



2018 Rocky Mountain Regional Meeting  
American Chemical Society

Friday, October 26, 2018  
Sheraton Albuquerque Airport  
2910 Yale Blvd SE  
Albuquerque, NM 87106

The ACS Central New Mexico Local Section and ACS Rocky Mountain Region Board welcome you to the 2018 Rocky Mountain Regional Meeting (RMRM) at the Sheraton Albuquerque Airport. A focus of this meeting is to provide a venue for undergraduate and graduate students in our Region and beyond to make both oral and poster presentations.

We appreciate the support of the other six ACS Rocky Mountain Region local sections in our meeting organization efforts: Central Arizona, Central Utah, Colorado, Salt Lake City, Southern Arizona, and Wyoming.

We appreciate the opportunity to partner with the New Mexico Academy of Science and New Mexico EPSCoR to deliver our ACS regional meeting on the day before their meeting in the same venue. Through this partnership we have strived to deliver two excellent meeting opportunities to our collective communities in a mutually cost effective manner.

While most ACS regional meetings would typically run about three days in length, our ACS Rocky Mountain Region and two other ACS regions are evaluating this year shorter duration regional meetings. This is to determine if such a format option can better allow some of our ACS region boards and constituent ACS local sections to meet the needs of our community with due consideration to our volunteer and financial resources. The shorter duration has meant some typical aspects of an ACS regional meeting, e.g. an exposition, have not been included. In the days following this Regional Meeting you will receive a survey from the ACS regarding your experience in attending this meeting. We hope you will participate and provide input on your experience.

#### Our 2018 RMRM Organizing Committee

Mr. Donovan Porterfield, General Chair  
Los Alamos National Laboratory

Dr. Ning Xu, Program Chair  
Los Alamos National Laboratory

Dr. Patrick Burton, Organizer  
Sandia National Laboratories

Dr. Rebecca Chamberlin, Organizer  
Los Alamos National Laboratory

Dr. Jiao Chen, Organizer  
New Mexico Highlands University

Dr. Dali Yang, Organizer  
Los Alamos National Laboratory

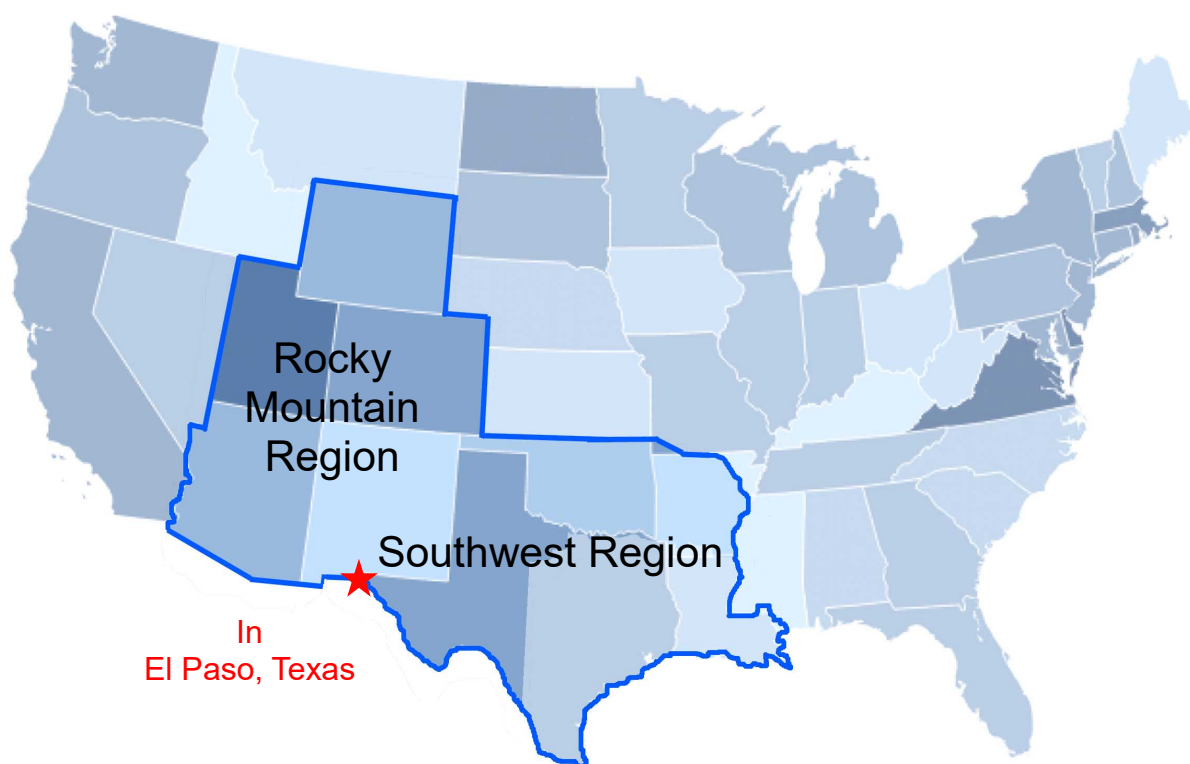
As well our thanks to the support from our ACS Meeting Planning Partner:

