

# **Precious Metals News**

A Publication of the International Precious Metals Institute (850) 476-1156 • Fax (850) 476-1548 • E-mail: mail@ipmi.org • www.ipmi.org

Volume 41, Number 4

April 2017



# 2017 ISRI Trade Show & Meeting Recap

The IPMI was well represented at the 2017 ISRI Trade Show & Meeting in New Orleans. 29 individuals representing 10 different companies were in attendance. Attendance at ISRI 2017 was up with  $\sim4,\!500$  total delegates and  $\sim300$  exhibitors. While still grappling with generally low metal prices, ferrous & non-ferrous alike, the overall mood was cautiously optimistic. This was rooted in the possibility of Washington reducing tax & fee burdens and streamlining various regulatory requirements. Demand for most metals appears to be holding fairly firm and seems to be slowly inching upward in some cases as pent up demand makes itself felt

Exhibiting at ISRI 2017 were: IPMI: JP Rosso / United Catalyst:

Becky & Tim Berube / **BASF**: Amanda Colyer, Kate Silvestri, Tracey Ware-Justice, Dave Friedinger / **Mairec**: Mikhail Khaimov, Sabrina Berger, Julia Jagupov, Lyn Johnston, George Lucas, Doug Meece. / **Colt Refining**: Harvey Gottlieb, John Cianciarulo, Paul Amoroso / **Dowa**: Wataru Okuda, Hiroyuki Endo

Other IPMI members attending who stopped by the IPMI booth included: **Stillwater**: Frank Reddon, Greg Roset, James Binando / **Toyota Tsusho**: Fred Saada, Edgar Smith / **Inspectorate**: Joe Suarez, Johnathan Duncan / **Techemet**: Stewart Prentice, Lars White, Greg Fowles / **Umicore**: Mark Caffarey.



### SMART TECHNOLOGY SMART FUTURE

### R&D Park of Krastsvetmet

rndpark.com

RUSSIA'S FIRST OPEN INNOVATIONS
INFRASTRUCTURE FOR
DEVELOPMENT AND TRANSFER
OF TECHNOLOGIES IN THE FIELD OF
PRECIOUS METALS.

R&D Park was lauched by Krastsvetmet, Russia's biggest refinery. It provides comprehensive support for the R&D Park's residents, including funding the projects and participation in major Russian and international tenders.

Innovation projects in the following areas are launched and implemented at the R&D Park:

- processing raw materials containing precious metals
- metalworking and manufacturing industrial appliances that use precious metals
- environmental protection technologies and creation of an environmentally friendly production (recycling, catalysis, energy efficiency, gas emissions control, industrial wastewater treatment)
- modeling, design and engineering
- new applications for precious metals



# Startup Development Program 2017

Submit your project

RESEARCH AND DEVELOPMENT OF TECHNOLOGICAL STARTUPS WITH HIGH INVESTMENT POTENTIAL.



R&D co-funding



Access to precious metals and research infrastructure



Expert project support



Access to Krastsvetmet's affiliate network

R&D Park is launching the Startup Development Program to fid best technologies that could be implemented in Krastsvetmet or startups Krastsvetmet can invest in.

The best projects will receive ample opportunities for growth and development. The program is open to innovative companies as well as individual researchers.

The Program topics: metallurgy, refining, use of non-ferrous metals (including medicine), additive manufacturing, environmental protection technologies, materials and technologies intended to replace the use of precious metals, etc.



info@rndpark.com

Phone: +7 391 259 3333 (ext. 3253)

1 Transportny proezd, Krasnoyarsk Russian Federation, 660027

krastsvetmet.com

### 2017 IPMI Award Winners Announced

The 2017 **IPMI Jun-ichiro Tanaka Distinguished Achievement Award sponsored by Tanaka Memorial Foundation** winner is **Dr. Roland Gerner** of Heraeus. Dr. Roland Gerner was born in 1954 in Höchstadt an der Aisch, Germany. He studied Chemistry at the Johannes Gutenberg University in Mainz and was subsequently awarded a PhD. He commenced his professional career in 1984 as a Laboratory Manager at a leading global precious metals and chemistry group, focusing on metal chemistry research. Following this, he became Departmental Head of a unit specializing in metals research. Having dealt primarily with research and development issues up to this point, in 1993 Dr. Gerner took over responsibility for the central precious metal refinery and its 250 employees.

