May 26, 2017

To Whom It May Concern,

This letter is in support of the Material Advantage Student Chapter of Rensselaer Polytechnic Institute (RPI) in their pursuit of being recognized as a Chapter of Excellence of Material Advantage.

During the 2016-2017 academic year, the RPI Material Advantage Executive Board has hosted a variety of events, touching on networking, community, outreach as areas of focus. The chapter has worked with industry speakers and professionals in the area for professional development events. Throughout the year, social events for the community were hosted as means to relieve stress and connect with members of the department as well as other RPI departments. Outreach volunteers were trained new demonstrations and sent out to local events in the community, reinforcing ties with schools in the area as well as working to form new ties and create new opportunity. Further, Material Advantage worked to ensure attendance and participation in the Materials Science and Technology conference in Salt Lake City, UT.

In addition, the local chapter has worked to strengthen internally, focusing on organization. As a result, the chapter has developed means to manage data long term, effectively store materials and resources, and efficiently represent information to the community with an updated website and bulletin board. This organization has allowed the chapter to work more efficiently on a daily basis as well as communicate easily with fellow Material Advantage members.

Ultimately, the RPI Material Advantage Chapter has found success in internal development and participation within the community, providing networking, social, and outreach opportunity for students at RPI. The MS&E department is very proud and supportive of the efforts of the chapter. I have met with the Executive board on a regular basis throughout the academic year and observed the work done by the members of Material Advantage. As an advisor, I highly recommend the RPI Material Advantage Chapter for the Material Advantage Chapter of Excellence Award.

Sincerely,

Dan Lewis
Professor of Materials Science and Engineering
Rensselaer Polytechnic Institute Material Advantage Chapter Advisor
Rensselaer Polytechnic Institute Material Advantage Chapter

Chapter of Excellence Nomination

2016-2017 Academic Year
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1. Chapter Overview

2016-2017 Chapter Officers

Dan Lewis
(Faculty Advisor)

Anahit Hovhannisyan
(Chair)

Brian King
(Vice Chair)

Christine
(Secretary)

Fiona
(Treasurer)

Kathy
(Publicity Chair)

Justin Weinstein
(Outreach Chair)
2016-2017 Chapter Highlights

Career Development
- MS&T 2016
- Undergraduate Research Fair
- Professional Development Workshops
- Industry Speakers & Panels

Outreach
- Material Outreach Program
- 13 Outreach Events
- Approximately 465 K-12 students reached

Social Activities
- Ice Cream Social
- Pumpkin Decorating
- Holiday Celebrations
- Games Nights

Statistics

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<th>MS&amp;T Student Attendees</th>
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2. Programming

Rensselaer Polytechnic Institute (RPI) Material Advantage programming can be broken down into three distinct categories: career development, service and outreach, and social activities. These topics are strongly chapter themed, and will be discussed in greater detail in the following pages, while the main programs that originated from the chapter are described in detail here.

Over the 2016-2017 academic year, RPI Material Advantage chapter hosted 8 traditional General Body Meetings (GBMs) to inform members of upcoming events, opportunities available and ways that they could get involved in the chapter. These GBMs were designed to meet students’ different needs. Some GBMs were tailored towards professional development, such as GBMs offering members consultation for the upcoming career fair each semester. Others hosted speakers to provide networking opportunities.

The RPI Material Advantage chapter also hosted 10 social events. Some social programs include 4 holiday themed socials, and 2 games nights to help students de-stress. These events served as great opportunities to promote interactions between students and faculty as well as between students of different class years.

RPI Material Advantage continued the tradition of cultivating professional and academic development with the annual Undergraduate Research Fair (URF), a Professional Development GBM before each career fair, and extra help sessions for core courses in the Materials Engineering curriculum. The objective of the URF is to provide students with an opportunity to meet professors and graduate students from various research groups in order to find undergraduate research opportunities. Professional Development GBMs are held before career fairs to prepare our members for this important event by resume critiquing.

