Calendar of Events

JANUARY 2013

Los Angeles Chapter General Meeting
Tuesday, January 15: Dr. Danny Olivas, Former Astronaut, “Materials Systems for Extreme Environmental Protection - Space and Entry, An Astronaut’s View”, Truxton’s, Westchester, 5:30 pm

Orange Coast Chapter General Meeting

San Fernando Chapter General Meeting
Thursday, January 24, Plant Tour, Pacific Testing Laboratories, Valencia, 7 pm

Temecula ASM-ASCE-NACE Dinner Meeting
Thursday, January 31: Mark Norton, Santa Ana Watershed Project Authority, “Finding Opportunities for Water Infrastructure”, Temecula, 5:30 pm

FEBRUARY

Los Angeles Chapter General Meeting
Tuesday, February 21: Tour of NASA Jet Propulsion Laboratory, Pasadena, 1 pm (reservations required)

Orange Coast Chapter General Meeting
Wednesday, February 20, Holley Dickmeyer, SpaceX, “SpaceX: An Overview and What’s Coming Next”, 6 pm Duck Club, Irvine

San Fernando Chapter General Meeting
Thursday, February 24, TBD

Temecula ASM-ASCE-NACE Dinner Meeting
Thursday, February 28, 2013: Matt Francis – MIC (Bacteria) Corrosion Mitigation, Temecula

JUNE

ASM Scholarship Golf Tournament, Monday, June 3, 2013, Candlewood CC, contact Dick Berryman 626-812-1907 or Richard.berryman@ngc.com

AUGUST

Materials Camp for Teachers, CSULB, 12-16 August
ASM International San Fernando Valley Chapter Presents January 2013 Meeting

San Fernando Valley Chapter Event Details

<table>
<thead>
<tr>
<th>WHAT:</th>
<th>Plant Tour of Pacific Testing Laboratories</th>
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<tbody>
<tr>
<td>WHERE:</td>
<td>Pacific Testing Laboratories, Inc. 24950 Avenue Tibbitts Valencia, CA 91355-3426 Phone: 661-257-1437 <a href="http://www.pacifictesting.com">www.pacifictesting.com</a></td>
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<tr>
<td>TIME:</td>
<td>7 pm</td>
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<tr>
<td>WHEN:</td>
<td>Thursday, January 24, 2013</td>
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<tr>
<td>COST:</td>
<td>Free. Sandwiches and drinks will be provided</td>
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<tr>
<td>RSVP:</td>
<td>Efrem Escobar 818-767-6213 or <a href="mailto:efrem@thermaltechnologies.net">efrem@thermaltechnologies.net</a></td>
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Pacific Testing Laboratories is located in Valencia, California, approximately 45 miles north of the Los Angeles International Airport. Our facility is a 16,000 square foot laboratory, dedicated solely to testing services. Within our building are several environmentally controlled testing laboratories. Each lab is, by the nature of the equipment therein, generally used for the particular classes of testing.

Pacific Testing Laboratories offers a very comprehensive range of testing services to the Printed Circuit Board (PCB), Aerospace, Automotive, Plastics, Composites, Rubber, Metals, Wood Flooring, Electronic Device, and Medical Device industries. Our expertise extends to many fields, including: Electrical, Optical, Mechanical, Environmental, Metallurgical, Chemical, Thermal, Physical, Analytical, Forensic, and Failure Analysis.

San Fernando thanks its Sustaining Members

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<td>California State University Northridge</td>
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<td>MTI Metals Technology, Inc.</td>
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<tr>
<td>PACIFIC TESTING LABORATORIES, INC.</td>
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Interested in being a speaker or serving as an Executive Committee Officer? Please contact us for more information.

Keep an eye out for the launch of our new chapter website in January.
Los Angeles Chapter
January 2013 Meeting

Materials Systems For Extreme Environmental Protection - Space and Entry, An Astronaut's View

Danny Olivas
NASA Astronaut (Former)

Abstract: One of the most aggressive and unforgiving environments ever explored by humans is that of space. For over 50 years, astronauts have relied on materials systems to protect them from this most extreme of all environments. From attack by monatomic oxygen and cosmic radiation on orbit, to the searing heat experienced by vessels as they bring home safely their payloads, space vehicles must withstand a multitude of stressing factors to successfully accomplish their missions. The presentation will cover the challenges faced during the recently retired space shuttle program which were only further complicated following the Columbia disaster in 2003. Now in the history books, the lessons learned are applicable in today’s burgeoning commercialization effort and will pave the way for safer spacecraft.