In 1998, Dr. Gerner moved abroad to accept a new position as Member of the Board of Management of a Brazilian subsidiary of the group. He was directly in charge of the precious metal chemistry (refining and products), ceramic colors, plating technology, semifinished jewelry products and electronic products divisions. In addition, he oversaw Latin American operations including three production sites in Brazil and Argentina.

Since January 2015 until December 2016, Dr. Roland Gerner was member of the Heraeus Group Management. Before that, he has been Managing Director of the Heraeus Precious Metals GmbH & Co. KG, formally known as W. C. Heraeus, since 2001.

Dr. Roland Gerner is married and has two children.



**Dr. Roland Gerner** 



Professor David W.C. MacMillan

The 2017 **IPMI Henry J Albert Award sponsored by BASF** is awarded to **Professor David W.C. MacMillan** of Princeton. Dave MacMillan was born in Bellshill, Scotland and received his undergraduate degree in chemistry at the University of Glasgow, where he worked with Dr. Ernie Colvin. In 1990, he began his doctoral studies under the direction of Professor Larry Overman at the University of California, Irvine, before undertaking a postdoctoral position with Professor Dave Evans at Harvard University (1996). He began his independent career at University of California, Berkeley in July of 1998 before moving to Caltech in June of 2000 (Earle C. Anthony Chair of Organic Chemistry). In 2006, Dave moved to the east coast of the US to take up the position of James S. McDonnell Distinguished University Professor at Princeton University and he served as Department Chair from 2010-15.

Dave has received several awards including the *Janssen Pharmaceutica Prize* (2016), *Max Tischler Prize Harvard* (2016), *Ernst Schering Award in Biology, Chemistry and Medicine, Germany* (2015), *ACS Harrison Howe Award* (2014), *NJ ACS Molecular Design Award* (2014), *ACS Award for Creativity in Synthesis* (2011), the *Mitsui Catalysis Award* (2011), *ACS Cope Scholar Award* (2007), *ACS EJ Corey Award* (2005), the *Corday-Morgan Medal* (2005).

In 2012, Dave became a Fellow of the Royal Society (FRS) and a Fellow of the American Academy of Arts and Sciences.











#### **Capabilities**

The combination of state-of-the art equipment using leading edge technology and our highly trained, knowledgeable staff allows us to process material for **Diverse** industries.

#### **Environmental Footprint**

We are committed, responsible stewards of the environment. Our facilities are **Zero Discharge** and feature the most sophisticated pollution control systems in the industry.

#### **Financial Strength**

Our **Strong Financial Position** and direct relationships with several worldwide market leaders allow us to flawlessly execute your transactions. We offer a variety of settlement options to meet your specific pricing and hedging requirements.

#### **Results**

A singular focus on your bottom line drives us to use the **Optimal** refining processes every time. Partner with us for transparent, timely and accurate settlements, coupled with superior customer service.



#### Award Winners, continued from page 3

Dave helped launch and was editor-in-chief of *Chemical Sciences* (2009-1014) and is currently Chair of the NIH Study Section SBCA.

Dave is a scientific consultant with Merck (worldwide), Amgen (worldwide), Biogen Biopharma, Abbvie Research Laboratories, Johnson & Johnson Pharmaceuticals, UCB-Celtech, Constellation Pharmaceuticals, Tkeda Pharmaceuticals, and Gilead Research Laboratories. Dave is also a member of the scientific advisory boards of Firmenich (Switzerland) and Kadmon Pharmaceuticals (US), and a permanent member of the RSRC board at Merck Research Laboratories.

Along with Dr. Paul Reider, Dave is a co-founder of Chiromics LLC, a growing biotech that seeks to devise new strategies and screening techniques for the identification of drug-like molecules.

The 2017 **IPMI Carol Tyler Award** winner is **Professor Yu Huang** of University of California at Los Angeles. Dr. Yu Huang is a full professor in the Department of Materials Science and Engineering at University of California Los Angeles (UCLA). She received her B.S. in Chemistry from University of Science and Technology of China, and her Ph.D in physical chemistry and M.A in Chemistry from Harvard University. Before she embarked on her independent career at UCLA She was awarded the prestigious Lawrence Fellowship and held a joint postdoctoral position with LLNL (Lawrence Livermore National Lab) and MIT.

