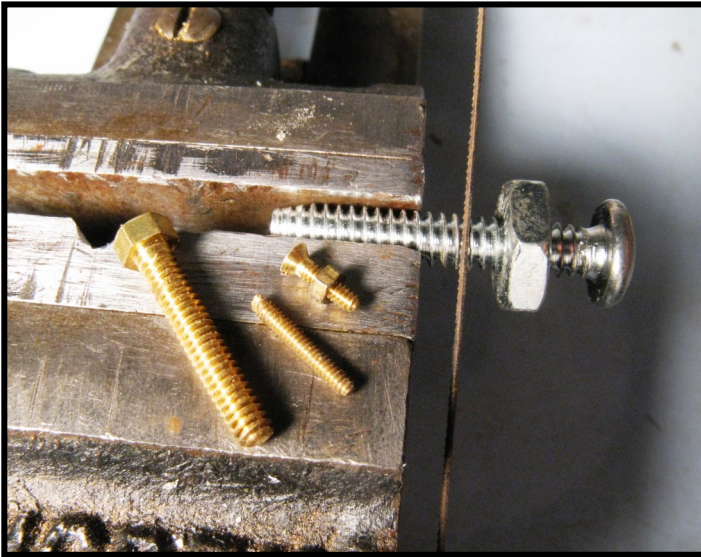


BENCH TIPS BY BRAD SMITH

CUTTING A BOLT

Whenever you have to cut a threaded bolt shorter, it's often difficult to get the nut to thread back onto it. And the smaller the bolt, the more difficult it is to restore any distorted threads. The problem is easily solved with the use of a nut. Here's how I do it.

First, screw a nut onto the bolt before cutting it. Grip the bolt by the threaded section that is to be sawed off. Then saw the bolt to the desired length, taper the end with sandpaper or file, and unscrew the nut from the bolt.



Unscrewing the nut over the freshly cut end of the bolt will straighten out any damage that sawing and filing did to the threads. Gripping the bolt by the piece to be sawed off localizes any crushing damage to the piece that will be thrown away.

DEPTH GAUGE FOR DRILLING

Sometimes you need to drill a number of holes all to the same depth. One quick and easy way to do this is



to wind some tape around the drill bit so that the tape just touches the part surface when the hole is deep enough.

You can set the depth either by measuring from the tip of the drill to the tape or by drilling to the correct depth, leaving the bit in the hole, and wrapping tape around the bit at the surface level.



Note that a little extra tape left free on the end will blow away debris from the drilling.

Making jewelry involves a multitude of skills, intricate hand work, and a lot of problem solving. In this book series find help to:

- Broaden your metalworking skills
- Improve productivity at the bench
- Save money on tools and supplies

See Other Tips in my Smart Solutions for Jewelry Making Problems

<http://amazon.com/dp/B0BQ8YVLTJ>

Happy hammering,
- Brad Smith

BradSmithJewelry@gmail.com

Please, check out more Smart Solutions for Your Jewelry Making Problems

[Amazon.com/author/bradfordsmith](https://www.amazon.com/author/bradfordsmith)



CONTRIBUTIONS**WELCOME!**

SCFMS exists for the benefit of our member clubs and we are all volunteers. Please consider enriching our club by making a photo, drawing, or written contribution to the newsletter about a geology or earth science related topic.

Pick a topic that interests you and give it a go. Please send it me at scfm-seditor@yahoo.com by the 20th of the month prior to the expected publication date and I would be glad to work with you to finalize your item for this newsletter.

Please, be sure to send me your show flyer at least several months in advance so, I can share it in our newsletter.

Susan Burch, Editor

UPCOMING SHOWS 2025

FEBRUARY 15-16,
GEORGETOWN, TX, Williamson County G&MS, San Gabriel Park Community Center

APRIL 5-6—SAN ANTONIO, TEXAS: Annual show; Southwest Gem & Mineral Society - 63rd Annual Fiesta of Gems; Morris Center @ Joe Freeman Coliseum, 475 AT&T Center Parkway Gate E

THANK YOU!



Don Shurtz ♦ Amy Vulk
Erin Irwin ♦ Garret Romaine
Prof. Philip R. Kesten, Ph.D.
Brad Smith

**DEADLINE
FOR THE
MARCH-APRIL, 2025
NEWSLETTER IS
FEBRUARY 25, 2025**