Call for Volunteers

We are requesting ASM Pittsburgh Chapter members, representatives of Pittsburgh Chapters' sustaining member companies, students & faculty members of the local universities to come forward as soon as they can and join the chapters' executive committee. The volunteers are a key factor in the success and longevity of this materials society! We need your support and involvement to serve this professional community. There are many committee chair positions as yet unfulfilled this year. You can help in any capacity, small or large, that you feel you are interested in. For example you could help:

- develop, test and deliver educational products and services such as individual or company-wide
- training programs that provide opportunities for professional development / continuing
- education of members
- organize seminar series on topics of interest to the members to deepen their technical expertise
- to grow and retain membership
- to improve communications with membership
- foster the development of excellence in technical areas
- suggest topics and speakers for regular monthly meetings
- reach out to the local high school students and introduce them to materials science and engineering
- organize plant tours
- elicit applications for college scholarships
- act as judges in Pittsburgh Regional Science and Engineering Fair (PRSEF), volunteer for National Engineers Week and Materials Minicamps

There is certainly a value in being a volunteer. The regular monthly meetings are a wonderful resource to increase your professional network, broaden your horizons and stay current in technical knowledge. You also receive professional development points. Employers usually view these activities as a hallmark of high-achieving employees. This is also a great opportunity to hone your leadership skills! Hope you will join the ASM Pittsburgh Chapter executive committee in the near future. Thank you!

ASM Pittsburgh Chapter – Executive Board 2016—2017

Introducing your 2016-17 Executive Board:

Chair: Nate Eisinger
Vice Chair: Piyamanee Komolwit
Secretary: Mark Sindelar
Treasurer: Michael Alexander
Communications: Brian McTiernan

ASM Pittsburgh Chapter's Social Event – Picnic on June 18

ASM members, spouses and families are invited to take part in this fun social gathering. There is a nearby playground for the kids. Come out and enjoy the summer with the ASM chapter!

Day/Date: Saturday, June 18
Location: Mt. Lebanon Main Park
Address: 900 Cedar Blvd, Mt. Lebanon
Time: 12:00 p.m.—3:00 p.m.

Registration fee: No fee for ASM members, spouses, friends or family with reservation. $15 at the event without a reservation.

To register: RSVP by 6/16/16 to Nate Eisinger at neisinger@perrymanco.com.

Meal: The Chapter will provide burgers, hot dogs, and a vegetarian option along with drinks and sides. There will not be any alcoholic beverages.
Letter from the Chair:

I cannot believe how quickly the time has passed. As we near the end of our 2015-2016 year (96th year since the chapter was started in 1920), I think back on our good work. This was a wonderful year with several successful meetings and accomplishments. The Executive Committee of the past year deserves appreciation as the chapter received two special awards in category IV (large chapters with membership greater than 300 members) from ASM International in the areas of Student Outreach and Innovative Programming. With the great work that happened this year, I am hopeful that the Pittsburgh Chapter will reclaim these awards for this year as well.

We started the year with a meeting at the beautiful campus of Saint Vincent College to attract the membership in the East of the city. October meeting was organized in the south of the city, focused on Sustainability. November meeting at RMU was a joint meeting with ASNT with a presentation on “Additive Manufacturing and NDT Methods Associated with this Technology”. December meeting was the lovely spouse’s night at Narcisi winery in the North with a presentation on Additive Manufacturing.

January meeting in Oakland was the Pittsburgh Night Lecture by Prof. Bettinger, CMU on “Edible Electronics” attracted several students from Pitt and CMU. YMN meeting in February was a huge success with the invited lecture by the ASM’s chief volunteer, Mr. Jon Tirpak, current President of ASM International. March meeting at RMU was a joint meeting with NACE. April meeting (joint meeting with ASM NWPA Chapter) was a well-attended plant tour of Elliott Company, a sustaining member company of the Pittsburgh chapter. We are not done yet, we have our Andrew Carnegie Lecture, Awards Night and Past Chairs Night coming up on May 19th. It is going to be an exciting meeting with presence of several past chairs and one of our past chair, Mr. Riad Asfahani, FASM presenting the prestigious Andrew Carnegie Lecture. The details of the meeting announcement can be found elsewhere in this newsletter.

We will be concluding the year with a fun filled social event and Nate Eisinger will break the suspense of it during our last technical meeting on May 19. All the hard work of ASM Pittsburgh Chapter Executive Committee is starting to pay off. We saw an increased attendance at our regular monthly meetings. Thanks to the choice of venues and the contemporary topic selection by Nate Eisinger, Vice-Chairman and Regular Meeting Committee Chair. My thanks and congratulation to the officers, executive committee members and all that helped make this a successful year.