Ms. Starleeta Gaddis-Parker, Manager  
Regional Meetings, Department of Meetings & Exposition Services  
American Chemical Society

We would also like to recognize the financial support provided by:  
Board of Directors, American Chemical Society  
Local Section Activities Committee, American Chemical Society

Plan to join us for the  
American Chemical Society 2019  
Southwest and Rocky Mountain Regional Meeting

November 12-16, 2019  
El Paso Convention Center



For more information please contact the following:

Dr. Geoffrey Saupe, Co-General Chair  
University of Texas at El Paso  
gsaupe@utep.edu

Dr. Dean Roddick, Co-General Chair  
University of Wyoming  
DMR@uwyo.edu

Dr. Dino Villagran, Co-Program Chair  
University of Texas at El Paso  
dino@utep.edu

Dr. Brian Leonard, Co-Program Chair  
University of Wyoming  
bleonar5@uwyo.edu

## Learn more about the ACS



During the evening poster session and reception, ACS Board member Kathleen Schulz will meet informally to discuss and/or answer questions about ACS membership, its benefits, and any other topics attendees wish.

Kathleen is the President of Business Results Inc. and is retired from Sandia National Laboratories/Lockheed-Martin Corporation. She has worked in every sector of the chemical enterprise - academe, industry, consulting, and government contracting in health, environment, nuclear and defense applications. She earned her Bachelor's degree summa cum laude from Eastern New Mexico University in 1964, and a Ph.D. in analytical chemistry from the University of Missouri-Columbia. She has been a member of the American Chemical Society since 1964.



Dr. Mathew Horn (Chemistry Department, Utah Valley University) is representing the ACS Division of Chemical Education at our meeting.

Want to know more about the Division of Chemical Education, learn how you can get more involved with DivCHED, learn about educational resources for chemistry, find out how to apply for travel awards, or meet and network with people from your region, nationally, and around the world who have similar interests? The Division of Chemical Education aims to serve as a means of focusing and enhancing the interest and efforts of all constituencies involved in the teaching and learning of chemistry at every level. If you have an interest in chemistry education, we want you involved in DivCHED. Visit with Mathew to learn more about the Division and all we have to offer, meet representatives from the Division, and let us know what you think the Division can do to better meet the needs of our members.

## Reminders

### **American Chemical Society 2019 Elections**

Balloting for President-Elect 2019, two Directors-at-Large, and Directors for Districts I and V will close on 12:00 p.m. (Central Time, USA) on **October 31**.

Your vote speaks for you, yet fewer than 12% of eligible ACS members actually cast ballots in ACS national elections. Do almost 90% of ACS members actually have nothing to say about the leadership of their professional society?

Make sure your ballot reaches you! ACS has partnered with Survey & Ballot Systems (SBS) to administer the election. To assure your election-specific broadcast e-mail arrives safely in your inbox on or around October 1, simply add the following e-mail address as an approved sender: [noreply@directvote.net](mailto:noreply@directvote.net).

Candidate statements, websites, and videos are posted on the ACS National Election Information page [<https://www.acs.org/content/acs/en/about/governance/elections/candidates.html>]. Information on how to vote online or by paper ballot, how to order a replacement ballot, and technical support will be posted on [www.acs.org/elections](http://www.acs.org/elections) during the balloting period. For more information, visit the ACS Elections website [<https://www.acs.org/content/acs/en/about/governance/elections.html>], or send e-mail to [nomelect@acs.org](mailto:nomelect@acs.org).