The last major branch that makes up this chapter of Material Advantage is the outreach program which provides services and outreach to both the RPI community and K-12 school in the surrounding districts. This outreach program is focused on introducing students to materials science and STEM topics as a whole. Material Outreach is a program that we developed to focus on teaching and unifying our volunteers. Volunteers choose a topic in materials science and develop a 10-15 minute presentation paired with interactive demonstrations to teach a specific concept of material science in an engaging way. To further introduce students to the engineering design process, the volunteers also develop open ended engineering design challenge prompts. Some specifically covered include shape memory alloys, ferromagnetic materials, material structure construction, and fiber optic technology. The Material Buddies demonstrate primarily in local elementary, middle, and high schools, as well as local science fairs and STEM events. Material Buddies has been made possible this year through generous funding from our MSE Department as well as grants from ASM.
2.1 **General Body Meetings (GBMs)**

**Ice Cream Social**
This year RPI Material Advantage continued the tradition of holding an Ice Cream Social as its first event of the year. This is a major recruiting event for the chapter by encouraging new first year students to socialize with upperclassmen while making ice cream sundaes. The Material Advantage officers gave an overview of the chapter and invited anyone interested to be involved.

**Professional Development GBM**
The RPI Material Advantage chapter hosts a professional development program every semester before the career fair hosted by RPI. The meetings open with a PowerPoint discussing general career fair information, a list of companies hiring Materials Engineers and advice on talking to recruiters. Freshman and sophomores are encouraged to attend for professional tips, resume critiques, cover letter help, and other advice from upperclassmen and graduate students. After the presentation, students are encouraged to mingle among class years and discuss previous internship, co-op and research experience.

**Class Registration GBMs**
The chapter hosted a meeting before class registration opened up to assist freshmen and sophomores in scheduling courses for the upcoming semester. Upperclassmen also aided students in creating “four-year plans” to ensure all graduation requirements would be met. Topics such as dual majoring, minoring, studying abroad, co-ops and the co-terminal program were discussed in depth. These GBMs served as a way to enhance the chapter’s ability to informally mentor students and reinforce bonds between class years.

**Applied Materials Speaker – Nathaniel Mowell**
Nathaniel Mowell, a 2013 graduate of Rensselaer Polytechnic Institute, spoke to the membership about his time at RPI and in the workforce. He introduced the science behind semiconductors and his job inspecting and reviewing defects in them. Students also brought resumes to the event and spoke to Mowell about potential internships and other work opportunities at Applied Materials.

**ASM Speaker Panel – Stephen Healey, Jennifer Schuttig, and John Sutlif**
Material Advantage brought three ASM members to speak to RPI students. Featured speakers included: Stephen Healey, a metallurgist; Jennifer Schuttig, a senior materials engineer; and John Sutlif, who has been a senior advisory scientist for 14 years and previously worked at General Electric for 9 years. The three speakers were featured on a
panel, with a selected moderator, and spoke about their educational background, work experience, and general life advice. The event became conversational and many of the students in attendance were vocally involved.

3. Career Development

RPI Material Advantage provides its members with various professional development opportunities. These opportunities include the Undergraduate Research Fair, MS&T Conference, local ASM dinners, and industrial GBMs. The chapter works closely with the Materials Science and Engineering Department, the School of Engineering, and the Eastern New York ASM chapter to prepare students for the future.

3.1 MATERIAL SCIENCE & TECHNOLOGY CONFERENCE (MS&T) 2016

RPI Material Advantage organized and funded five undergraduates to attend MS&T in Salt Lake City, Utah. This trip was funded by the RPI Materials Science and Engineering department and the Eastern New York ASM chapter. Students attended lectures, plant tours, and networking events. The following spring semester, each attendee prepared a short presentation about their experience to present at the Eastern New York ASM dinner.

Professional and Technical Lectures

Students attended professional development talks at MS&T’16 on topics such as career management and Professional Development Training in graduate school. Students also attended various technical talks, including ones given by fellow RPI faculty.

Networking

RPI Material Advantage members attended events and met students and professionals from across the globe. Events included the Chapter Leadership Workshop and a student networking mixer. Students had the chance to share their resumes, talk to people in their field of study, and discuss current research in many areas of material science.

