

# **SCALACS**

Website address: www.scalacs.org November/December 2011

A Joint Publication of the Southern California and San Gorgonio Sections of the American Chemical Society



Southern California Section Hosts the Western Regional Meeting at the Westin in Pasadena November 10-12, 2011

100 Years of Outstanding Chemistry in Southern California!

Centennial Banquet November 11, 2011

See Page 3

#### San Gorgonio Section

2011 SCC Undergraduate Research Conference Saturday, November 19, 2011 Mount San Antonio College

See Page 15

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# **SCALACS**

# A Joint Publication of the Southern California and San Gorgonio Sections of the American Chemical Society

Volume LXIV November/December 2011 Number 7

## **SOUTHERN CALIFORNIA SECTION 2011 OFFICERS**

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#### Chair's Message

"It doesn't take much to make a strong, positive impact on someone else's life!"

Earlier this year, I drew on the wisdom of a famous basketball coach for this space. As deadline for this month's issue approached, I thought to have a look at what was written by last year's chair, who penned that message just weeks before his passing. After doing so, it seemed fitting to

close the year with the wisdom of our own Paul Shin, to whose memory I dedicated my year of service.

"During this holiday season, please take the time and effort to express your gratitude to all those who have made a sincere effort to improve your life or for those around you and you too will benefit from your altruism!"

On page ?? of this issue we tried to thank all those who volunteered their time in service on behalf of the rest of us in the Section. If the dues are the life-blood of our organization, the volunteers are the hands and feet that actually do the work. This year, in addition to our usual activities, we participated in the International Science and Engineering Fair with a dozen volunteers as Special Award Judges and booth staffers. Their reports testify to the power of that event. A special thanks goes to Howard Peters, whose fundraising, advice and encouragement made possible a fuller participation for our local section.

"True friends are those willing to put any amount of time and effort in expressing their concern and support for what we go through in life."

The Western Regional Meeting taking place this month in Pasadena has taken up a great deal of the time and energy of our members. While a host of volunteers worked tirelessly to make this meeting a befitting 100<sup>th</sup> Anniversary Celebration, I would like to single out Jim Kilgore, Bob de Groot, and Chris Brazier, all of whom put forth a tremendous effort to make this a success. I hope to see you in Pasadena!

Finally, as I pass the gavel to Bob de Groot, I will let the words of Paul Shin express my gratitude for Bob's support and pay tribute to his efforts:

Not only has he been a good friend, Bob is an outstanding representative for the power of volunteerism! Through his Section leadership and service, Bob has demonstrated an unswerving dedication to our outreach programs and supported others' outreach efforts as well. His efforts are well summarized in a quote from Buddha: "Teach this triple truth to all: A generous heart, kind speech, and a life of service and compassion are the things which renew humanity."

- Joe Khoury, Chair

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#### **Section Dinner Meeting**

# Centennial Banquet and Panel Discussion Friday, November 11, 2011

#### Westin Hotel Fountain Ballroom

191 North Los Robles Pasadena, CA, 91101

Check-in: 7:30 pm
Dinner: 8:00 pm
Panel Discussion & Regional Award Presentations immediately following dinner

The Southern California Section of the American Chemical Society is hosting the 43rd Annual Western Regional Meeting at the Westin Hotel in Pasadena November 10-12, 2011. We will be celebrating our 100th anniversary as a Section with a banquet and a panel discussion led by distinguished Southern California chemists. The discussion will provide personal insights on the people, organizations and events in recent decades which exemplify chemistry in our region. The panel participants are Herb Kaesz (UCLA), J. D. Roberts (Caltech), Rudy Marcus (Caltech), and Arthur Riggs (City of Hope). We will also be honoring award recipients of the Ann Nalley Regional Award for Volunteerism and the Regional High School Teacher of the Year.

The banquet is preceded by the Undergraduate Poster Session and Reception. Please note that unless you are registered for the meeting, you may not attend this reception (free to meeting attendees). Registration is available at www.wrmacs.org/registration11.html. Early registration closed October 21st, but you can still register.

**Cost:** There is a choice for dinner of Slow Roasted Prime Rib of Beef, or Salmon Provencal. The cost is \$65 including salad, dessert, tax, tip and wine with dinner. Vegetarian entrée available upon request.

