

SEPTEMBER 2018 NEWSLETTER

FOUR CORNERS GEOLOGICAL SOCIETY

SEPTEMBER DINNER MEETING

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SPEAKER: Kirsten Siebach, Rice University

TITLE: *Sedimentary Records from Another World: Exploring Gale Crater Basin with the Curiosity Rover*

DATE: Thursday, September 20th

TIME: 5:30pm Social, 6:00pm Dinner, 6:30pm Talk

LOCATION: Fort Lewis College, Student Union Building, Vallecito Room

COST: \$20/person with RSVP by deadline.
25/person post deadline and/or at the door while food lasts.
\$2/person talk only.
Ten students can attend for free **IF** they contact Dr. Gary Gianniny (gianniny_g@fortlewis.edu) by deadline.

RSVP: By Tuesday, September 18th at noon.
Please RSVP and pay online using this link:
<https://fourcornersgeologicalsociety.org/event/mars-geologic-observations-from-curiosity-rover/>
or RSVP to Kim Gerhardt kim@mydurango.net / 970-375-2700).

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Save the Date!

October 18th @ FLC: Jon Thorson - *Paradox Basin Fluid Flow and Copper Mineralization.*

November 15th or 16th (TBD) @ Farmington. (Scheduled speaker just withdrew. Look for announcement soon on replacement.)

December 13th @ FLC: Speaker TBD. Poster session by graduating FLC Geoscience majors.

January 17th @ FLC: Jay LeBeau. Title TBD.

February 21st @ FLC: John Lorenz: *Structural geology & fracture studies in San Juan Basin*, title TBD.

March 21st Speaker TBD.

April 25th @ FLC: *FLC Geoscience Senior Theses.*

BIOGRAPHY: Kristen Siebach



Kirsten Siebach is an Assistant Professor in the Rice University Department of Earth, Environmental, and Planetary

Sciences. Her work focuses on understanding the history of water interacting with sediments on Mars and early Earth through analysis of sedimentary rock textures and chemistry. She is currently a member of the Science and Operations Teams for the Mars Exploration Rovers and the Mars Science Laboratory. Kirsten completed her PhD in Geology at Caltech with Professor John Grotzinger with a dissertation titled "Formation and

Diagenesis of Sedimentary Rocks in Gale Crater, Mars", and then did postdoctoral research in geochemistry of Martian sediments with Professor Scott McLennan at Stony Brook University. Prior to Caltech, she attended Washington University in St. Louis, where she graduated summa cum laude with a B.A. in Earth & Planetary Science and Chemistry.

She is also actively engaged in promoting education and outreach related to Earth and Planetary science and regularly presents at schools and outreach events. Outside of professional interests, she loves travel and photography (on Earth as well as Mars), and enjoys swimming, hiking, and social dancing.

Board Proposes Changes to Constitution & Bylaws, Vote to be Taken at September Meeting

The Officers of the Four Corners Geological Society are proposing several amendments to the Constitution & Bylaws for approval at the September meeting by the

membership. Please review the annotated Constitution & Bylaws at the end of the newsletter to see the complete text. The C&B were last updated in 2005. These revisions would achieve the following:

DUES YEAR: Change the dues year of the Society (currently the calendar year) to more closely match the tenure of elected officers and our activities year (summer to summer). This amendment would facilitate collecting annual dues. Many Members renew in September to attend the lecture series and aren't disposed to pay again in January, often remaining delinquent through March. This percentage has been growing over the last decade.

ELECTRONIC VOTING: Allow voting electronically, as well as at a Society meeting, on proposals from the board. We often have only a quarter of the membership present at meetings leaving most members without a voice. Please note that the Membership approved voting electronically for officers in 2005. This change is a continuation of that trend and an official endorsement of what has become a de facto practice.

VOTING OUTSIDE MAY: Enable voting on proposals to happen at any of the monthly meetings of the society (or electronically) rather than at the "annual meeting of the society", which is our May meeting. Again, this change officially endorses a practice we have been using for some time.

WEBSITE AVAILABILITY: Make the official version of the Constitution & Bylaws available to the membership via a website or electronic mailout rather than only in the Secretary's files. In practice this has been true since the FCGS created its first website in the early 2000's.



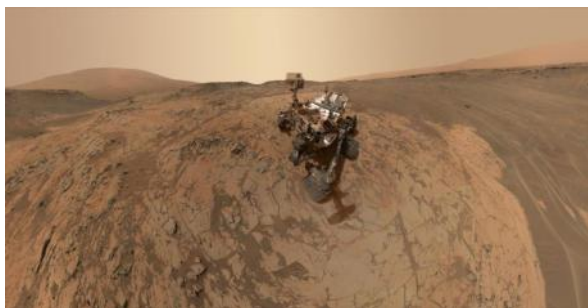
Sedimentary Records from Another World: Exploring Gale Crater Basin with the Curiosity Rover

ABSTRACT: The Mars Science Laboratory rover, Curiosity, landed on the floor of Gale crater, Mars, on August 5, 2012. In the last 5.5 years, Curiosity has traversed over 11 miles (18 km) to explore 1200 ft (370 m) of basin-fill stratigraphy exposed as layered sediments preserved around the crater's central peak, a 16,000 ft (5 km) tall stack of sediments dubbed Mount Sharp.