ASM “DomesDay” Competition

A team of RPI Material Advantage members entered as one of twelve teams part of the ASM “DomesDay” Competition at the MS&T conference. The team’s project was scored based on mechanical strength when compressed using two parallel plates until failure, the aesthetics of the project, and an ‘elevator pitch’ given to the judges followed by questions from the judges and audience.

Team RPI posing after presenting an “elevator pitch” at Domes Day Competition (left). Image of competing dome (right).
3.3 Development Activities

Chapter Leadership Workshop at MS&T 2016

At MS&T, the current RPI MA board members attended the chapter leadership workshop and successfully collaborated on strategies to improve attendances, and fundraise while gain an understanding of the events hosted by other chapters. Officers also discussed the possibilities of establishing an officer network to connect Material Advantage chapters. A similar concept was discussed for all student members.

Undergraduate Research Fair (URF)

Professors and graduate students of the Materials Science and Engineering Department were invited to display research posters and inform interested students of possible research opportunities within the department. Almost all the labs in the Materials Research Center were present and able to answer any questions that undergraduate students had. This proved to be a good way to introduce graduate students to undergraduate students. Every year, this event allows students to find research opportunities.

ENGR 1600 – Material Science for Engineers Study Session

Study sessions for the materials science focused course for freshmen and sophomores was hosted before the class’s first and second cumulative exams for both the fall and spring semesters. One graduate liaison, as well as other volunteer graduate students were available to answer students’ questions on the material to be covered. Since ENGR 1600 is a required course for several engineering majors outside of materials engineering at RPI, this event attracted many students from different engineering disciplines across campus.

Business Cards

Early in the fall semester, the RPI Material Advantage chapter offered its members the opportunity to order MA business cards to further help with professional networking. The order was placed early enough in the semester so that students could use them at the on-campus career fair. The business cards contained information such as the student’s name, major, class year, email address and LinkedIn profile link.

3.4 Eastern New York ASM Dinners

ASM-CDMMS Poster & Micrograph Contest and Exhibition – November 2016

The Materials Poster & Micrograph Contest and Exhibition is an event held every year by ASM and CDMMS. Often held in various locations within the area, this year it was held in RPI. Although the contests and dinner are not organized by Material Advantage, we are responsible for advertising the event and supplying poster stands/boards for the contestants. The Materials Poster & Micrograph Contest and Exhibition is held to encourage both graduate and undergraduate students to showcase their research. An award is offered for the winners in the graduate, undergraduate, and micrograph categories for outstanding poster research and micrograph display. In addition, the dinner offers students the opportunity to network with professors and individuals from the industry.
Eastern New York ASM MS&T Presentations – November 2016

ASM helped fund five RPI students to attend MS&T in Salt Lake City, Utah. Two of these students prepared presentations to give at the April ASM dinner to speak about the projects they were involved in during the trip, as well as their overall experiences.

Eastern New York ASM Scholarship and Award Banquet – May 2017

Students were able to network with industry professionals and professors before the dinner and award ceremony. These awards included inductions into the Materials Honor Society, Alpha Sigma Mu. The 2017 Geisler Award winner was announced, recognizing an outstanding young materials engineer from the Eastern NY ASM Chapter who has made significant contributions to the materials engineering field before the age of 40. Two undergraduate students and one graduate student from RPI were also awarded the Eastern NY ASM chapter scholarships. The 2016 Geisler Award winner gave a presentation on their current work in materials science.

4. Service

RPI Material Advantage provides service and outreach to both local K-12 students and the RPI campus. Our educational outreach program, Material Buddies, has been successfully growing and developing over the past couple of years. The goal of the program is to spark future scientists’ and engineers’ interests in materials and expose undergraduate students to community service and outreach opportunities. We place a heavy emphasis on cultivating the understanding of materials concepts on multiple levels from the elementary school children we teach to the undergraduate students who volunteer with Material Buddies. This approach has created both a fun experience and sustainability in our program.