**Reservations:** Please call Nancy Paradiso in the Section Office at 310 327-1216 or email office@scalacs.org by Friday, November 4, 2011.

**Directions:** The hotel is located right off the 210 freeway on South Los Robles Avenue. Driving directions are available at http://www.starwoodhotels.com/westin/property/area/map.html?propertyID=1453



# Celebrating 100 Years of Outstanding Chemistry in Southern California!

#### 43<sup>rd</sup> Western Regional Meeting November 10-12, 2011 Pasadena Westin Hotel, Pasadena, CA

Sponsored by the Southern California Section www.wrmacs.org

The long-awaited Western Regional Meeting is upon us. Here is the fantastic program that we have scheduled:

#### Thursday, 11/10/11, 1:00 - 4:30

Systems Biology

Physical Organic Chemistry (12:45—3:25 pm)

Poster Sessions: Medicinal Chemistry, Nuclear Chemistry, Polymer Chemistry

Way Beyond Plastic - the Powers of Modern Materials

Innovative Monitoring & Remediation Technologies for Contaminated

Groundwater and Soil

History of Chemistry, A California Perspective - Harold Goldwhite

Chemistry of Wine - Sensory & Flavor Effects of Wine Constituents - Henry Abrash

Organic Synthesis in Traditional and Nontraditional Media

#### 6:00 - Legacy of Arnold Beckman Symposium Reception

## 7:00 - Beckman Legacy Symposium Lectures: Gerald Gallwas (Beckman Instrument Corp.) and Leroy Hood (Institute for Systems Biology)

#### Friday, 11/11/11, 8:00 - 10:30 am sessions

Structural Biology of Proteins at Cell Surfaces

Green Chemistry

Peptide Therapeutics - Perspectives and Current Outlook Microfluidics & Other Highly-Multiplexed Techniques for Bioanalysis

Non-invasive Drug Imaging

Organic Synthesis

Posters: Analytical, Biological, Chemical Education, Inorganic, Organic (synthetic, organometallic, prep), Polymeric and Structured Materials

(Continued on Page 5)

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Western Regional Meeting (Continued from Page 4)

Friday (Continued)

10:45 - AM Plenary David Tirrell (Caltech) - Reinterpreting the Genetic Code: Non-Canonical Amino Acids in Protein Design, Evolution and Analysis

12:15 - Governance Luncheon

1:45 - 4:15 pm sessions

Solid State Materials for Energy Applications Organo-metallics

Trans-Metal Complexes as Bio-Functional Materials

Biotechnical Approaches - Feedstocks and Processes for Biofuel Production Biomolecular Engineering and Design of Drug Carriers

Natural Products Chemistry - Standardizing Approaches for Analysis of Ingredients and Adulterants

Atmospheric Chemistry Throughout the Solar System

Posters: Analytical - bioanalytical, Biological - macromolecules and physiology, Computational, Geological Chemistry, Organic - physical organic and structural studies

4:30 PM Plenary Mark Thompson (USC) - Organic Photovoltaics

6:00 Undergraduate Poster Session and Reception, History of Chemistry Posters

8:00 Centennial Banquet celebrating 100 years of Outstanding Chemistry in Southern California featuring a panel discussion with Herb Kaesz (UCLA), J. D. Roberts (Caltech), Rudy Marcus (Caltech), and Arthur Riggs (City of Hope)

Saturday, 11/12/11, 8:30 - 12:15 am sessions

Chemical Reactivity through Computational Chemistry - Ken Houk (UCLA) Career Services (9:00 am start)

Undergraduate Careers

"So You Want To Start A Company?" (8:15 am start)

Enhancing Student Success through Programmatic and Curriculum Innovation (Continued on Page 6)

#### Western Regional Meeting (Continued from Page 5)

Saturday, am sessions (Continued)

Inquiry Chemistry Experiences for Elementary Students

1:30 - Huntington Library Visit for Undergraduate Students

1:00 - 4:00 pm sessions

Inquiry Chemistry Experiences for Middle School Students NSF Programs which support undergraduate education

As you can see, we have a full schedule of exciting programs. We look forward to seeing you there!