### **Project SEED – 50 Forward campaign**

If you're a chemist or chemical engineer, your career may have started with surreptitious experimenting with a chemistry set in the basement. Or maybe it was a science fair experiment presented proudly with the support of an inspiring teacher. Experimentation is central to who we are as scientists. In laboratories and lecture halls (and even basements!), we define problems, test possibilities, and then refine and improve the solutions.

In 1968, a group of ACS members launched an experiment called Project SEED. Targeting deep-seated challenges in society and education at the time, the program opened the doors of top chemistry laboratories to high school students who had little access to such opportunities. Dedicated ACS mentors engaged students in research, leading not only to a lifelong passion for science for many students, but also to confidence and new ideas of who they could become.

Chemistry Nobel laureate Sir Fraser Stoddart is serving as Champion for the 50 Forward campaign which celebrates the 50<sup>th</sup> anniversary of Project SEED and aims to expand the program and its ongoing source of funding.

To learn more about project SEED and to donate, visit [\*\*acs.org/forward\*\*](http://acs.org/forward)

# American Chemical Society

## 2018 Rocky Mountain Regional Meeting

N. Xu, *Program Chair*

**FRIDAY MORNING - OCTOBER 26, 2018**

### General Chemistry

Sheraton Albuquerque Airport  
Gran Quivera

P. D. Burton, *Organizer, Presiding*

**9:00** Introduction.

**9:05 1.** Ethnoscience strategies to indigenize science at tribal colleges: Connecting chemistry to the tribal community. **B. DeVore-Wedding**

**9:35 2.** Regenerable single atom catalysts for alkane conversions. **G. Canning**, M. Senn, H. Xiong, R. Alcala, N. LiBretto, J. Miller, A.K. Datye

**10:05** Intermission.

**10:30 3.** LigandNet: Machine-learning based toolkit for predicting ligand activity to proteins. **S. Sirimulla**

**11:00 4.** Crowding effect on electron transfer in inducible nitric oxide synthase. **J. Li**, C. Feng

### Inorganic Chemistry

Sheraton Albuquerque Airport  
Valle Grande

R. M. Chamberlin, *Organizer, Presiding*

**9:00** Introduction.

**9:05 5.** Synthesis and characterization of lanthanide-silica based core/shell nanoparticles for scintillator applications. **F. Guerrero**

**9:35 6.** Synthesis of manganese-based precursors and nanoparticles for electronic printing applications. **T. Nguyen**, T.J. Boyle, L.J. Treadwell

**10:05** Intermission.

**10:30 7.** New model systems for periplasmic nitrate reductase (Nap) and formate dehydrogenase (Fdh) catalytic intermediates. **K. KC**, M.L. Kirk

**11:00 8.** Insights into molecular rectification using donor-acceptor molecules. **R. Dangi**

## **Organic Chemistry**

Sheraton Albuquerque Airport  
Chaco

D. Yang, *Organizer, Presiding*

**9:00** Introduction.

**9:05 9.** Structure and properties of new push-pull molecules. **G. Bogdanov**, J.P. Tillotson, J.W. Perry, T.V. Timofeeva

**9:35 10.** Design, synthesis, and evaluation of cystargolide-based  $\beta$ -lactones as potent proteasome inhibitors and anti-cancer agents. **D. Niroula**, R. Tello-Aburto

**10:05** Intermission.

**10:30 11.** Concepts important for proficiency in organic reaction mechanisms. **S. Nedungadi**, M.D. Mosher, R.M. Hyslop, C.E. Brown

## FRIDAY AFTERNOON - OCTOBER 26, 2018

### Analytical Chemistry

Sheraton Albuquerque Airport  
Chaco

J. Chen, *Organizer, Presiding*

**1:15** Introduction.

**1:20 12.** Progress report on the design of a flow-based ATR-FTIR Spectrometer. **A. Campanella**, M.D. Mosher

**1:50 13.** Fluorescent bead-based method to study the phospholipase A2 -lipid membrane interaction. **S. Hossain**, M.E. Piyasena, K. Pai

**2:20 14.** Method development: Transition characterization of poly(ester urethane) block copolymer elastomer via thermal and mechanical analyses. **A. Edgar**, J. Torres, D. Yang

**2:50** Intermission.

**3:15 15.** Effects of encapsulated cells on the physical-mechanical properties and microstructure of gelatin methacrylate with high degree of functionalization. **S. Krishnamoorthy**, H. Xu, C. Xu