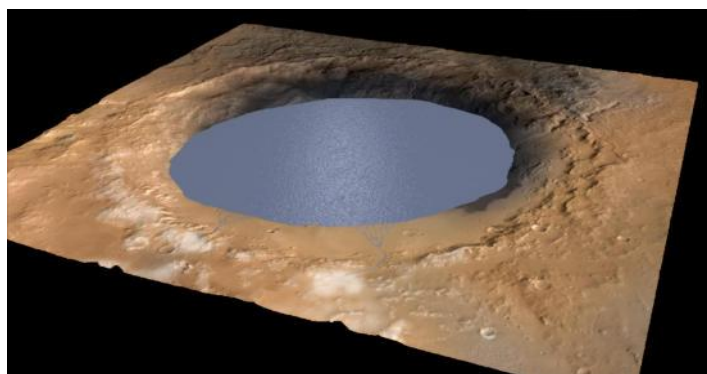
A portion of Mount Sharp, the preserved mound of sedimentary rocks in Gale crater [NASA/JPL/MSSS]

Along this traverse, Curiosity has not only collected tens of thousands of images of the Martian surface, but has also collected 500,000 laser shot-based chemistry analyses, 600 bulk chemistry analyses, and 15 drilled samples observed with both a mass spectrometer and an x-ray diffractometer, sending the data back to Earth on a daily basis. The instrument suite onboard Curiosity has enabled the highest resolution ever achieved in in-situ imaging of planetary surface samples, the first age date on another planet, ongoing chemostratigraphy based on multiple scales of compositional measurements, and ten robotic Martian selfies.



Selfie taken by Curiosity 1941 sols (Martian days) after landing, with sand dunes and Mount Sharp [NASA/JPL/MSSS].

Far beyond the numbers, Curiosity's findings have revolutionized our understanding of Mars. Whereas it was once thought that Mars may have only had intermittent short-lived periods of relatively clement atmospheric conditions, Curiosity has investigated over 300 m of mudstone deposited in a lake of liquid water that would have had habitable conditions for life ~3.5 billion years ago, which seem to have been sustained for at least 3 million years. These lake (and associated fluvial and deltaic) sediments underwent multiple episodes of diagenesis, showing that groundwater was present for even longer durations. Furthermore, the presence of cemented sedimentary rocks above angular unconformities show that significant fractions of the 152-km-diameter crater were filled with water-cemented sediments and then largely evacuated by wind at least twice prior to ~3 billion years ago.



Simulation of lake in Gale crater [NASA/JPL].

Curiosity has also shown that early Mars had more igneous diversity than previously predicted, that eolian bedforms with distinct wavelengths form under different atmospheric conditions, and that Mars today has active sand dunes and seasonal variations in atmospheric methane.

Professor Siebach will present the developing story of the history of the Gale crater basin, and the basin analysis work she has done to understand source-to-sink processes by separating chemical effects from source rock diversity, sediment transport, and diagenetic influences for multiple sedimentary cycles.

NEW FCGS WEBSITE GOES LIVE!

The new Four Corners Geological Society website is live! After working with Cortez Web Design we have something that is easy to update, functional and modern. You will be able to find our officers, newsletters, bookstore, and events on the website. We have added Rachel Medina (GIS Specialist for Montezuma County) and Timothy Matthews (Geologist at Laramide Geoservices) as the new Website Co-Chairpersons. They will be in charge of updating events, field trips and other content. Eventually, we would like to add a Membership login area, and a spot for folks to share their business cards and get their name out there. Check out the website here: www.fourcornersgeologicalsociety.org. "



“PREZ SEZ” by Tim Rynott



Welcome to the 2018/2019 season, the 68th anniversary of the Four Corners Geological Society. Although a relatively small Society in a remote part of our continent, we can boast amazing local geology and an eclectic membership covering the spectrum of petroleum, environmental, hard rock, and hydrology. I am honored to help

steer our Society thru another season of scientific dissemination, trips into the great outdoors, and avenues for social interaction.

Rounding out the Executive Committee we have a solid A-Team for setting the tableau. Sabina Kraushaar (President-Elect) has been quite busy this summer gathering an excellent slate of speakers for our monthly dinner meetings. Kim Gerhardt and Tom Staatz are seasoned pro’s (Newsletter/Treasury), and Tom Ann Casey will once again be assisting Kim, and also holding down publications. We’ll have new blood with Helen-Mary Johnson as Secretary, and we are very excited to have Tim Mathews and Rachel Medina Chairing our newly upgraded website (see page 3 for the full low down). Big thanks to Sabina for coordinating this notable improvement to 4Corners.