Biography: John “Danny” Olivas was born in North Hollywood, California, in 1966, and raised in El Paso, Texas. He received a BS in Mechanical Engineering from the University of Texas at El Paso; an MS in Mechanical Engineering from the University of Houston and a PhD in Mechanical Engineering and Materials Science from Rice University. After graduating with his undergraduate degree, Olivas worked for the Dow Chemical Company as a mechanical/materials engineer responsible for performing equipment stress/failure analysis for the operating facilities. Upon completing his master’s degree, Olivas pursued his doctorate while supporting engine coating evaluations for C-5 maintenance operations at Kelly Air Force Base. He also supported the Crew and Thermal Systems Directorate at NASA Johnson Space Center, evaluating materials for application to the next generation space suits. Upon completing his doctorate, he received a senior research engineer position at the Jet Propulsion Laboratory (JPL) and worked in the development of tools and methodologies for nondestructively evaluating microelectronics and structural materials subjected to space environments. He was promoted to Program Manager of the JPL Advanced Interconnect and Manufacturing Assurance Program, aimed at evaluating the reliability and susceptibility of state-of-the-art microelectronics for use in future NASA projects. Throughout his career, he has authored and presented numerous papers at technical conferences and in scientific journals. NASA selected Olivas in 1998 to receive Astronaut Training, which included orientation briefings and tours, numerous scientific and technical briefings, intensive instruction in Shuttle and International Space Station systems, physiological training and ground school to prepare for T-38 flight training, as well as learning water and wilderness survival techniques. From 1999 to 2002, he was assigned technical responsibilities within the Robotics Branch as lead for the Special Purpose Dexterous Manipulator Robot and the Mobile Transporter. From 2002 to 2005 he was assigned to the EVA Branch and supported the research effort focused on developing materials, tools and techniques to perform on-orbit shuttle repair. In 2006, he served as lead of the Hardware Integration Section of the Space Station Branch, responsible for ensuring proper configuration and integration of future station modules and visiting vehicles. In 2007 he flew on STS-117 logging 336 hours in space including over 14 EVA hours. In 2008 he was assigned to the Capsule Communicator (CAPCOM) Branch that is responsible for all interface with the flight control team at Mission Control in Houston and the on-orbit STS and ISS crews. In 2009 he served aboard STS-128 and has a cumulative total of over 668 hours in space and over 34 EVA hours. Olivas retired from NASA on May 25, 2010.

SPACE FLIGHT EXPERIENCE:

STS-117 Atlantis (June 8-22, 2007) was the 118th Shuttle mission and the 21st mission to visit the International Space Station, delivering the second starboard truss segment, the third set of U.S. solar arrays, batteries and associated equipment. The mission also entailed the first ever on-orbit EVA repair to the Space Shuttle, Atlantis. During two spacewalks, Olivas accumulated 14 hours and 13 mins of EVA experience. The mission also delivered and returned with an expedition crew member. STS-117 returned to land at Edwards Air Force Base, California, having traveled more than 5.8 million miles in 13-day, 20 hours and 20 minutes.

STS-128 Discovery (August 28 to September 11, 2009) was the 128th Shuttle mission and the 30th mission to the International Space Station. While at the orbital outpost, the STS-128 crew rotated an expedition crewmember, attached the Leonardo Multi-Purpose Logistics Module (MPLM), and transferred over 18,000 pounds of supplies and equipment to the station. During three spacewalks, Olivas accumulated 20 hours and 15 mins of EVA experience. The STS-128 mission was accomplished in 217 orbits of the Earth, traveling over 5.7 million miles in 332 hours and 53 minutes and returned to land at Edwards Air Force Base, California.

He holds six U.S. Patents and received four NASA Class One Tech Brief Awards; five JPL-California Institute of Technology Novel Technology Recognitions, the McDonald’s Hispanics Triunfadores Life Time Achievement Award, a NASA ASEE Summer Faculty Fellowship Award, the Dow Life Saving Award, and is a University of Texas-El Paso Distinguished Alumnus and HENAAC Most Promising Engineer. Recreational interests include running, weightlifting, hunting, fishing and surfing.