Make your plans now—
a meeting like this comes once a century!
www.wrmacs.org

Chris Brazier and Bob de Groot,
 Co-chairs of the 2011 Western Regional Meeting

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# Congratulations! Prof. Jacqueline Barton receives National Medal of Science

Jacqueline K. Barton, a Caltech chemistry professor who has pushed the boundaries of DNA research, has been awarded the National Medal of Science, becoming the first woman at the Pasadena campus to receive what is considered the U.S. government's highest honor to scientists.

Barton was one of seven recipients of this year's medal, a prize that her husband, Peter Dervan, also a Caltech chemist, won in 2006. Administrators of the prize, which was first awarded in 1962, said they were not aware of any other husband and wife who had both received it.

The White House cited Barton for the discovery of a new property of the DNA helix and experiments on long-range electron transfers. She has built electrical sensors capable of detecting DNA mutations and proteins that can distort it, experiments that may aid research into colon and breast cancer, officials said.

"It is an extraordinary honor. It means a lot to me and is more than I ever expected," Barton, 59, said Tuesday. She said the award was even more meaningful because her husband had also won it; the couple plan to display the medals side by side above the fireplace at their San Marino home.

Barton is the 40th woman to receive the medal, which has been awarded to 435 men over the years, according to the National Science Foundation. Barton said she hoped the many women she has taught at Caltech will help raise the number of such winners in the future.

"The real goal is that for their generation no one will even have to mention that," she said, referring to gender. "It won't be a big deal."

Born in New York, Barton earned her doctorate in chemistry at Columbia University. She joined the Caltech faculty in 1988 and now heads the university's division of chemistry and chemical engineering. Barton's previous awards include a MacArthur Foundation grant and the Richard C. Tolman Medal in 1994.

#### Thanks to all 2011 Volunteers

The many programs and services that your Section provides are accomplished by the volunteers of the various committees. We would like to acknowledge and thank all of you who volunteered your time and talents during this year.

Chair: Joe Khoury Chair Elect: Bob de

Groot

Secretary: Aleksandr

Pikelny

Treasurer: Barbara

Belmont

**Elected Members of** Barbara Gonzalez **Executive Committee:** Dorothy Nguyen-Graff

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Brian Brady
Bill Harter
Virgil Lee
Yumei Lin
Derek Marin
Armando Rivera
Tieli Wang
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Henry Abrash Devin limoto Joe Khoury Virgil Lee

Sofia Pappatheodorou

Maria Tellez

Agnes Ann Green Award

Bob de Groot, Chair

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Eleanor Siebert, Chair Barbara Belmont Barbara Gonzalez Dorothy Nguyen-Graff

Diana Yu Mount St. Mary's Student Chapter (WISH) CSUN Students

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Dorothy Nguyen-Graff Barbara Sitzman

**High School Olympiad** 

Gerald Delker, Chair Henry Abrash Barbara Belmont Bob de Groot Paul Groves Tom LeBon Derek Marin Michael Morgan Eleanor Siebert Barbara Sitzman Community Activities: NCW, CCED & others Robert de Groot, Chair

Henry Abrash David Abrecht Jackie Barton Barbara Belmont

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Jodye Selco
Eleanor Siebert
Barbara Sitzman
David Tirrell
Aaron Varga
Tameka Watson
Jasmine Wills

Diana Yu

(Continued on Page 7)

#### Thank You List (Continued from Page 6)

#### **Community Activities** (Continued)

**ACS Student Chapters:** WISH Organization at Mt. St. Mary's College Chemistry Club - Cal State Gerald Delker Los Angeles Chemistry Club - Cal State Tom LeBon Northridge Chemistry Graduate Students—Caltech Science Society—Cal State Dominguez Hills Science Club - East Los

#### **Organizations** Supporting Section **Community Activity** Efforts:

Angeles College

ACS Office of Volunteer Support ACS Office of Public Affairs Randy Dingwall California Science Center - Oral Caglar Los Angeles Cal State University, Los Angeles - Department of Chem. & Biochem. Cal State University. Northridge - Department of Chemistry East Los Angeles College

Chemistry Department

#### International Science and Engineering Fair Lead Judge: Paul Bracher

Henry Abrash Brian Brady Bob Cohen James Kilgore Yumei Lin **Howard Peters** Aleksandr Pikelnv Maria Silva William Welker Daniel Yarbrough

#### **Boy Scout Jamboree:**

Derek Marin and Gerald Delker—Coordinators John Ernest Crystal Valdez Kimo Yap Linda Geddes Amy Nielsen Allison Rhodes

#### **Publication Committee**

Barbara Belmont Harold Goldwhite Jim Kilgore Eileen DiMauro, SG Eleanor Siebert

Steevens Alconcel

#### Nominations. **Elections** & Awards

Barbara Belmont Brian Brady

#### Senior Chemists

Henry Abrash, Chair Norman Bilow Norman Juster

#### Science in the Cinema

Tom LeBon Bob de Groot Eleanor Siebert

#### **Tolman Award**

Doug Tobias, Chair Confidential list, but you know who you are!