**3:45 16.** Micromachined aluminum microfluidic devices: Miniaturized tool for biomedical applications. **G.P. Gautam**, M.E. Piyasena

**4:15 17.** Microsphere-supported lipid bilayers with fluorescent lipid probes for the detection of phospholipase D activity. **R. Gurung**, T. Ogas, P. Patidar, M.E. Piyasena

**4:45 18.** Kinetics of peroxytaurine reactions. **G. Meyer**, S.J. Karpowicz

### Inorganic Chemistry

Sheraton Albuquerque Airport  
Valle Grande

R. M. Chamberlin, *Organizer, Presiding*

**1:15** Introduction.

**1:20 19.** Normalized Timescale Method for the determination of order in catalyst for electrocatalytic reactions. **T.A. Stinson**, M.J. Bailey, A.M. Lilio, T.H. Myren, C.G. Huntzinger, M.R. Hudak, O.R. Luca

**1:50 20.** Manganese N-heterocyclic carbene pincers for the electrocatalytic reduction of carbon dioxide. **T.H. Myren**, A.M. Lilio, C.G. Huntzinger, J.W. Horstman, T.A. Stinson, T.B. Donadt, C. Moore, B. Lama, H.H. Funke, O.R. Luca



**2:20 21.** Hierarchical zinc oxide nanostructures for the photochemical reduction of bicarbonate to solar fuels. **H. Pan**, V. Risley, K. Martindale, M.D. Heagy

**2:50** Intermission.

**3:15 22.** Molecular rectification behavior of the pyranopterin ligand of molybdoenzymes. **L. Ingersol**, M.L. Kirk

**3:45 23.** Charge effect on oxygen atom transfer reactivity related to molybdoenzymes. J. Paudel, **A. Pokhrel**, M.L. Kirk, F. Li

**4:15 24.** Generation and characterization of functional phosphoserine incorporated neuronal nitric oxide synthase holoenzyme. **H. Zheng**, J. He, J. Li, J. Yang, M.L. Kirk, L. Roman, C. Feng

**4:45 25.** Implications of pyran cyclization and pterin conformation on oxidized forms of the molybdenum cofactor. **J. Yang**, M.L. Kirk, D. Gisewhite, B. Williams, A. Esmail, B.W. Stein, S. Burgmayer

## Physical Chemistry

Sheraton Albuquerque Airport  
Gran Quivera

D. R. Porterfield, *Organizer, Presiding*

**1:15** Introduction.

**1:20 26.** Synthesis of nitrile-functionalized ladder-type oligo(*p*-phenylene)s for probing electron delocalization. **J. Yan**, A. Ledbetter, E.W. Reinheimer, T. Mani, J.R. Miller

**1:50 27.** Discrete stochastic solution to lipid bilayer permeation model. **G. Angles**

**2:20 28.** Counting triplets on single polymer chains for solar cells. **B. Datko**, A. Thomas, M.J. Heeney, J.K. Grey

**2:50** Intermission.

**3:15 29.** Non-reactive binding sites and their role in the  $\text{AlVO}_4^+ + \text{CO}/\text{AlVO}_3^+ + \text{N}_2\text{O}$  catalytic cycle. **B. Sweeny**, S.G. Ard, N. Shuman, A.A. Viggiano

**3:45 30.** How cerium oxide traps high concentrations of thermally stable platinum single atoms. **D. Kunwar**, S. Zhou, A. DeLaRiva, E. Peterson, H. Xiong, **X. Isidro Pereira Hernández**, S. Purdy, R. ter Veen, H. Brongersma, J. Miller, L. Kovarik, S. Lin, H. Guo, Y. Wang, A.K. Datye

**4:15 31.** Infrared photodissociation spectroscopy of the  $\text{H}_6^+$  cation in the gas phase. **D.C. McDonald**, J.P. Wagner, M.A. Duncan

**4:45 32.** Photoreduction of  $\text{CHCl}_3$  in aqueous SPEEK/ $\text{HCO}_2^-$  solution involving free radicals. **M.S. Islam**

## FRIDAY EVENING- OCTOBER 26, 2018

### Analytical Chemistry

Sheraton Albuquerque Airport Tijeras

J. Chen, *Organizer*

**6:00 - 8:00**

**33.** Size effect of gold nanoparticles on graphene quantum dots fluorescence intensity. **Y. Zhang**

**34.** Facile synthesis of graphene quantum dots and their applications in bioimaging. **Z. Schroer**

**35.** Efficiency enhancement of anaerobic digester in microbial fuel cell through use of *R. Albus*. **S. Chung, D.J. Moon, J. Kim**