And then there’s Past-President Jim Corken. Not only did Jim coordinate the summer picnic, he’s also Field Trip Chairman this year. Thanks Jim. In addition, Jim and Kim have become resident experts for interpreting and revising our Constitution and Bylaws

(C&B). Yes, if that sounds like a tedious assignment – it is.

But dealing with the C&B was one of our first priorities this year. Our Executive Board voted unanimously to change our fiscal year from January/January to June/June. This schedule is more in line with other geological organizations, including the AAPG, and would make our fiscal year correspond with our activities. Other C&B initiatives include: Electronic voting, timing of membership voting, and easier access to our Bylaws. Please refer to Page 2 for the specifics. Getting familiar with these issues is highly encouraged since YOU will be voting on these amendments at this month’s dinner meeting. Appropriate research beforehand will be critical for assuring a fluid and timely process.

Lastly, the membership form has been updated and re-tooled. This new (digital only) form will comply with C&B changes and assist with polling. Please refer to page 5 for the details and see the new form on page 7.

.....As for the fun stuff: We are very excited (and fortunate) to have Dr Kristen Siebach from acclaimed Rice University speaking to us next week. Dr. Siebach is a global expert on sedimentary features and processes on Mars, utilizing enormous volumes of data from the Mars Rover and Mars Science Laboratory. It’s guaranteed to be a very captivating presentation.

Happy trails, *Tim*

2018 Annual FCGS Picnic



EVENTS, MEETINGS & COURSES (by date)

RMAG PERMIAN BASIN FIELDTRIP: September 24-28, Rick Sarg Fieldtrip Leader. For more information go to: <https://www.rmag.org/permian-basin-field-trip>

DENVER MINING CLUB MONDAY MEETINGS: Sheridan, CO. Must purchase buffet lunch at Golden Corral Buffet & Grill, 3677 South Santa Fe Drive. More info at <http://www.denverminingclub.org/>. October 1st Bob Blair. "Joseph Warton, James Pollock, and the 19th Century Establishment of Nickel-Alloy Coinage in the United States.

RMAG DENVER WELL LOGGING SOCIETY SYMPOSIUM, Golden, CO, October 2. For more information go to: <https://www.rmag.org/2018-fall-symposium> .

RMAG OCTOBER LUNCHEON: Denver CO, October 10th . Maggiano's Little Italy - 500 16th Street Mall #150, 11:30am. Speaker: Matthew Belobraydic, "Geology at the Crossroads of the Future". For more information go to: <https://www.rmag.org/upcoming-luncheons#Octoberlunch> .

PTTC (Petroleum Technology Transfer Council) ROCKIES TRAINING: October 15-16th, Durango, CO. Instructors: Trent Green, CSM. "Pipeline Hydraulics: Single and Multiphase Flow in Pipelines and Flow Assurance". For more information and to register go to: <https://www.eventbrite.com/e/pipeline-hydraulics-single-and-multiphase-flow-in-pipelines-flow-assurance-tickets-48767950252> .

COLORADO SCIENTIFIC SOCIETY MONTHLY MEETING: Lakewood, CO, October 18th. "Structural Geology of Colorado" by Ned Sterne, and Log Cross Sections in Colorado by Steve Cumella. For more information go to: <http://coloscisoc.org/> .

RMAG OCTOBER SHORT COURSE: Denver CO, October 25th . "Introduction to Unconventional Play Prospecting and Development". Instructor: David Hume and Kory Holmes. For more information go to: <https://www.rmag.org/2018-october-short-course> .

RMAG OTR FIELDTRIP: October 27-28th. Picketwire Canyonland led by Martin Lockley. For more information go to: <https://www.rmag.org/field-trips-2#octotr> .

GEOLOGICAL SOCIETY OF AMERICA 130TH ANNUAL MEETING: Indianapolis, ID, November 4-7th. For more information go to: <https://community.geosociety.org/gsa2018/home> .

RMAG NOVEMBER CORE WORKSHOP: Lakewood, CO, November 5-6th . Siliciclastic and Carbonate Core Description for Reservoir Characterization. Instructors Ali Jaffri and Junaid Sadeque. For more information go to: <https://www.rmag.org/november-2018-core-workshop> .

Changes to Membership Form

The Membership Form has been revised this summer to comply with proposed changes to the Constitution & Bylaws (see page 2), streamline delivery of the Newsletter and to more easily poll the membership on their interests. Changes include:

DUES YEAR: Changing the dues year from January 1st - December 31st to June 1st - May 31st.