#### Undergraduate Research Conference Henry Abrash,

Chair Kalju Kahn, UC Santa Barbara

#### Webmaster Barbara Belmont

As you can see, it takes a lot of people's time and efforts to make our programs work. We as a Section, and the community at large. sincerely appreciate the dedication of these people and invite you to participate if you haven't already! This Section would be nothing without your volunteer efforts.

We tried to get everyone on the list, if we missed you, please accept our thanks for a job well done!

# Second Call for Nominations 2011 Richard C. Tolman Medal

The Tolman Medal is awarded each year by the Southern California Section of the American Chemical Society in recognition of outstanding contributions to chemistry. These contributions may include achievements in fundamental studies; achievements in chemical technology; significant contributions to chemical education; or outstanding leadership in science on a national level. The nominee need not be a Southern California resident; however, most of the award-related accomplishments must have been made in this area.

The Southern California Section of the American Chemical Society and the Tolman Award Committee are now seeking nominations for the 2011 award. There is no official nominating form for this award; nominations are accepted from any member of this Section or of cooperating Sections. The nomination package should include:

- an up-to-date curriculum vitae or resume of the candidate
- letters of support from colleagues in the profession describing the candidate's major achievements
- if the candidate is being considered for outstanding teaching, letters of support from former students should be included.

It is preferred that nomination packages be electronically transmitted to the Chair of the Tolman Committee at **office@scalacs.org**. We are also deleting the requirement for copies of publications. Rather, a list of representative publications would suffice. *The deadline for receipt of nominations is December 15, 2011.* Inquiries should be directed to the Chairperson at (310) 327-1216 or via e-mail at office@scalacs.org. A list of winners appended here demonstrates the caliber of awardee sought by the committee.

1963         W. Conway Pierce         1980         Herbert D. Kaesz         1991           1964         A.J. Haagen-Schmidt         1981         Paul D. Boyer         1996           1965         Thomas Doumani         1982         Donald T. Sawyer         1999           1966         Arthur W. Adamson         1983         James N. Pitts         200           1967         Ulrich B. Bray         1984         Donald C. Cram         200           1968         Francis E. Blacet         1985         Arnold O. Beckman         200           1969         Robert Vold         1986         M. Frederick Hawthorne         200           1970         Robert L. Pecsok         1987         Clifford A. Bunton         200           1971         Roland C. Hansford         1988         John D. Baldeschwieler         200           1972         James Bonner         1989         Mustafa A. El-Sayed         200           1973         Howard Reiss         1990         Linus Pauling         200           1974         John D. Roberts         1991         George A. Olah         200           1975         Corwin Hansch         1992         Peter C. Ford         200	6 Larry R. Dalton 7 Ahmed H. Zewail 8 Kendall N. Houk 9 Peter Dervan 0 William A. Goddard III 1 Peter M. Rentzepis 2 Robert H. Grubbs 3 Arieh Warshel 4 Christopher Reed 5 Fred Wudl 6 G. K. Surya Prakash 7 Barbara Finlayson-Pitts 8 Joan S. Valentine 9 Richard B. Kaner 0 Dennis Dougherty
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#### LECTURER POSITION IN BIOCHEMISTRY

The Department of Chemistry and Biochemistry at UCLA seeks applications for a lecturer in the area of Biochemistry for a full time position starting in the winter quarter (January) of 2012. Responsibilities will include lecturing, conducting regularly scheduled office hours, writing and grading exams and problem sets, and supervising teaching assistants. Qualified candidates will have a Ph.D. in biochemistry or related field and have significant prior experience in teaching large biochemistry courses at the college level. Candidates should provide a *curriculum vitae* and a statement of teaching philosophy (*ca.* 1 page), and should arrange for 3 letters of reference to be sent separately. The materials should be sent to:

Biochemistry Lectureship Search Committee
Office of the Chair
UCLA, Department of Chemistry & Biochemistry
Box 951569
Los Angeles, CA 90095-1569

OR as a single PDF file via email to jobs@chem.ucla.edu.