4.1 Campus Outreach

Navigating Rensselaer and Beyond, Materials Gastronomy – August 2016

This event was held in partnership with the First Year Experience office and Navigating Rensselaer & Beyond. MA hosted a short information session on the basics of materials engineering, a lab tour, and demonstrations. The demonstration included making ice cream with liquid nitrogen and tempered chocolate. A short social with current students took place after the demos.

Activities Fair – September 2016

RPI Material Advantage held a table at the annual activities fair to showcase the chapter’s highlights and materials science concepts. The members demonstrated one of the outreach activities, freezing marshmallows with liquid Nitrogen, to draw interest from students. Material Advantage and material science pun stickers were also distributed. This event serves as the incoming class’s introduction and first impression to the RPI Material Advantage Chapter.

Medalist Open House – September 2016

This Open House is held annually to award and congratulate high school students who have won the RPI Medalist Scholarship. RPI Material Advantage helped introduce Medalists to the RPI Materials Science and Engineering (MSE) Department by showcasing the
Materials Research Center (MRC) and the materials major to these students. Prospective RPI students were able to tour the Electron Microscopy lab as well as the nanoscale characterization lab, and ask questions to a group of current undergraduate Materials Engineering students. A group of volunteers also performed materials demonstrations outside of the MRC.

Fall Open House – October 2016
This Open House is an annual event for high school students interested in attending RPI. RPI Material Advantage chapter recruited volunteers who helped the RPI MSE department showcase the MRC and the materials engineering major to these students. A group of students volunteered at a demonstration table, while others answered questions posed by prospective students and their parents in the student lounge. Other students led short lab tours of various labs in the MRC.

Accepted Students’ Day – April 2017
This is an event where RPI Material Advantage helps the RPI MSE Department promote the department and the materials science and engineering major to prospective freshmen. Some RPI MA members held a demonstration table in the Polymer Center, answered questions and gave lab tours to the prospective students and their families. Others hosted a materials engineering major information table in the Darrin Communication Center. There, they showcased computer simulations and simple demonstrations. The students were also able to talk to the visitors about co-ops, internships, and research experiences.

4.2 K-12 Outreach (Material Outreach)
In an effort to continually improve the outreach events organized by RPI Material Advantage, the Material Outreach program was developed in 2012. Material Outreach is a program focused on the development of the volunteers who interact with students in the Albany area through teaching demonstrations. The goal of this program is to create sustainability by training knowledgeable and enthusiastic volunteers to effectively communicate the scientific concepts behind the demonstrations. In order to achieve the overall goals of the program, volunteers need to acquire a strong understanding of the scientific concepts being demonstrated, develop a well-organized 10 minute presentation, and provide real life problems and solutions to help students better understand the connections between science and everyday life. Since the implementation of this program, new learning and hands-on activities have been developed, and more K-12 students are reach every year. Material Outreach is also many students’ first experience with combining event planning, leadership, and public speaking. The practice of these skills and involvement in the chapter through Material Outreach also serves as a stepping stone for the majority of Material Advantage officers before they are elected into their positions.

Niskayuna Outreach – November 2016
This event is an annual outreach event at Niskayuna Central High School that Material Buddies has participated in for multiple years. During an 80 minute class, RPI MA
volunteers presented two demonstration for the students. Topics and projects included shape memory alloys and heat treatment. The topics introduced the applications of specific materials and the effects of heat treatment. The RPI students discussed what materials science is and the high school students showed strong interest in the topics discussed, while also asking questions about material specific curriculum at RPI.

**Exploring Engineering Day – February 2017**
Exploring Engineering Day is an annual event held by the RPI School of Engineering as a celebration of National Engineers Week. RPI Material Advantage exhibited a hands on activity called “Fun with Polymers” which demonstrated the four types of polymers and their real life applications. These applications included fake snow and potting soil.