EMAIL DELIVERY ONLY: Dropping the Newsletter snail mail option. The FCGS is "staffed" by volunteers with limited time and resources. In past years the Society was able to use the secretarial services of the various businesses or academic institutions of the then-current officers. This is no longer true and as our communications become more web-based the older option is being phased out.

CREDENTIALS: Asking Active and Associate members to provide their academic credentials when joining. Article I of our Bylaws restricts membership to those who are practicing or teaching geology and who hold degrees in geological or related sciences from colleges of acceptable academic standards. These requirements may be waived if the applicant has adequate professional experience. The new form insures that the FCGS complies with our Bylaws and remains an association of professional geologists, professionals in related areas and students in geologic programs.

PROFESSIONAL INTEREST BOXES: Providing a series of check boxes to indicate professional interests. On the older form members listed their interests by text entry. New members fill this section out once upon joining. Renewing members rarely fill it out. The board anticipates check boxes will provide a quick snapshot annually of the interests of the membership helping us to find speakers that address our needs.



FCGS FRIENDS SAN JUAN RIVER TRIP JUNE 5-7, 2018

<http://www.art-saloon.ru/en/item.aspx?ItemID=5411>





FOUR CORNERS GEOLOGICAL SOCIETY

P.O. Box 1501, Durango, CO 81302

MEMBERSHIP RENEWAL or APPLICATION: June 1, 2018 to May 31, 2019



*Name: _____

*Address: _____ City: _____ State: _____ Zip: _____

*Email: _____ Phone: _____

*Employer: _____

Please Identify a Membership Category:

***Please check your interests:**

- Sedimentology & stratigraphy
- Structure & tectonics
- Mineralogy, petrology, geochemistry
- Igneous geology, volcanology
- Ore geology and hard rock mining
- Other mineral extraction
- Petroleum geology
- Geophysics
- Geological engineering
- Geomorphology
- Quaternary geology
- Hydrology & water resources
- Environmental geology
- Geography / GIS
- Other interest (see box)

| | | |
|-------------------------|------|--|
| Active Member | \$25 | Any person engaged in the practice or teaching of geology or who holds a Bachelor's Degree in geological science from a college of acceptable academic standards. Degree requirement may be waived if applicant has adequate professional experience. <i>*Highest Degree, Type and Year: _____</i> <i>*College / University: _____</i> |
| Associate Member | \$25 | Any person who is a graduate of a college of acceptable academic standards with major studies related to, or associated with, geology. Degree requirement may be waived if applicant has adequate professional experience. <i>*Highest Degree, Type and Year: _____</i> <i>*College / University: _____</i> |
| Student Member | Free | Any undergraduate or graduate student majoring in geology at a college of acceptable academic standards. <i>*College / University: _____</i> <i>*Year expected to graduate: _____</i> |
| Emeritus Member | Free | An Active Member of 65 years old or older who has been a member for 25 years including time spent in military service. <i>*Year emeritus status was awarded: _____</i> |
| Honorary Member | Free | An Active Member who has contributed distinguished service to the profession of geology and to the betterment of the FCGS. Determination is made by the FCGS Executive Committee. <i>*Year honorarium was awarded: _____.</i> |

Other Professional Interests:

** Required information for new members. Current Members, please update.*

Please either print, complete and return this form with your check for dues made payable to: "Four Corners Geological Society" and mail to the address above or go online to fourcornersgeologicalsociety.org .

Your donation to the FCGS Foundation supports student research! Please enclose separate check.

PROPOSED AMENDMENTS TO THE CONSTITUTION AND BYLAWS OF THE FOUR CORNERS GEOLOGICAL SOCIETY

The Executive Committee proposes that text highlighted in purple and marked by the "strikethrough" edit shall be removed from the Constitution and Bylaws and be replaced by the text highlighted in yellow. A vote will be taken on these amendments at the September 20th, 2018 meeting of the Society.

CONSTITUTION AND BYLAWS OF THE FOUR CORNERS GEOLOGICAL SOCIETY

Reviewed and revised by E.W. Heath, M.L. Gillam, T.A. Casey, Jim Corken, Tim Rynott and K.M. Gerhardt; submitted to and approved by the membership, May, 2005 September, 2018.

CONSTITUTION

ARTICLE I. NAME

This organization, which is incorporated under the laws of the State of Colorado, shall be called "The Four Corners Geological Society."

ARTICLE II. PURPOSE

The purposes of this Society are to provide an association for the discussion of subjects and problems coming within the scope of the geological profession and by such association to advance the science of geology; to promote the technology of exploring for, finding and producing materials from the earth; to foster the spirit of scientific research; to disseminate information relating to geology and to inspire and maintain a high standard of professional conduct on the part of its members.

ARTICLE III. MEMBERSHIP

SECTION 1. The members of this Society shall consist of persons concerned with the professional applications of the geological sciences.