Next year we also plan to publish the year book (Membership Directory and Buyer’s Guide). Special thanks, to Jon Eckenrod and Steve Fyfitch for their untiring and diligent efforts to produce the year book in June 2014 after 5 years of waiting. Over the last two years Michael Alexander has been doing a tremendous job in publishing the newsletter, as we continue to the next years we are also looking into a new strategy for improved communication. We are also looking for other ideas for the newsletter as we anticipate some issues in publishing the newsletter.

Our ongoing challenges continue to be to attract young materials professionals to the chapter, increase student attendance, decrease the cost of technical meetings, and further increase member attendance at the regular monthly meetings. Your comments and feedback are welcome as they would help us restructure the meetings, find contemporary topics, and create excitement for the programs leading to increased attendance at these meetings. Please feel free to send any feedback/comments/questions to any of us on the Executive Committee. I look forward to welcoming you soon at one of our upcoming meetings. Please continue to visit the regularly updated ASM Pittsburgh website and look up the newsletter for more information regarding upcoming, as well as, past events.

We are also looking for volunteers to join the executive committee for 2016-2017. If you or any of our friends or colleagues are interested, feel free to contact me or any member of our executive committee.
February Chapter Meeting Summary

February 18, 2016
Mr. Jon Tirpak
Topic: “Emerging Between the Industrial and Federal Sectors: Reflections and Recommendations”

Young Members Night

ASM Pittsburgh Chapter welcomed 65 students from Carnegie Mellon University, the University of Pittsburgh, and Robert Morris University to the annual Young Members Night at the University Club in Oakland. Forty-five professionals, including those from sponsor companies, were impressed by the students who represent the future of the materials community. In addition to the presentation by guest speaker Mr. Jon Tirpak, the evening also featured an interesting presentation by Ms. Whitney Schoenthal, a Ph.D. student at Carnegie Mellon University, and a poster contest.

In her presentation, “Titanomagnetite as a Tool to Look Into the Geologic History of Mars,” Ms. Schoenthal made a comparison between Earth and Mars. While the former has a molten outer core and an active dynamo, the latter’s dynamo froze some four billion years ago, resulting in an atmospheric loss. The goal, then, was to find a material sensitive to oxygen when the planet formed that could be detected on the current surface. Enter titanomagnetite, whose composition is dependent on the partial pressure of oxygen (illustrated by an iron-oxygen phase diagram).

Ms. Schoenthal described a magnetometer destined for Mars via INTA (Spain’s National Institute for Aerospace Technology) and how the diurnal temperature effect could be used to identify the titanomagnetite composition. She also discussed differences between the Akimoto and Néel models, which are based on crystalline structure, for mapping of the magnetic transition temperature for lab synthesis of single phase titanomagnetite.

Allan Hutt, Pittsburgh Chapter Awards Committee, then presented the 2016 Young Member Awards as shown in the table below.

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<thead>
<tr>
<th>Outstanding College Sophomore</th>
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<td>Indorica Sutradhar</td>
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<tr>
<th>Outstanding College Junior</th>
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<tr>
<td>Eamon Hughes</td>
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<tr>
<td>Katie Bettenmiller</td>
<td>Carnegie Mellon University</td>
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<tr>
<th>Outstanding College Senior</th>
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<tr>
<td>Emma Sullivan</td>
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<td>Joshua M. Kubiak</td>
<td>Carnegie Mellon University</td>
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February Chapter Meeting Summary

Tim Hosch then presented the winners of the Poster Contest as shown in the table below.

<table>
<thead>
<tr>
<th>Undergraduate Winners</th>
<th>Carnegie Mellon University</th>
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<tr>
<td>1st - Rekha Shnepf</td>
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<tr>
<td>2nd - Shannon Biery</td>
<td>University of Pittsburgh</td>
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<tr>
<td>3rd - Eamonn Hughes</td>
<td>University of Pittsburgh</td>
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<tr>
<th>Graduate Winners</th>
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<tr>
<td>1st - Luke Klosterman</td>
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<tr>
<td>2nd - Erica Stevens</td>
<td>University of Pittsburgh</td>
</tr>
<tr>
<td>3rd - Jenifer Hajzus</td>
<td>Carnegie Mellon University</td>
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After the awards presentations, Dharma Maddala introduced the featured guest speaker, Mr. Jon Tirpak, 2015-2016 President of ASM International. Mr. Tirpak then introduced himself as the “chief volunteer” of the organization, thanking those who have also volunteered, and encouraging the students to remain involved with the organization after graduation. As he said, “one of you will be up here twenty to thirty years from now giving the same pitch.” Mr. Tirpak’s presentation blended personal experiences with career advice. While targeted at the Young Members in the audience, more seasoned professionals also had much to learn from his message.