Review of applications will begin immediately and will continue until the position is filled. The University of California is an equal opportunity/ affirmative action employer.

# Second Call for Nominations OUTSTANDING HIGH SCHOOL CHEMISTRY TEACHER OF THE YEAR AWARD

If you know of a local high school chemistry teacher who is making a difference, please make the effort to show how important his/her work is to you and the students. Nomination Package should include: Biographical sketch of nominee with date of birth, list of any publications, statement (no more than 1,000 words) of nominee's achievements as a high school level chemistry teacher. Seconding letters are not required, but up to five may be included. **Nominating documents may be submitted via email to office@scalacs.org.** Note that signed documents that have been scanned are acceptable.

The deadline for nominations is **November 15th, 2011**. Please feel free to contact Dr. Gerald Delker of the Educational Affairs Committee at delker@earthlink.net if you have any questions.



#### **This Month in Chemical History**

Harold Goldwhite, California State University, Los Angeles hgoldwh@calstatela.edu

I am writing this column in late September 2011 and I am somewhat preoccupied with some presentations I plan to make at the Western Regional Meeting of the American Chemical Society in Pasadena, California in November 2011. One of those presentations is about "100 years of teaching chemistry" since the meeting is, in part, in celebration of the centennial of the Southern California Section. I hasten to add that I have not been teaching chemistry for100 years, though sometimes it feels like it; I have only a mere half-century of teaching chemistry under my belt. But thinking about the last century, and scanning my bookshelves for some useful source material, I came across a book entitled "The Teaching of Science" by John F. Woodhull Ph.D., Professor of Physical Science at Teachers College, Columbia University. This was published in 1918 by The Macmillan Company in New York and is only 7 years short of a century old.

John Francis Woodhull was born in 1857 and died in 1941. Googling his name didn't give me much other biographical information, beyond the fact that at one time he was Acting President of Teachers College. But it did give me some idea of his range as an author. In this column I will examine his views on teaching science primarily in K-12. In my next column I will look at some of his many other articles and books on teaching science.

"The Teaching of Science" is a collection of addresses and papers by Woodhull from the 1890s to 1918. The titles of some of its chapters in the chronological order in which they appear give a flavor of the book's contents. These include "The Educational Value of Natural Science"; "Modern Trend of Physics and Chemistry Teaching"; "The Intensive Method in Chemistry"; "Science for Culture"; "Practical Chemistry"; "Science Teaching by Projects"; "The High-school Situation"; and "The Imitation of the Masters".

An analysis of this last chapter, "The Imitation of the Masters" gives a strong impression of Woodhull's thinking about teaching science - thinking that I venture to say is forward looking even nearly a century after it was first expressed. Mind you, as a practitioner of the history of chemistry my reaction to Woodhull may be biased. See what you think.

He is a powerful proponent of the project method. "Are students in schools and colleges made into scientists by learning the so-called fundamental (Continued on Page 13)

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#### **This Month in Chemical History**

(Continued from Page 12)

facts, or by practicing the methods of a scientist in finding the solution of real problems?" "We sometimes hear it said that one cannot teach applications of physical principles until the principles themselves are understood. I wish to contend that only the converse of this proposition is true. That is we cannot teach the principles of physics except through an experience with their applications."

Woodhull also asserts (and I happen to agree) that students of science should read and report on biographies of scientists, and popular accounts of science written by scientists. "The great masters of science, Galileo, Faraday, Pasteur, Darwin, etc. illustrated in their lives and works the project method". He recommends reading a biography of Pasteur, e.g. "The Life of Pasteur" by Rene Vallerey-Radot, Pasteur's son-in-law, for a host of illustrations of the project method.

The project method, that is hands-on science, has somewhat come back into favor in the past few decades. The work of Woodhull, long forgotten, shows that truly there is nothing new under the sun.