SECTION 2. Various classifications of memberships and the qualifications thereof shall be established by the Bylaws of the Society.

ARTICLE IV. ETHICS

SECTION 1. Each member, of whatever classification, shall be guided by the highest standards of business ethics, personal honor and professional conduct.

SECTION 2. Any member, of whatever classification, violating the standards prescribed in this article shall be subject to discipline as provided by the Bylaws.

ARTICLE V. GOVERNMENT

The government of this Society shall be vested in elected officers, an Executive Committee and the membership. The composition of each body, the manner of selection, the terms of office, the specific duties, responsibilities and other matters relevant to such bodies and officers shall be as provided in the Bylaws of this Society. Any responsibility and authority of government of this Society not otherwise specified in these governing documents shall be reserved to the Executive Committee.

ARTICLE VI. DISPOSITION OF ASSETS

The Four Corners Geological Society is a nonprofit organization. In the event of the dissolution of the Society, the Society shall distribute any assets remaining after the discharge of all liabilities, for charitable, scientific or educational purposes in compliance with exemption provided under the applicable Internal Revenue Code. It is recognized that, under

these circumstances, no member of the Society shall have any right or interest in or to the property or assets of the Society .

ARTICLE VII. BYLAWS

The Bylaws, as appended hereto, are hereby adopted and may be amended, enlarged or reduced as provided in the Bylaws.

ARTICLE VIII. AMENDMENTS

SECTION 1. Proposal of Amendments. Amendments to this Constitution may be proposed by the following:

- Resolution by the Executive Committee.
- Resolution by a constitutional committee appointed by the President.
- Written proposal signed by ten (10) members of the Society.

SECTION 2. Amending Procedure

- The Executive Committee shall determine the legality of the proposed amendment.
- Upon affirmation of legality, the proposed amendment shall be presented for consideration at the annual any meeting of the Society between September and May.

SECTION 3. Consideration of Amendments

This Constitution may be amended by a two-thirds (2/3) affirmation vote of the members present and voting at the annual meeting. Or by a two-thirds (2/3) affirmation vote of members filing an electronic ballot.

SECTION 4. Record of Amendment

- Amendments become effective immediately upon passage and Secretary shall immediately amend his/her copy of the Constitution.
- The Secretary's copy of the Constitution shall be the official copy and shall be kept current at all times. This copy shall be available to the membership by posting it electronically in the current media (i.e. a website or the future evolution of such) or an annual electronic mailout.

BYLAWS

ARTICLE I. MEMBERSHIP

SECTION 1. Membership. Membership in this Society shall consist of the following classifications: (a) Active Members, (b) Emeritus Members, (c) Honorary Members, (d) Students, and (e) Associates.

SECTION 2. Definition of Term "Member". Unless otherwise expressly provided in these Bylaws, the term "Member" shall refer only to Active, Emeritus, and Honorary Members. Only Members may hold office, vote in Society affairs, or sponsor membership applications.

SECTION 3. Active Members. Any person engaged in the practice or teaching of geology may apply for active membership provided that person holds a Bachelor's Degree in geological science from a college of acceptable academic standards. The Executive Committee may waive degree or

current professional activity requirements if in its judgment an applicant has adequate professional experience and has attained standing in the profession.

SECTION 4. Emeritus Members. When an Active Member in good standing in the Society, with all dues paid to date, becomes sixty- five (65) years of age and shall have been an Active Member for a total of twenty five (25) years including time spent in military service, he/she shall become an Emeritus Member of this Society upon advising the Executive Committee of the Society that he/she has passed his/her sixty- fifth (65) birthday, and by requesting such classification of membership. Emeritus Members shall not be required to pay dues, but shall have all the privileges and advantages of active membership in this Society.

SECTION 5. Honorary Members. Honorary Members shall be those Active Members of this Society who shall have contributed distinguished service to the profession of geology, and to the betterment of the Four Corners Geological Society. Such determination shall be made by the Executive Committee. Honorary Members shall not be required to pay dues, but shall have all the privileges and advantages of active membership in this Society.

SECTION 6. Students. Any undergraduate or graduate student majoring in geology at a college of acceptable academic standards may apply for student membership.

SECTION 7. Associates. Any person not qualified for any other class of membership who is a graduate of a college of acceptable academic standards with major studies related to, or generally associated with, geology may apply for election as an Associate. The Executive Committee may waive degree requirements, if in its judgment an applicant has adequate professional experience and has attained professional standing.

SECTION 8. Election to Membership. The Executive Committee shall approve all new members and be the sole judge of the eligibility of the applicant for membership and the adequacy of his/her qualifications.

SECTION 9. Resignation. Any member of whatever classification may resign at any time from the Society; such resignation shall be in writing and shall be accepted by the Executive Committee.