At UCLA Prof. Huang explores the unique technological opportunities that result from the structure and assembly of nanoscale building blocks. Her research focuses on mechanistic understanding of nanoscale phenomena and on exploiting the unique properties of nanoscale materials for various applications. Taking advantage of the unique roles of nanoscale surfaces and interfaces, Prof. Huang is creating methodologies to apply the latest developments in nanoscale materials and nanotechnology for probing nanoscale processes that can fundamentally impact a wide range of technologies including materials synthesis, catalysis, fuel cells, and devices applications. Notably, Prof. Yu Huang has made extraordinary contributions to the biomimetic design and syntheses of functional metallic nanostructures, including the design and synthesis of high performance catalysts. Her recent discoveries have led to the design of highly robust fuel cell Pt-based catalysts with record high activities that greatly outperform commercial Pt/C catalysts, marking a critical step forward to fuel cell technologies and in the efficient usage of precious metal resource.

Prof. Huang's achievements have gained her international and national recognitions including the (International Precious Metal Institute) *IPMI Carol Tyler Award*, the (Materials Research Society) *MRS Fellow*, the *PECASE* (Presidential Early Career Award in Science and Engineering), the National Institute of Health) *NIH Director's New Innovator Award*, the (Defense Advanced Research Projects Agency) *DARPA Young Faculty Award*, the *World's Top 100 Young Innovators Award*, the Sloan Fellowship, (International Union of Pure and Applied Chemistry) *IUPAC Young Chemist Award*, and the *Nano 50 Award*.



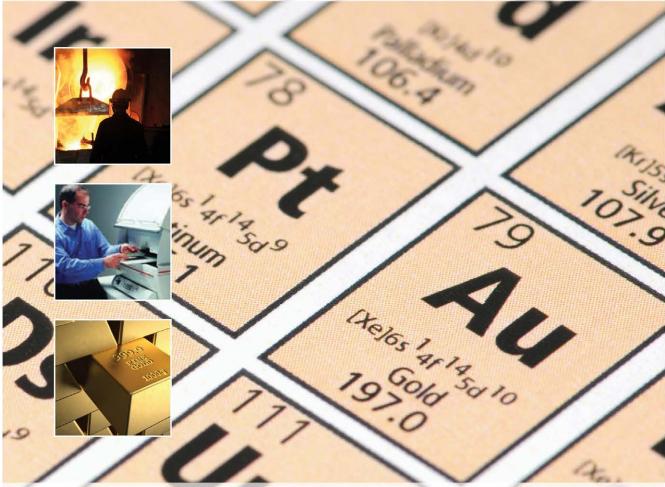
**Professor Yu Huang** 

There are three **IPMI Student Award Winners** for 2017. **Johannes B Ernst** of Westfalische Wilhelms Universitat, **Christine Laramy** of Northwestern and **Anna Wuttig** of MIT.

Johannes Ernst, a recipient of the Almuth-Klemer Scholarship for organic chemistry, his chemical accomplishments also included a stint in the study group of Dr. Stephen Buchwald of MIT who was the 2016 Recipient of the Tanaka Award. Further, he originated a collaboration of Prof. Satoshi Muratsugu's group at Nagoya University working towards consolidating a German-Japanese publication about the tunability of a Ru-based heterogeneous catalyst by NHC-modification. His research is focused on the modification of heterogeneous precious metal catalysts with N-heterocyclic carbenes (NHC<sub>S</sub>) as ligands. He holds a Bachelor's Degree from the University of Münster. Ernst's advisor, **Dr. Frank Glorius** is the **2017 Faculty Advisor Award** winner.

continued on page 7





Alex Stewart International provides inspection, weighing, sampling and assay services for the global precious metal industry, including all major and reputable UK, USA, Asian, African and European precious metal refineries.

### Your Global Network of Inspection & Analytical Laboratory Services

#### Alex Stewart (International) Corporation

2b Sefton Business Park, Aintree, Liverpool L30 1RD United Kingdom T: +44 151 525 1499 F: +44 151 523 3760
All PM enquiries, please contact Mr. Andy Smith E: andy.smith@alexstewartinternational.com www.alexstewartinternational.com

#### Award Winners, continued from page 5

**Anna Wuttig**'s research is entitled "Precious Metals as Electrocatalysts for  $CO_2$ -to-Fuels Conversion". The purpose of which is to uncover the mechanism of the deactivation pathway for known group 11 catalysts, examine kinetic basis for electrocatalytic bifurcation between CO and  $H_2$  and model Au surfaces and to visualize the complex intermediate binding dynamics on Au and Cu surfaces. Her undergraduate degree was awarded at Princeton. Among her many awards are Malcolm H Chisholm Inorganic Chemistry Prize, and Newport Award for Excellence in Photonics.