**Paige Math and Science Night – March 2017**
One of the responsibilities of the Outreach program in Material Advantage (MA) is spreading STEM interest among young students in the local area. Paige elementary school, located in Schenectady, holds an annual science fair among its students and invites MA from RPI to contribute. Outreach volunteers attend the science fair with one to two demonstrations for the elementary school students. This year, MA presented a glass transition temperature demonstration with racquet balls and liquid nitrogen, and surface area with alka-seltzer tablets and water. Both demos include interactive questions to the students regarding the outcome of each demonstration. The goal of this event is to introduce developed scientific concepts and advanced tools, such as liquid nitrogen, to young children. The event was successful as many students returned to observe the demonstrations and were able to explain the phenomenon they were previously taught. In addition, the distribution of liquid nitrogen marshmallows allowed students to interact with liquid nitrogen in a safe manner and apply the idea of glass transition temperature, for example, to objects they see on a daily basis.

**Shenendehowa Science and Health Discovery Night – April 2017**
This event held in the Shenendehowa School District annually attracts K-12 students and their families, with elementary students being the majority of the audience. The RPI Material buddies were posted at a table to demonstrate various materials engineering concepts and topics, and were adaptable for different ages. The demonstrations focused on cross-linked polymers – their structure shown by paper clips and their function shown by fake snow.

5. **Social Activities**
While RPI Material Advantage chapter dedicates most of its time to outreach and professional development, social activities are also viewed as a crucial tool to build a successful network between students and alumni, as well as within our department. This year, to highlight the diversity within the Materials Science and Engineering Department, the RPI Material Advantage chapter held several cultural social activities, such as the End of Year Potluck Celebration, a pumpkin
decorating event, and a Chinese New Year Celebration. A featured social activity that was offered this year was the installation of several games nights. These activities were developed to bring the community together and to build a causal atmosphere within the department. Recruitment is done simultaneously at many of our social activities if there are students who have never been involved in Material Advantage before.

Activities Fair
RPI Material Advantage held a table at the annual activities fair to showcase the chapter’s highlights and introduce materials science. RPI Material Advantage demonstrated one of the Material Buddies outreach activities, freezing marshmallows with liquid Nitrogen, to draw interest from students.

Breakfast for Dinner Meet and Greet
The Breakfast for Dinner Meet and Greet combined with Games Night was held to welcome new student members into the club as well as attract the freshman class. In addition, it served to initiate the start of the academic school year. Overall, this was a wonderful event that successfully spread the word about Material Advantage to the student body. Bacon and waffles, along with coffee and tea, were served as food options in order to deviate from standard pizza.

Holiday Potluck Celebration
The Holiday Potluck celebration is now an annual event put on by the RPI Material Advantage chapter and the Materials Engineering Department. For the third year in a row, students and faculty were encouraged to bring a dish to pass around at the end of the fall semester, right before finals week started. This event has become the chapter’s most successful event with high attendance from faculty, graduate and undergraduate students. This event provides a more relaxed environment for the undergraduate students to interact with their professors and teacher’s assistants while also experiencing food from around the world. A group of students even gathered to perform classical renditions of holiday music.

Games Night
Hosting games nights last year proved to be a big success, so the event was carried into this year. Three games nights were held, typically after weeks where there had been many midterms given throughout the department. One night, in particular, featured a mac and cheese platter.

Chinese New Year Celebration
To promote the cultural diversity in the Materials Science and Engineering department, the RPI Material Advantage chapter celebrated Chinese New Year for the second year in a row. The lounge in the Materials Research Center (MRC) was decorated with dragons and paper cutouts, and faculties and students were encouraged to dress in red. Attendees learned about Chinese culture and customs and were able to enjoy cultural dishes to celebrate the New Year.

Saint Patrick’s Day Celebration
A casual, social event open to all graduate and undergraduate students with a focus of making freshman and underclassmen more comfortable with their peers. Green waffles as well as a variety of other green foods and drinks were featured to celebrate the occasion.

**End of Year Celebration**

Each year, the RPI MA chapter hosts an end of the year BBQ in May in collaboration with the MSE Department. This event takes place during the study days before finals week to reduce stress and celebrate the completion of another year with friends and colleagues. Due to poor weather, the Material Advantage E-board decided to host the event indoors with a sandwich bar accessible to all guests. The added personalization and option to grill the sandwiches or wraps was enjoyed by all students who attended.