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#### San Gorgonio Section



#### Chair's Message

This is my last Chair's message, so it seems appropriate that I acknowledge and thank the members of the Executive Board who have provided invaluable assistance during my tenure as Chair. **Ernie Simpson** (Section Councilor) has been an incredible resource. Anytime I asked for information, Ernie would look into his "magic" bag, which I am convinced

contains everything there is to be known about our Section. He also knows the answer to most ACS questions or can direct us to who will know the answer. **Dennis Pederson**, in addition to being a wonderful treasurer, has an incredibly extensive list of contacts in a variety of interesting scientific fields. These contacts are willing to share their knowledge, skills and expertise, usually just for the price of dinner! **David Srulevitch** (Section Secretary) has been the epitome of organization, producing and distributing minutes quickly after meetings, a novelty in our Section! His much-appreciated mantra for any proposed endeavor is "let me know what I can do". **Kathy Swartout** (Chair Elect) has been an exemplary problem solver. Her approach to any challenge was to break it down into manageable chunks and devise ways to manage those chunks. **Jim Hammond** (Section Councilor) has been the motivation for keeping some level of focus on the one task we have struggled to get done – updating our Bylaws. Thanks to his dedication, this task is nearing completion.

I would also like to acknowledge a few other people who have made significant contributions to our Section. **Michael Page** has done a brilliant job managing the High School Olympiad program for the past several years. He has handled this office with enthusiasm and grace, providing inspiration and encouragement to scores of high school students. **Joelle Opotowsky** has made National Chemistry Week more attractive. She would arrive in advance of the event with a plethora of stickers, pencils and other mole-based public-pleasing items that helped make our NCW celebrations a success. My extensive thanks also go to **Nancy Paradiso** and her infinite patience and gentle reminders regarding missed deadlines for newsletter items. And finally, I would like to thank **Pat Perez** who was always willing to lend an ear and support, usually over a plate of pancakes, as I struggled to do justice to the position of Chair.

Since this is the last newsletter of the year, I would like to call everyone's attention to upcoming events in the San Gorgonio Section, some already scheduled and some whose details are pending.

#### **November and December 2011**

The **Bruce Nelson Speaker Series** at Harvey Mudd College has two more lectures scheduled for this year. Go to http://www.hmc.edu/newsandevents/nelson-series-start-2011.html for more information.

(Continued on Page 16)

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#### San Gorgonio Section

# 2011 SCC Undergraduate Research Conference Saturday, November 19, 2011 Mount San Antonio College Walnut, CA

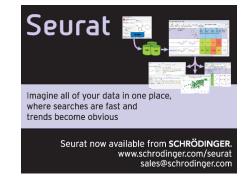
The 2011 SCCUR conference will take place on the beautiful campus of Mt. San Antonio College (Mt. SAC) in Walnut. Mt. SAC will be hosting the 19th annual Southern California Conference for Undergraduate Research and is proud to be the first community college to host this exciting event. The theme of the 2011 conference is "Ascending the Summit of Discovery".

The day-long conference, held annually, provides a forum for the presentation of the best research, scholarship, and creative activities of Undergraduate students in the region. SCCUR is broadly multi-disciplinary, including the arts, humanities, social sciences, natural sciences, and applied sciences. Students present their scholarly work either in 15-minute seminar presentations chaired by faculty moderators, in poster sessions, or in exhibition or performance. Students apply to present their work by submitting a proposal in the form of a brief abstract, limited to 300 words. The Abstract deadline was October 3rd, and we have received over 500 Abstracts that are being reviewed by faculty from appropriate disciplines at participating institutions and accepted, returned for revision, or declined. Further details about the conference are provided in the conference website at: http://sccur2011.mtsac.edu



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#### San Gorgonio Section

#### Chair's Message (Continued from Page 14)

#### November 2011

The Southern California Conference for Undergraduate Research (SCCUR) will be held November 19. SCCUR provides a forum for the presentation of research, scholarship, and creative activities of undergraduate students in the region. See http://sccur2011.mtsac.edu for more information.

Upcoming events for 2012. Check upcoming SCALACS and the San Gorgonio Section website for details.

January/February 2012 – The second Laboratory Support Workshop will be held at Mt San Antonio College.

May 2012 – The Chevy Goldstein Distinguished Lecture and Student Research Awards Symposium will be held at Cal Poly, Pomona.

 Eileen DiMauro Section Chair

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