### Inorganic Chemistry

Sheraton Albuquerque Airport  
Tijeras

R. M. Chamberlin, *Organizer*

**6:00 - 8:00**

**36.** Silver nanoparticles synthesis in ionic liquids. **S. Wolde, H. Zhao, M. Watzky**

### Organic Chemistry

Sheraton Albuquerque Airport  
Tijeras

D. Yang, *Organizer*

**6:00 - 8:00**

**37.** Progress report on the use of viscometry in DNA-drug interactions. **J. Forster**

**38.** Microwave assisted synthesis of 3,6-disubstituted pyrazolo[1,5-a]-pyrimidines and progress toward discovery of anticancer activities. **J. Singleton, R. Dass, M.A. Peterson**

**39.** Efficient microwave assisted synthesis of N'-aryl/(alkyl)-substituted N-(4-hydroxy-6-phenylpyrimidin-2-yl)guanidines: Scope and limitations. **J. Singleton, P. Machicao, R. Christensen, N. Lohner, M.A. Peterson**

- 40.** Synthesis and characterization of high mobility, side-strapped phthalocyanines for organic photovoltaics. **W.G. Benson**
- 41.** On the reduction chemistry of imidazolium salts. **C.G. Huntzinger**, T. Myren, T.A. Stinson, O.R. Luca, M.R. Hudak
- 42.** Olfactory receptor mediated repellency of linalool, geranyl acetate, and EBF in two drosophila species. **P.K. Duran**
- 43.** Progress report on the preparation of O-benzyl-N-(9'-acridinyl)hydroxylamines. **N.K. Robbins**, M.D. Mosher
- 44.** Aldol approach to efficient, stereoselective synthesis of structurally diverse beta-lactones. **S.K. Ganegamage**, R. Tello-Aburto, N. Doleshwar
- 45.** Lewis-acid-mediated union of epoxy-carvone diastereomers with anisole derivatives: Mechanistic insight and application to the synthesis of non-natural CBD analogues. S. Bailey, R. Sapkota, **A.E. Golliver**, B. Dungan, M. Talipov, O. Holguin, W.A. Maio
- 46.** Mechanism of hop oil isomerization. **E. Munder**, M.D. Mosher
- 47.** Oximation of benzalacetone. **R. Owusu Sarpong**, M.D. Mosher

## Physical Chemistry

Sheraton Albuquerque Airport  
Tijeras

D. R. Porterfield, *Organizer*

**6:00 - 8:00**

- 48.** Synthesis and characterization of Iron containing MOFs for environmental remediation. **M.I. Chibuike**
- 49.** X-ray and DFT studies of novel thiobarbituric chromophores with nonlinear optical properties. **S. Rigin**, G. Bogdanov, T.V. Timofeeva, J.P. Tillotson

## General Chemistry

Sheraton Albuquerque Airport  
Tijeras

P. D. Burton, *Organizer*

**6:00 - 8:00**

- 50.** Evaluation of amyloid- $\beta$  protein as an antimicrobial peptide in Alzheimer's disease. **C. Hunter**, A. Fanni, D. Brown, E.Y. Chi