Meeting Details

<table>
<thead>
<tr>
<th>WHAT:</th>
<th>ASM LA Chapter Meeting</th>
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<tbody>
<tr>
<td>WHO:</td>
<td>John “Danny” Olivas, NASA Astronaut (Former)</td>
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<tr>
<td>WHERE:</td>
<td>Truxton’s American Bistro</td>
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<tr>
<td>8611 Truxton Avenue, Los Angeles, CA</td>
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<tr>
<td>TIME:</td>
<td>5:30 pm Social Hour</td>
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<tr>
<td>6:30 pm Dinner</td>
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<tr>
<td>7:30 pm Presentation</td>
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<td>WHEN:</td>
<td>Tuesday, January 15, 2013</td>
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<tr>
<td>COST:</td>
<td>$20 for pizza and beverages, Students: $5</td>
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<tr>
<td>R.S.V.P.</td>
<td>Andrew Kent, <a href="mailto:Andrew.Kent@ngc.com">Andrew.Kent@ngc.com</a></td>
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<tr>
<td>(626) 812-1502</td>
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ASM – ASCE – NACE TEMECULA COMBO MEETING

January 31, 2013 Thursday Dinner Meeting

**Topic:**
“Funding Opportunities for Water Infrastructure”

By: Mark Norton, PE, Santa Ana Watershed Project Authority

**TIME:**
5:30 PM Social Hour  6:00 PM Dinner
6:30 PM Program      7:00 PM Adjourn

**Location:**
Pat & Oscar’s, 29375 Rancho California Road, Temecula, CA
(951) 695-2422 Cost: $20.00

**MENU:**
Pizza, Chicken, Salads

**PLEASE RSVP** by Wednesday, Jan 30, 2013 but walk-ins are welcome.
Contact Eddie Hernandez to RSVP via email at ehernandez@vglabs.com

Presentation attendance counts for
(1) professional development contact hour.

Come learn about funding opportunities to support water infrastructure through the integrated regional water management programs and plans.

Mr. Norton holds a Bachelors of Science in Civil Engineering and a Masters in Public Administration.

Mr. Norton serves as the Water Resources and Planning Manager for the Santa Ana Watershed Project Authority (SAWPA), and as the Authority Administrator for the Lake Elsinore and San Jacinto Watersheds Authority (LESJWA). Mr. Norton currently serves as a ASCE Region 9 (California) Governor and Chair of the ASCE Region 9 Water & Environment Committee.

Join our emailing list by e-mailing
Temecula-Valley-Engineering-Meetings@googlegroups.com and visit
Schedule for January 16th:
When: 6:00PM Dinner & Technical talk follow
Where: Irvine Duck Club
5 Riparian View
Irvine, Ca 92612
Cost: ASM members-free!
Non-Members- please contact.

Upcoming Events:
February 20th – Holley Dickmeyer, SpaceX, “SpaceX: An Overview and What’s Coming Next”
March 20th – Arvind Midha
Carpenter Technologies, “Materials Selection in Biomedical Application”
April 17th – Dr. Sanjai Shrivastava, Covidian Inc., “Materials and Design Considerations in Developing Medical Devices for treating Cerebro-vascular Aneurysms and Stroke”

January 16th Program
Nanocrystalline Metallurgy:
Taking Advantage of Novel Deformation Physics
Professor Tim Rupert,
University of California, Irvine

When attempting to improve the mechanical properties of traditional microcrystalline metals, one introduces obstacles to dislocation motion using the principles of physical metallurgy. However, nanocrystalline metals, polycrystals with average grain sizes less than 100 nm, do not deform through traditional dislocation mechanisms and instead experience plasticity that is largely localized at the grain boundaries. This shift in the dominant deformation physics means that new techniques for controlling the mechanical behavior of nanostructured metals must be developed. This talk will outline recent work on this subject of nanocrystalline metallurgy. First, the impact of alloying additions and local grain boundary structure on nanocrystalline strength will be discussed using results from our recent experimental work. We find that solid solution strengthening is much more pronounced than was previously expected, and that subtle details of grain boundary structure can dramatically alter the strength of nanocrystalline metals. Finally, current projects to introduce unique grain boundary phases and engineer nanocrystalline grain boundary networks will be explored. The overarching goal of these projects is to develop a new suite of metallurgical strategies for optimizing the mechanical and functional properties of nanocrystalline materials.