SECTION 10. Loss of Membership Rights. Any member of whatever classification who resigns, or who forfeits membership for nonpayment of dues, or who is expelled for ethical reasons, ceases to have any rights in the Society and ceases to incur further indebtedness to the Society.

SECTION 11. Reinstatement. Any person who has ceased to be a member of whatever classification, who has resigned, or who has forfeited membership for nonpayment of dues, unless expelled for ethical reasons, may be reinstated by unanimous vote of the Executive Committee, subject to payment of any outstanding dues and/or other indebtedness to the Society on the date when he/she ceased to be a member.

ARTICLE II. EXECUTIVE COMMITTEE

SECTION 1. Executive Authority. The executive authority of this Society shall be vested in an Executive Committee composed of the following members: (a) President, (b) President Elect, (c) Past-President, (d) Secretary, (e) Treasurer, and (f) Editor.

SECTION 2. Jurisdiction. (a) The Executive Committee shall have general executive control and management of the

affairs and funds of this Society; these shall include but not be limited to: designation of time and place of the annual meeting of the Society and other meetings; supervision of election of officers and filling vacancies; determination of applicant qualifications and classifications; accepting, creating and administering funds for purposes provided under the Constitution and Bylaws of this Society; establishing such fiscal policies as may be appropriate; coordinating activities with the Four Corners Geological Society Foundation; ensuring that the Society maintains its nonprofit status with the Internal Revenue Service; and performing such other administrative duties as required to accomplish the objective and purposes of this Society.

(b) The Executive Committee may appoint members as needed to manage and special Society projects, such as book publications, technical conferences, and field trips.

(c) It will be the policy of the Executive Committee to submit to the membership for majority approval any single Society project that will require the expenditure of more than twenty- five hundred dollars (\$2,500) or 10 percent (10%) of the Society's available financial resources (excluding its non- monetary assets), whichever is the lesser. Such submittal will be in the form of a written resolution by the Executive Committee detailing the nature and plan of the project, as well as its estimated cost, sent to the full membership at least three (3) weeks prior to a regular meeting in which the Executive Committee intends to solicit approval of the project. Approval will be obtained by a majority vote of the membership attending the meeting **or by a majority of members filing an electronic ballot.** During execution of the project, the Executive Committee will keep a record of both the progress and the expenditures made on the project, taking care to control the cost to within reasonable bounds of the original estimate and to keep the membership informed of these matters on a regular and continuing basis.

(d) The Executive Committee shall also serve as an appeal authority in all matters involving grievance proceedings.

SECTION 3. Meetings. (a) The Executive Committee shall meet at such times during the year and at such places as designated by such Executive Committee and at the call of the President. A quorum shall consist of four (4) Executive Committee members. Roberts Rules of Order shall apply at all meetings.

(b) A joint meeting of the outgoing and incoming Executive Committees shall be called by the President as soon as possible after the close of the annual meeting of the Society.

ARTICLE III. MEETINGS OF THE MEMBERSHIP

SECTION 1. Jurisdiction. All of the legislative functions of this Society, within the scope of the Constitution and Bylaws, shall be vested in the membership, herein referred to as "Members."

SECTION 2. Meetings. The annual meeting of the Members of this Society shall be held in May at a time and place designated by the Executive Committee. Other meetings shall be scheduled by the President and the Executive Committee. **Voting can be either by those present at the annual meeting or those filing an electronic ballot.** **Voting shall be only by those Members present. No proxy votes shall be allowed.** Roberts Rules of Order shall apply at all meetings.

ARTICLE IV. OFFICERS

SECTION 1. Designation. The officers of this Society shall be

the following: (a) President, (b) President Elect, (c) Past-President, (d) Secretary, (e) Treasurer, and (f) Editor.

SECTION 2. President. The President shall be the chief executive officer of this Society. He/she shall be the presiding officer at all meetings of the Society. The President shall coordinate the Society's activities with that [those] of other groups engaged in similar activities. He/she may appoint committee members and chairmen and delegate members to special assignments within the limits prescribed in the Constitution and Bylaws.

SECTION 3. President Elect. The President Elect shall perform the duties of the President in the absence or inability of the President to serve. The President Elect shall assume the office of President in case of a vacancy for any cause in that office. He/she shall serve as Program and Entertainment Chairman and perform such other duties as may be assigned by the President.

SECTION 4. Past-President. The Past-President shall serve as such for one (1) year following his/her presidency. The Past-President shall have no administrative authority except as a member of the Executive Committee. The function of the Past-President is advisory and should serve to facilitate the transition from one administration to the next.

SECTION 5. Secretary. The Secretary shall be responsible for maintaining the records of the Society, including current copies of the Articles of Incorporation, Constitution, and Bylaws. He/she shall maintain a current list of members and perform other functions related to maintaining membership. The Secretary shall be responsible for recording the actions of the Executive Committee. He/she shall work closely with all officers of the Society in handling incoming and outgoing correspondence and perform other duties as may be directed by the Executive Committee.