**Christine Laramy** has a B.S. in Biomedical Engineering from University of Texas at Austin. Performing research since her sophomore year in high school, she has obtained paid research or fellowship positions at University of Texas at Austin and Texas A& M. In addition, she has multiple pending patents on work related to biomedical technologies to the marketplace, specifically focused on polymer, nano- and biomaterials research. Her research involves a development of a new method to standardize the electron microscopy characterization of nanostructures with the use of gold.

**Tracie McGinnity** of University of Notre Dame received the **Gemini Industries Award**. Tracie received her undergraduate degree in Biomedical Materials Engineering Science at Alfred University. Among her awards are the *Whitaker International Summer Grant*, and *Zahm Research Travel Grant*. Her research involves investigating nanoparticle imaging probes which enable molecular imaging with computed tomography and photo-counting spectral CT.

Zhenshu Wang of MIT is the winner of the 2017 Sabin Metal Ron Bleggi Award. Zenshu is a graduate of the University of Minnesota. His degree there was in Chemical Engineering. A graduate student at MIT, his research is focused on engineering more efficient catalysts that improve the properties of noble metals. He hopes to replace the unused core of a typical noble metal catalyst nanoparticle with a less expense earth abundant material.

**Qingyuan Lin** of Northwestern is the recipient of the 2017 **Metalor Technologies Award**. He holds a BS degree in Physics from Peking University. Among his awards are the *Ryan Fellowship* and *Hierachical Materials Cluster Program Fellowship*. He has presented at the Chinese Physical Society Fall Meeting as well as the Materials Research Society Fall Meeting. His research is entitled "Multicomponent Gold Nanoparticle Superlattices Programmed by DNA."

The Gero Family Trust Bright Futures Award for 2017 goes to Hao Cui of Colorado School of Mines. Hao graduated from University of Science and Technology in Beijing where he received

his BS degree and also Colorado School of Mines where he received his Master's degree. Currently a graduate student there, working towards his PhD, his research is on the recovery of Precious Metals from the recycling of printed circuit boards. Prior to this research he was actively involved in research concerning the recovery of rare earth metals from a deposit found to be rich in an uncommon host mineral known as ancylite.he has presented research at the SME Annual Conference and at the Hydro 2014 Hydrometallurgy Conference. His advisor is Dr. Corby Anderson, 2015 Recipient of the IPMI Tanaka Award.

Javier Grajeda of University of North Carolina, Chapel Hill is the winner of the Johnson Matthey Award. Javier obtained his undergraduate degree at the University of Texas, El Paso. He has presented research at the Chemistry Winter Meeting in Norway and among his awards are National Society of Hispanic Physicists award, NSF Graduate Research Opportunities Worldwide and Research Excellence Undergraduate Student. The focus of Javier's research seeks to improve performance of precious metal catalysts by designing ligands that interact cooperatively with base metal cations during organometallic catalysis.

The New York Chapter Award recipient is Megan Moyer of Colorado School of Mines. Megan is working towards a PhD in Applied Chemistry. Her work is entitled "A Tandem Catalytic System comprised of Gold Nanoparticles and Alcohol Dehydrogenase Enzyme Tethered to Mesoporous Silica Support for One-pot Oxidative Esterification of Allyl Alcohol". Megan has presented at ACS National Conference and Graduate Research and Discovery Symposium. She was a CoorsTek Fellow and holds a BS in Chemistry from Colorado School of Mines.

**Tyler Finamore** of the University of Notre Dame is the recipient of the **Colt Refining Award**. Tyler's research is entitled "Gold Nanoparticles as a New Diagnostic Tool to Measure Scaffold Degradation". Among his honors are Eugene McMahan Scholarship, QEP Interest in Energy Scholarship and Sons of Italy Grande Lodge Scholarship. His undergraduate degree was obtained at the Colorado School of Mines.

The Elemetal Graduate Student Award for 2017 goes to Rong (Rocky) Ye of University of California, Berkeley. Rocky Ye's advisor is Gabor Somorjai, the 1986 Henry J. Albert recipient. Rocky's research is the development of highly active and recyclable dendrimer-encapsulated precious metal nanocatalysts with tunable product selectivity. He holds an M.S. in Inorganic Chemistry from the University of California, Los Angeles and his BE degree in Polymeric

continued on page 9



# MORE THAN **24 YEARS** OF EXPERIENCE IN THE INDUSTRY





**Transvalue, Inc.** is aware of the importance of security and time efficiency in this industry. Our services provide peace of mind to our clients, as we offer management of the entire logistical process including:

- Coordination of your shipments customized to fit your business
- Transport of commodity from mining sector to refineries
- Submission of customs clearances
- Secure storage

#### Award Winners, continued from page 7

Material and Engineering from Sun Ya-Sen University. He received the *Eagle Foundation Award for Excellence in Enhancing Student Learning* and also the *Teaching Effectiveness Award*.