Bio: Professor Timothy Rupert is an Assistant Professor at the University of California, Irvine, with appointments in the Department of Mechanical and Aerospace Engineering and the Department of Chemical Engineering and Materials Science. He received his Ph.D. in Materials Science and engineering from the Massachusetts Institute of Technology in 2011, and a joint B.S./M.S. from the Johns Hopkins University in 2007. At UCI, Professor Rupert’s research focuses on understanding the novel structure-property scaling laws and structural stability of nanostructured materials, to enable the production and design of reliable, next-generation structural, electronic, and energy components.

Directions to Irvine Duck Club
Going Northbound on 5:
1. Take Exit 5 for Culver Dr
2. Turn Left onto Culver Dr
3. Turn Right onto University Dr
4. Turn Right onto Campus Dr
5. Take 1st Right onto Riparian
6. Take 1st Left into Parking Area
7. Destination will be on the right

Going Southbound on 405:
1. Take Exit 5 for Culver Dr
2. Turn Right onto Culver Dr
3. Turn Right onto University Dr
4. Turn Right onto Campus Dr
5. Take 1st Right onto Riparian
6. Take 1st Left into Parking Area
7. Destination will be on the right

RSVP to: asmorangecoast@gmail.com
Thank you to our Sponsors for the Symposium on “Challenges in Aerospace Fasteners: with Design, Fabrication, and Testing”
Special Education Offering: Aluminum and its Alloys

This is an official ASM Course and it will be offered starting Wednesday, January 9, 2013 at the Western Regional Office of Bodycote at 515 Apra St, Rancho Dominguez, right off the 91 Freeway. (Apra is the continuation of Victoria Ave.) The course will be held on eight consecutive Wednesdays beginning at 6 pm and lasting about two hours each session.

- The instructor will be Dr. Michael Hahn, Northrop Grumman. He is a senior engineer and has been involved in many airborne weapons systems that are known to most people by some exotic letters. He knows aluminum alloys and is a nationally recognized expert. The chapter is fortunate to have him available for this course.

- The tuition is $1575 (veterans, see below). The tuition for the very same course at ASM Headquarters in Cleveland is $1898 to which the associated travel costs and time away from work must be added. The tuition includes a large three-ring binder with the course material.

- Veterans get a 25% discount. This discount policy was just recently approved by the Los Angeles Chapter Executive Committee and will be implemented for the first time in this course.

- Coffee will be available.

Contact Dr. John Ogren if you plan to attend this course. He will help you figure out the finances. E-mail drjogren@aol.com or phone 424-228-2708 or 310-918-3028.

Course Outline:
1. Introduction to Aluminum
2. Extractive Metallurgy
3. Solidification and Phase Diagrams
4. Aluminum Alloy Systems
5. Aluminum Casting Principles
6. Aluminum Casting Practice: castability of alloys; casting processes; procedures; sand, shell mold, permanent mold, die, investment, and centrifugal casting
7. Hot and Cold Working Aluminum Alloys
8. Recovery, Recrystallization and Grain Growth
9. Precipitation Hardening of Aluminum Alloys
10. Metallography of Aluminum Alloys
11. Application and Properties of Wrought Aluminum Alloys
12. Applications and Properties of Aluminum Casting Alloys
13. Joining Aluminum Alloys
14. Corrosion of Aluminum Alloys
15. Finishing Aluminum

WEBSITES
http://losangeles.asminternational.org
http://www.asmorangecoast.com
http://www.asminternational.org/portal/site/sandiego/

Coming soon: San Fernando Valley Chapter Website

Advertisements Rates
Take advantage of this opportunity to reach over 1000 materials professionals in the LA area.

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<th>Page Type</th>
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* 10% discount for full year purchase, 8 issues September-May (no December newsletter). Paper newsletter is sent in spring and fall with monthly electronic updates.

To advertise in this newsletter, contact us at michael.t.hahn@ngc.com
A NOTE TO THE FORMER SOUTH BAY MEMBERS…

Chapter Realignment
The South Bay Chapter is being merged with the Los Angeles Chapter. The Chapter boundaries are being realigned for Los Angeles, Orange Coast, and San Fernando. Those affected by the realignment should have received something from ASM headquarters. If you have not already responded to the notice from ASM, please do so. No member’s chapter affiliation will be changed without consent. As before, any member may choose to affiliate with any chapter. You may choose to be affiliated with Orange Coast, San Fernando, Los Angeles, or another chapter. Please pass this word along to any South Bay members who might not have gotten the word.