SECTION 6. Treasurer. The Treasurer shall supervise the receipt of all funds and, under the direction of the Executive Committee, be responsible for all disbursements of funds of the Society. He/she shall recommend for Executive Committee approval a plan of investment for those funds in the Society's treasury generally in excess of those necessary for normal operating expenses, and shall oversee the execution of such an approved plan. The Treasurer shall recommend for Executive Committee approval an accounting and audit procedure for Society funds with necessary professional accounting help. He/she shall advise the Executive Committee with respect to the current financial status of the Society for any major expenditure for planned projects and programs. He/she shall make an annual report as Treasurer, arrange for preparation of the Society's income tax filings, supervise book sales and the maintenance of inventory records, and perform such other duties as directed by the Executive Committee. Finally, the Treasurer shall ensure that the Society gives bond, the amount of which shall be determined by the Executive Committee.

SECTION 7. Editor. The Editor shall have general supervision and final authority in soliciting, accepting and rejecting all material for publication in the Newsletter and other regular publications of the Society. He/she shall ensure that the Newsletter is published in a timely manner and that it includes all required elements, such as notice of meetings, ballots for electing officers, and notices concerning proposed Society projects. The Editor shall supervise the maintenance of the Society's Website. With the approval of the Executive Committee, the Editor shall appoint, replace and reappoint such other editors and associate editors from among the membership of the Society as may be required to

accomplish these activities.

SECTION 8. Terms of Office. (a) All terms of office shall be one (1) year.

(b) The President Elect shall succeed the President in office. However, if the President Elect is unable or unwilling to do so, another candidate may be submitted to the membership for election as President.

(c) The Secretary, Treasurer and Editor may succeed themselves in office.

(d) The terms of office shall commence at the close of the annual meeting of the Society at which their election is announced.

SECTION 9. Election of Officers. (a) These officers shall be elected from among the Members of the Society by means of a secret ballot in the following manner: not later than ~~March 31~~ **May 1st** of each year, the Nominating Committee shall nominate one or more candidates each for President, President Elect, Secretary, Treasurer and Editor. Additional nominations may be made from the floor at the meeting preceding the election. Voting may be done by mail ballot, by electronic ballot, or by secret ballot at the annual meeting of the Society. The Executive Committee shall count the ballots and report the results at the annual meeting. A plurality of votes cast for an office is necessary for election. In case of a tie vote, the Executive Committee shall cast one (1) additional deciding vote.

(b) The Nominating Committee shall consist of the President and the two most recent Past-Presidents available. If Past-Presidents are unavailable, the President shall appoint members to be on the Nominating Committee.

SECTION 10. Vacancies. A vacancy occurring in the offices of Vice-President President Elect, Past-President, Secretary, Treasurer or Editor shall be filled by the Executive Committee.

ARTICLE V. COMMITTEES

SECTION 1. Authorization. This Society shall establish and maintain such committees as may be authorized by the Executive Committee.

SECTION 2. Appointment and Tenure. The President shall appoint all committee chairmen, vice-chairmen and committee members and fill vacancies whenever they occur, except where otherwise specified in these Bylaws. The Executive Committee shall determine the number of members of each committee and may remove any committee chairman, vice-chairman, or member. Committee members shall serve for the duration of their assignment, except their terms shall not extend beyond the subsequent annual meeting.

ARTICLE VI. FOUNDATION

SECTION 1. Authorization. Following a vote of its Members in 1995, the Society established the autonomous Four Corners Geological Society Foundation as a permanent entity to receive contributions, invest contributions, and distribute funds for the purposes and provisions stipulated in its Articles of Incorporation, dated April 19th, 1996 and as subsequently amended.

SECTION 2. Communications. The Executive Committee shall represent the Society in its dealings with the Foundation.

SECTION 3. Election of Foundation Trustees. (a) Foundation Trustees shall be elected by the Members of the Society. A minimum of three (3) and a maximum of six (6) Trustees will serve three (3)-year terms. These terms shall be staggered so that one third (1/3) of the Trustees shall be elected in any single year.

(b) Candidates for the position of Foundation Trustee will be identified by the Nominating Committee from among the Members of the Society. Voting may be done by mail ballot, by electronic ballot, or by secret voting at the annual meeting of

the Society. The Executive Committee shall count the ballots and report the results at the annual meeting or at another scheduled meeting of the Members of the Society. A plurality of votes cast is necessary for election.

(c) A vacancy caused by the resignation of an elected trustee, or the trustee's inability to serve, shall be filled by the Executive Committee.