The **Republic Metals Richard Rubin Memorial Award** for 2017 is awarded to **Vazziri Hassas** of University of Utah. Hassas's research is entitled "Fundamental Surface Chemistry Aspects of Auriferous Pyrite Flotation with Carbon Dioxide and Nitron." His vision is to utilize modern analytical techniques to understand mineral flotation surface chemistry, with emphasis on flotation chemistry of auriferous pyrite and the flotation recovery from precious metal and pgm ores. He received the Cooper-hansen Fellowship and the

TUBITAK Scientific Research Grant. He received a B.Sc in Mineral Processing Engineering at Istanbul Technical University.

The first recipient of the **George J. Benvegno Sr. Memorial Scholarship Award** is **Kai Wan** of University of Toronto. Kai Wan received an Honors Bachelor of Science degree from University of Toronto and is a recipient of two Canada Graduate Scholarships. His has had presentations at International Research Training Group Symposium, 48th Inorganic Discussion Weekend and the Techknowfile Conference. His research is developing ruthenium asymmetric hydrogenation catalysts for ketone and imine reduction and hydrogenation catalysts for ester and carbon dioxide hydrogenation using chiral amino substituted N-heterocyclic carbene ligands.

## IPMI Premier Awards and Student Scholarship Programs

By Dr. Robert M. Ianniello, Awards Committee Chair

The IPMI's mission is to collect, archive & share substantive, definitive and factual information regarding literally all aspects of the precious metals (gold, silver, platinum, palladium, rhodium, ruthenium, iridium & osmium). In support of this mission, the IPMI Premier Awards and Student Scholarship Programs were established to recognize and promote individuals who have made significant contributions to the science, technology, commercialization, and management of precious metals.

The IPMI Junichiro Tanaka Distinguished Achievement Award, sponsored by The Tanaka Memorial Foundation, recognizes important career contributions to the advancement of the precious metals industry, be it technical, economic or management. The IPMI Henry J. Albert Award, sponsored by BASF Corporation, recognizes and encourages outstanding theoretical and experimental contributions to the science and technology of precious metals. The IPMI Carol Tyler Award recognizes the achievement of a woman in the field of precious metals be it industry or academia or it can be presented to a student in precious metals research. These awards are prestigious, with a rich history of awardees well known to the industry.

Additionally, the IPMI student grants awarded each year encourage young people to look to precious metals as a career choice and support vital educational and research programs. The IPMI awards up to \$150,000 to qualified students each year. The student awards are funded by the IPMI as well as individual contributor companies and organizations. One recently established award (The George Benvegno Memorial Scholarship) is endowed, insuring a sustainable source of

revenue every year. All awards are given at our Annual International Conference, held in June. The awards are made to students who have started or plan to do research or development projects in the field of precious metals and will not have graduated before June of the award year. As you might imagine, the student scholarships are highly competitive, attracting high performing individuals every year.

In order to properly vet the host of qualified award and scholarship candidates, an awards committee is in place consisting of volunteers having many years of experience in a broad array of precious metals related areas. These volunteers come from the academic, industrial, and government sectors. This insures that diverse viewpoints are incorporated into the evaluation process that will lead to a reasonable ranking of the candidates. A weighted average ranking formula, consisting of the average candidate rank and the total number of votes received is then employed to generate the final forced ranking of the candidates. While the process is not completely objective, it has proven over the years to be the most fair and least subjective approach. My experience as both a committee member and committee chair over a ten year period has convinced me of the value of this approach. The quality of the award and scholarship winners continues to improve year over year and I suspect that this will continue in the future.

We continue to look for new committee members to help in this worthwhile and valuable program. If you have any interest in joining the team please feel free to contact the IPMI office or myself at your convenience.

### New FATF List of AML/CFT-Deficient Countries

By Mike Riess, Materials Management

The Financial Action Task Force publishes a list of countries whose standards are inadequate to protect against laundering and terrorism. You probably have little concern about doing business with them, but there's always the chance they are removed by one or two or six degrees of separation in your supply chain: So best to know who they are:

For **North Korea**, FATF has called on members to implement active countermeasures and sanctions to protect themselves. That has been true since 2011.