Is your information (mailing address, phone number, e-mail) current with ASM International? You can contact ASM to update their records at ASM International at 800-336-5152 or cust-srv@asminternational.org, or you may e-mail Michael.t.hahn@ngc.com
SPECIAL NOTICE

THE ASM LOS ANGELES CHAPTER WILL HAVE A TOUR OF THE JET PROPULSION LAB IN PASADENA THURSDAY, FEBRUARY 21 BEGINNING AT 1 PM. RESERVATIONS ARE REQUIRED BY JANUARY 20. RSVP TO ANDREW KENT Andrew.Kent@ngc.com

Andrew must provide a roster to JPL one month in advance.

REQUIREMENTS:

A VALID GOVERNMENT-ISSUED PHOTO ID (such as a driver's license or passport) IS REQUIRED FOR ADMISSION for those 18 years of age or older.

JPL requires the full name and country of citizenship for all adults, and full name for those under the age of 18. Anyone not on our approved roster will not be allowed on to the facility. All non-US citizens (Foreign Nationals) 18 years of age or older MUST present either a passport or resident visa (green card) before being allowed entry. Individuals without the appropriate identification will NOT be admitted to the facility.

The tour includes considerable walking and stair climbing. Dress comfortably and appropriately for the weather. Wheelchairs can be accommodated with prior notice. Cameras

Happy Hour and Networking Mixer will follow at 3:30 at the Congregation Ale House, 300 S. Raymond Avenue, Pasadena.

RSVP TO ANDREW KENT BY JANUARY 20. Andrew.Kent@ngc.com or (626) 812-1502
Calling All Teachers!

Attend a 5-day professional development workshop in Summer of 2013 at no cost to you!

Who should attend?
- High school general science, chemistry, physics, math and technology teachers
- Middle school physical science teachers

Why attend?
- Learn how to engage your students using simple, low-cost/no-cost experiments that you can integrate into your existing lesson plans
- Help your students discover career opportunities in science & engineering

"I can't say enough about this camp. It provided me with an increased enthusiasm and confidence for my class material. I can't wait to use just about everything I learned and to demo all the free items, and purchase some of the things we got familiar with in the workshop...chemical use, propane use, lab procedure techniques..." (Lynne Sojda, Gilmour Academy, Akron Teachers Camp)

Everything is FREE: 4 CEUs, materials, lunches & snacks

Graduate credits available! Two (2) graduate credits are available at $250. (This is optional.)

"This camp was utterly amazing! ... I will take back ideas about teaching in general that will make my classes more fun and interesting!" (Susan Bevington, Providence Academy, Ann Arbor Teachers Camp)

ASM Materials Camps give you something you could really use in your classroom!

Over 30 locations throughout the U.S. & Canada!
Check locations online: www.asmfoundation.org

Your FREE attendance at this workshop is made possible by the generous contributions of individual ASM members, ASM Chapters and many partners of the ASM Materials Education Foundation!

2013 Schedule & Online Application: www.asmfoundation.org

Questions?
Jeane Deatherage, Administrator of Foundation Programs
jeane.deatherage@asminternational.org; 1-800-336-5152, X5533

LOCAL TEACHERS’ CAMP: 12-16 AUGUST AT CAL STATE LONG BEACH
ASM-OC is looking for sponsors for monthly meetings. The sponsorship fee is $100 per meeting. The company logo will be advertised on the website and newsletter for sponsorship. A table will also be provided for display of company information at the monthly meeting.

**2012-13 Executive Committee**

Chair: Scott Poveromo  
Past Chair: Khinlay Maung  
Vice Chair: Ethel Poire  
Treasurer: Joe Breslin  
Secretary: Martin DeGuzman  
Webmaster: Timothy Montalbano
ASM Southern California Newsletter
4929 Macafee Rd
Torrance, CA 90505
January 2013

Los Angeles/South Bay Chapter Chair
Michael O’Brien
michael.j.obrien@aero.org

Orange Coast Chapter Chair
Scott Poveromo
spoverom@uci.edu
asmorangecoast@gmail.com

San Fernando Valley Chapter Chair
Efrem Escobar
eethermal@sbcglobal.net

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