Mr. Tirpak displayed a map of the United States with the stops he has thus far made in his career, as one would plot a road trip. Much of his work has bridged the gap between the Federal and industrial sectors, providing appropriate materials knowledge for either the purchasing agency or manufacturing contractor. But the “phase change” in his story was not that for some top secret metal for the Ballistic Missile Office or the Department of Defense. Mr. Tirpak took the bold step—or many steps in this case—early in his career of taking off work six months to walk the Appalachian Trail.

Throughout his career, experiences from the trail and connection to other professionals through ASM have guided Mr. Tirpak to many interesting and fulfilling job assignments where he has been able to make...
contributions. The theme of “purpose” was woven throughout his presentation and he encouraged everyone to consider their purpose and where their contributions can help others. While, naturally, the materials realm is one area for contribution, the other is with service. Mr. Tirpak, for example, is very involved with Boy Scouts of America.

Politicians need materials people to provide information from knowing what a particular type of alloy is to understanding why the loss of domestic steel production is bad. When purchasing an airplane, knowing materials is important to proper allocation of resources. Mr. Tirpak mentioned Willy Sutton, the famous bank robber of the 1920s who, when asked why he robbed banks, responded “that is where the money is.” This is true of NASA, DoE, DoD, and other agencies—much money is spent on materials research, development, and application.

Mr. Tirpak returned to the concept of a career map by asking all the non-Young Members to place their business cards face down on the table. He then asked if, at high school graduation, anyone thought that would be the job they have now. The Young Members were then challenged to think about where they want to be, what stops could be made along the way, when do they want to arrive there, and who may be coming along. Particularly interesting from the presentation, and all too often missing from advice given to those starting their careers, was the concept of “stops along the way.” Mr. Tirpak well knows the value of such stops, as his experiences on the Appalachian Trail shaped his perspective and his life.

He said the is a clear need for materials engineers and metallurgists now and in the future, citing the demographics of the current workforce. Also, everything is made of materials and while newer technologies such as 3-D printing can be exciting, there is still a need for forgings and coatings.
March Chapter Meeting Summary

March 17, 2016
Ms. Catherine Houska

Joint Meeting with National Association of Corrosion Engineers

Ms. Catherine Houska of TMR Consulting navigated a course through the minefield of “sustainability” at the joint meeting of ASM Pittsburgh Chapter and the National Association of Corrosion Engineers at Robert Morris University’s Sewall Center. The “megatrend of sustainability” continues to influence and motivate national governments to impose legislation, regulations, and executive orders to require the use of voluntary building rating systems. In the past seventeen years, the number of countries having government regulation has increased from five to nearly every developed country.

(Continued on page 7)
As Ms. Houska noted, “You cannot have a green building council unless the government sponsors it.”

Just what various councils and organizations are doing can be concerning. Ms. Houska encouraged everyone in the materials industries to pay attention to changes that are occurring and become involved, lest decisions be made without the input of those knowledgeable in the subject.

As an example, Ms. Houska summarized some of her involvement with the ASTM E60 Sustainability committees. ASTM E60 proposes to develop “sustainable standards for all industries, products, and applications.” Ms. Houska has B.S. in metallurgy from Carnegie Mellon University and an M.B.A. from Case Western Reserve University, has authored over 165 publications, as has thirty years’ experience in the metals industry. Ms. Houska is well aware of the advantages of construction using stainless steels and has some of the world’s best known architects as her clients.

In contrast, early members of sustainability committees included people with forestry backgrounds who claimed that metals—as non-agricultural products—were not “sustainable” and shouldn’t be used in building construction. Although serious fires in wooden structures provided some indication that metal was actually a suitable construction material, it took the involvement of professionals from the metals and concrete industries to move the committees towards reasonable recommendations.