ARTICLE VII. GRIEVANCE PROCEEDINGS

SECTION 1. Investigation. Charges of misconduct in violation of Section 1, Article IV of the Constitution shall first be submitted in writing to the President of the Society by a Member in good standing, in confidence, with a full statement of the evidence on which the charges are based. If, in the judgment of the President, they merit further consideration, the President shall appoint a committee of three (3) Past-Presidents of the Society to examine the charges. If, in the judgment of said committee, the facts warrant, it shall prepare and file with the Executive Committee formal charges against the accused Member or Associate.

SECTION 2. Notice of Hearing. As soon as possible after the receipt of such formal charges, the Executive Committee shall fix a date and place for hearing thereon, and shall give to the accused person notice thereof in writing, mailed to the accused person by registered mail at his /her last known post-office address not less than thirty (30) days before said date, accompanied by a copy of the formal charges, and a copy of this Article.

SECTION 3. Hearing. On the day fixed for the hearing, the accused person may appear before the Executive Committee, with or without counsel, hear any witnesses called in support of the charges, and, at his/her option, cross-examine the same, present witnesses and submit oral or written statements in his/her own behalf. The Executive committee may likewise present witnesses and have the right to cross-examination. At his/her option, the accused person may, by letter addressed to the President of the Society, postmarked not less than ten (10) days prior to the date of the hearing, waive personal appearance and request the Executive Committee to adjudge the matter on the basis of a written statement of defense accompanying such letter.

SECTION 4. Decision of Executive Committee. After the conclusion of the hearing or study of the written defense submitted in lieu thereof, the Executive Committee shall consider and vote to sustain or dismiss the charges. If the Executive Committee shall, by unanimous vote, declare the charges sustained, it shall: (a) admonish the accused person; or (b) suspend him/her for a stated period of time; or (c) allow him/her to resign; or (d) expel him/her. Failure of the accused person to appear or to submit a waiver letter and a written defense, as in this section provided, shall not prevent the Executive Committee from rendering final judgment on the basis of the evidence available to it on the hearing date.

SECTION 5. Resignation. Resignation by the accused person from the Society, at any state in the foregoing prescribed proceedings, shall automatically terminate the proceedings. Following resignation, the accused person so resigning shall not be eligible for reinstatement to membership under any circumstances in the future.

SECTION 6. Expulsion. Persons expelled from the Society under

these proceedings shall thenceforth be ineligible for reinstatement to membership under any circumstances in the future.

ARTICLE VIII. DUES

SECTION 1. Fiscal year. The fiscal year of the Society shall correspond to the calendar year ~~be~~ **June 1st to May 31st.**

SECTION 2. Dues Schedule and Billing. The annual dues of members shall be payable in advance of the fiscal year in accordance with a schedule to be established as necessary by the Executive Committee and approved at any regular Society meeting by an affirmative vote of two-thirds (2/3) of the Members present and voting. Membership renewal forms shall be sent to each Active Member, Student and Associate before ~~December 1~~ **May 1st** of each year, stating the amount of annual dues.

SECTION 3. Arrears and Suspension. (a) Any member of whatever classification whose dues are not paid by ~~January 1~~ **June 1st** shall be considered delinquent.

(b) Any member of whatever classification whose dues are in arrears for more than sixty (60) days and for less than one (1) year shall be suspended from membership in the Society and shall not be entitled to the privileges of membership.

SECTION 4. Forfeit of Membership. Any member of whatever classification who is more than one (1) year in arrears in payment of dues shall forfeit membership in the Society and his/her name shall be removed from membership rolls.

SECTION 5. Waiver of Dues – Military Service. During any period in which the United States is actually engaged in war and for a period of one (1) year thereafter, the Executive Committee may suspend, reduce, or waive the payment of dues by Active Members, Students or Associates serving in the armed forces of the United States without otherwise affecting their membership.

ARTICLE IX. AMENDMENTS

SECTION 1. Proposal of Amendments. Amendments to these Bylaws may be proposed by the following means: (a) Resolution by the Executive Committee; (b) written proposal signed by ten (10) Members of the Society.

SECTION 2. Amending Procedure. (a) The Executive Committee shall determine the legality of the proposed amendment.

(b) Upon affirmation of legality, the proposed amendment shall be presented for consideration at **any monthly** ~~the annual~~ **meeting** of the Society.

SECTION 3. Consideration of Amendments. These Bylaws may be amended by a two-thirds (2/3) affirmative vote of the Members present and voting at the ~~annual~~ **meeting or by a two-thirds (2/3) affirmative vote of the Members filing an electronic ballot.**

SECTION 4. Record of Amendment. (a) Amendments become effective immediately upon passage and the Secretary shall immediately amend his copy of the Bylaws.

(b) The Secretary's copy of the Bylaws shall be the official copy and shall be kept current at all times. **This copy shall be available to the membership by posting it electronically in the current media (i.e. a website or the future evolution of such) or an annual electronic mailout.**