FATF feels Iran has improved its policies and now calls for enhanced due diligence but not active countermeasures.

Other countries on the list are: Afghanistan, Bosnia and Herzegovina, Ethiopia, Iraq, Lao PDR, Syria, Uganda, Vanuatu and Yemen.

To learn more about each of these countries and about how the list works, go to:

https://www.fincen.gov/sites/default/files/advisory/2017-04-05/FinCEN%20FATF%20Advisory%20%28February%202017%29.pdf

# **IPMI® NEWS**

## Update on the IPMI 41st Annual Conference Saturday June 10th - Tuesday June 13th

The Conference Technical and Social Programs are still shaping up! The Technical Program is nearly with full with speakers committed for presentations that include Mining, New Technology, Analytical, Auto Catalyst, Business Trends, EHS and Legal. This year a new session, closed to media, is being presented. Entitled "Hands on Security: Forgery, Packaging Risks and Cyber Attacks", it will no doubt spark interest to our attendees. The Europe Chapter is also sponsoring a session that will get delegates clued in to what is happening "over the pond". And don't miss the Student Research Session where you will find tomorrow's industry and research leaders.

The delegate luncheon will be held on Sunday and will include a guest speaker. (More on that next issue!)

Also on Sunday is a seminar presented by Jeff Christian of CPM Group, A Deep Dive Into Precious Metals.

The Exhibit Hall currently has ten booths this year with exhibitors showcasing their wares and perhaps offering a few giveaways. Added to the Exhibitors this year is a "Student Appearance" scheduled for Sunday afternoon in which Students will discuss their research projects and hold a poster presentation. It will be open from 8 until 4 on Sunday and Monday and from 8 until Noon on Tuesday. At press time we still have room for more.

This year's Social Program will include the Johnson Matthey

sponsored Welcome Reception, a Tanaka sponsored reception as well as the Gannon and Scott annual Afternoon Party.

Student and Premier Awards will be presented on Tuesday evening at the Awards Banquet. The Conference adjourns after the Closing Reception on Tuesday evening.

If you have not registered yet, you can do so online on our website. It's fast and easy.

See you there!

# IPMI Special Interest Groups to Meet at Conference

- The IPMI Sampling and Analytical Group will meet on Monday June 12 2pm-4pm in Marbella 1 at Grande Lakes Resort.
- The IPMI PRC will meet on Sunday June 11 2pm-4pm in Marbella 1 at Grande Lakes
- The EHS Committee will hold at Meet and Greet Sunday June
   11 2:30pm-4:00 pm in Marbella 3 at Grande Lakes

Special Interest Groups are open to All IPMI Members

### Oh Those Busy Chapters!

It's spring and they are planning many events!

- The New England chapter will hold their Annual Jewelry Designs Award Banquet May 11
- The Europe Chapter is holding a Wine Tasting in London on Wednesday May 17.
- The Europe Chapter will hold a Seminar in Prague on 13th and 14th November: What will our metal's future look like in Europe?

For more details go to the IPMI Calendar on our new website.

### **Our New Website**

As you know by now we have a new, improved website. Our membership database is on this site and you can easily find whomever you are looking for by signing in to your profile and doing a search. However, some of our members are missing! If we do not have your email address then you are not on this online members directory. If you find that we do not have it, please send it to us via email so that you can be found and be included!

### Want more visibility for your company?

Buy an ad in the IPMI newsletter. Full page, half page, quarter page and business card sizes available! You can place them monthly, run it for a full year and also have a hyperlink imbedded into the ad that draws readers to your website. For details, call IPMI!

# **IPMI®** Calendar

2017	May 11	New England Chapter Annual Jewelry Designs Award Banquet
	May 17	Europe Chapter Wine Tasting • London, UK
	June 10-13	41st Annual Conference • JW Marriott Grande Lakes, Orlando FL
	Sept 13	NY Chapter Seminar and Cocktails • Museum of American Finance
	Sept 14	5 <sup>th</sup> Annual IPMI Platinum Dinner • New York Palace Hotel, New York NY
	Nov 13-14	Europe Chapter Seminar • Prague, Czech Republic
2018	June 9-12	42 <sup>nd</sup> Annual Conference • JW Marriott San Antonio Hill Country, San Antonio TX
	Sept 13	6 <sup>th</sup> Annual IPMI Platinum Dinner ● New York Palace Hotel, New York NY