One argument towards the use of metals is the recyclability of the material, an important characteristic that is often ignored in calculations of how environmentally friendly a structure is, or is not. Increasingly, the trend is to be able to trace materials back to the source, so that documentation will show how much content is recycled and how much is refined from ore, and the origins of all these inputs. In other words, the “recapture rate” greatly exceeds the “percentage recycled” for metals, and would be a better comparison.

As an example of proactive involvement, having industry-knowledgeable people involved in the decision-making, dentists have been involved in developing their own standard for “sustainability.” Ms. Houska encouraged the attendees to follow this example.

In motivating the audience, Ms. Houska encouraged everyone to check the website for ASTM E60.
High School Educator Award

ASM Pittsburgh Chapter Member Robert Wesolowski honored with High School Educator Award by Carnegie Science Awards by FedEx Ground

The ASM Pittsburgh Chapter is pleased to announce that Saint Joseph High School educator, Master Teacher for American Society for Metals (ASM) International, and the Pittsburgh Chapter's own Robert Wesolowski was awarded for his “innovative, collaborative teaching methods help to make STEM concepts accessible and fun for students by using hands-on activities to breakdown complex theories and concepts.” Wesolowski was recognized for adapting his curriculum to reflect emerging technology needs, and for ensuring that his students are prepared for tomorrow’s STEM careers.
Abstract
Recent increases in the demand for high strength sulfide stress cracking (SSC) resistant steel casing due to the development of High Pressure-High Temperature (HPHT) oil fields. A microalloyed high strength casing was developed and evaluated for mild sour SSC performance. The SSC resistance was evaluated using TM 0177 Methods A & D. Results of the development efforts and Pipe Mill trials showed that the newly developed C125 chemistry exhibited excellent toughness and exceeded the current requirements for mild SSC performance.

Speaker Bio
Riad Asfahani, FASM earned his master's degree in metallurgical engineering from Notre Dame University studying how phosphorus affected hydrogen embrittlement of Ni2Cr. From college he worked for Cabot Corporation developing processing routes for refractory (Ta, Ta-W, Nb-Ti, Ni-Mo) metals, especially focused on VAR and pilgering operations. He subsequently worked at US Steel developing new grades and processing for civil infrastructure and oil & gas industries. Riad developed many new steel grades including X80 for line pipe, C125 casing, X100 seamless liners, heavy wall X70 line pipe, P110 casing with improved toughness, and low carbon weathering grades with a low yield to tensile ratio for bridge development. In addition, Riad developed processes to manufacture heavy gauge plates with excellent internal soundness, high strength steels with controlled, accelerated cooling and other thermomechanical techniques to improve or enable processing. Riad has also been active within ASM serving as both a chairman of the Pittsburgh Chapter and a trustee for ASM International.
April Plant Tour with the Northwestern Pennsylvania Chapter of ASM

April 21, 2016

Tour of Elliott Group in Jeannette, PA
Host: Derrick Bauer

Elliott Company, in Jeannette, PA, hosted the ASM Pittsburgh and Northwestern Pennsylvania Chapters.

Following dinner at DeNunzio’s Restaurant in Jeannette, about 40 members of the Pittsburgh and Northwestern Pennsylvania Chapters assembled for a tour of the Elliott Group facility. The Elliott Group designs, manufactures, and services turbomachinery equipment, including centrifugal and axial compressors, steam turbines, power recovery expanders, and related auxiliary equipment such as lubrication, sealing and fueling systems used in oil & gas production and processing, refineries, chemical processing plants, steel mills, electricity generating stations, sugar mills, paper mills, plant oil processing plants, and municipal steam and waste facilities. Derrick Bauer, Scot Laney, Daniel McCullough, and Douglas Richards from Elliott Group led the tour.

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Engineering Team: Dr. Zee, Ed Larkin, Dr. George Bayer, Marty Lotono, Dr. Huiping Xu and Antonio DiNunno

Pittsburgh Chapter and NWPA Chapter members toured Elliott’s plant in Jeannette, PA
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Have a wonderful summer!

We hope you can join us at several monthly meetings next year where you can network with other professionals and learn about exciting industry topics. See you in the Fall!

ASM Pittsburgh Chapter Chair Dr. Dharma Maddala presenting a token of appreciation to Derrick Bauer, Supervising Engineer, Materials Engineering Department, Elliott Group, during the Pittsburgh Chapter and NWPA Chapter Joint meeting.
Thank you to all our Sustaining Member Companies

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<td>R.J. Lee Group Incorporated</td>
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<td>Allegheny Technologies Inc.</td>
<td>Solar Atmospheres Incorporated *</td>
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