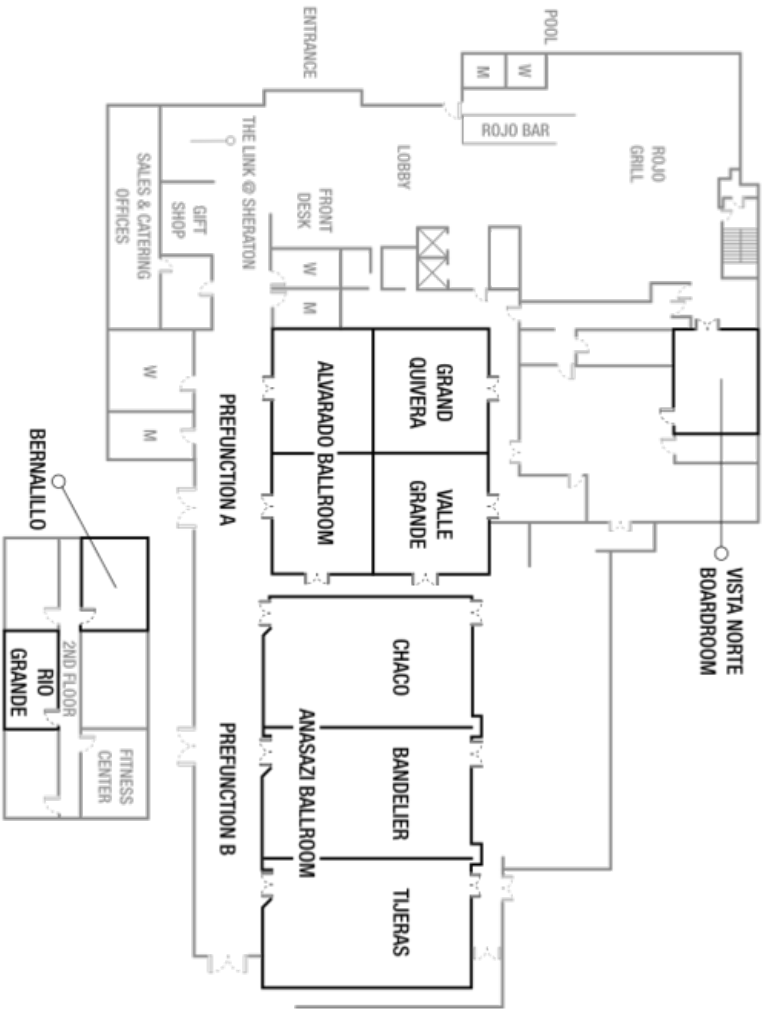
**51.** DLSCORE: Deep Learning model for predicting protein-ligand binding affinities. **M. Hassan**, D. Mogollon, O. Fuentes, S. Sirimulla

**52.** New Mexico Highlands University Chemistry Club. **E.M. Trujillo**

**53.** Lobo Chemistry Club: American Chemical Society student chapter at University of New Mexico. **N.A. Abeyta, C. Hunter, F. Delacruz, G. Carrion-Gonzales, L. Perez**

**54.** Get involved with the ACS Division of Chemical Education. **M.A. Horn**

# MEETING ROOMS



## Schedule at a Glance for Friday, October 26, 2018

<b>7:30 am</b>	<p><b>Registration opens</b> <b>Ballroom Foyer area</b></p> <p><b>Complimentary Continental Breakfast</b></p> <p><b>Poster presenters may put up posters in Tijeras.</b> <b>Oral presenters should arrive early to their session for setup.</b></p>		
<b>9:00 am</b>	<b>Organic Chemistry</b> <b>Chaco</b>	<b>General Chemistry</b> <b>Gran Quivera</b>	<b>Inorganic Chemistry</b> <b>Valle Grande</b>
<b>10:05 am</b>	<b>intermission</b>	<b>intermission</b>	<b>intermission</b>
<b>10:30 am</b>	<b>Organic Chemistry</b> <b>Chaco</b>	<b>General Chemistry</b> <b>Gran Quivera</b>	<b>Inorganic Chemistry</b> <b>Valle Grande</b>
<b>11:45 am</b>	<p><b>Complimentary Lunch</b> <b>Bandelier</b></p> <p><b>Green Chile Chicken Enchiladas</b></p>		
<b>1:15 pm</b>	<b>Analytical Chemistry</b> <b>Chaco</b>	<b>Physical Chemistry</b> <b>Gran Quivera</b>	<b>Inorganic Chemistry</b> <b>Valle Grande</b>
<b>2:50 pm</b>	<b>intermission</b>	<b>intermission</b>	<b>intermission</b>
<b>3:15 pm</b>	<b>Analytical Chemistry</b> <b>Chaco</b>	<b>Physical Chemistry</b> <b>Gran Quivera</b>	<b>Inorganic Chemistry</b> <b>Valle Grande</b>
<b>6:00 pm</b>	<p><b>Poster Session &amp; Reception</b> <b>Bandelier &amp; Tijeras</b></p> <p><b>Complimentary Heavy Appetizer Selection</b></p> <p><b>The Lobo (UNM) Chemistry Club is organizing a contest for poster session attendees with prizes to be awarded.</b></p>		
<b>8:00 pm</b>	<p><b>End of 2018 ACS RMRM</b></p> <p><b>Please remove all posters from boards</b></p> <p><b>Safe travel to all</b></p>		