**6. Chapter Management**

RPI Material Advantage Chapter is run by an executive board of seven officers including chair, vice chair, secretary, treasure, publicity chair, outreach chair, social chair and associate liaisons that meet weekly for one hour. Associate liaisons, including one freshman and two graduate students, attend weekly meetings to represent their respective groups, particularly when events are planned. The meetings are directed by the chair with each executive board member providing input related to their role. Officers are encouraged to take on events that arise throughout the semester, which provides them with multiple professional development opportunities.

**6.1 Officer Duties**

**Chair**

The chair conducts all meetings of the chapter, sets the weekly agenda, delegates committee responsibilities, and makes committee appointments. The chair is the point of contact to the Material Advantage advisor, National Material Advantage, the Eastern NY chapter of ASM, the RPI School of Engineering, and the RPI Materials Science and Engineering Department. The chair also organizes the annual trip to MS&T.

**Vice Chair**

The vice chair organizes, plans, and runs all general body meetings. This includes setting the semester schedule, reserving rooms, and acquiring resources needed such as projectors. The vice chair also plans and organizes social activities.

**Secretary**

The secretary maintains all chapter records and keeps meeting minutes at all Executive Board meetings. This person acts as a correspondent for the chapter and fulfills all reporting requirements, such as annual reports. The secretary submits information to society headquarters to highlight chapter activities. The secretary also takes on any other organizational duties assigned by the chair.

**Treasurer**

The treasurer receives, records, and deposits all funds paid to the chapter. This person disburses the funds as authorized by the Executive Board and prepares financial reports for the chapter and society headquarters, while also keeping track of available scholarships.
and grants. Further, the treasurer helps generate new fundraising ideas and oversees bake sales.

Publicity Chair
The publicity chair oversees the bulletin board in the Materials Research Center and advertises general body meetings and social events with emails and posters. The publicity chair also writes and sends out weekly newsletters to keep the members updated. This person also maintains the chapter website and oversees activity on the chapter’s Facebook page.

Outreach Chair
The outreach chair coordinates all school visits and is the point of contact for the schools, teachers, and students going on each outreach event. The outreach chair organizes bi-weekly meetings for Material Buddies and keeps track of supplies for outreach events, while training volunteers and compiling the Outreach Grant.

Freshman Liaison
The Freshman Liaison acts as the interface between freshmen members, potential freshmen members, and the chapter. This person represents the interests of freshmen and thinks of ways to involve and recruit more first year students.

Graduate Student Liaisons
Graduate Student Liaisons act as the primary interface between graduate members and the chapter. In addition, they represent the interests of graduate members and their availability when planning events.

Faculty Advisor
Professor Daniel Lewis is the primary contact with Material Advantage headquarters and receives chapter materials for distribution to officers. He advises chapter officers on forming and implementing goals, objectives, and programs.

6.2 Organization and Procedures
Recruiting Activities
At the beginning of each fall semester, Material Advantage recruits heavily for new members. Material Advantage participates in several events, including Navigating Rensselaer & Beyond, an Ice Cream Social and the on campus Activity Fairs aimed towards the incoming freshman. This exposes students to the Materials Science and Engineering department and the benefit of being a member of Material Advantage. Previously, the chapter relied on posters and in-class verbal advertising to promote events. This year, RPI Material Advantage actively used the Facebook page and created a new website to display relevant information to members. In addition, a bulletin board outside the lounge area in the Materials Research Center was renovated with a calendar and recent images.
Executive Board Elections

Elections are held every spring semester in March or April. Advertising is initiated at least a month in advance with email notifications and announcements at general body meetings. Candidates are required to fill out a survey and send a platform describing their qualifications, involvement, and reasons for running for the current position. The chapter then holds a General Body Meeting to vote for all positions.

Training

Shortly after elections, elected officers begin attending Executive Board meetings, and current officers spend a month helping elected members transition into their new roles. The old officers provide a summary of their work for the past year and discuss it with the new officers. The officers are expected to be the most involved in the chapter, attending nearly every event. At the end of the semester, the Executive Board also holds a spring planning meeting where officers set their personal goals for the next academic year.

Finances

The treasurer oversees the finances of the chapter. The RPI Student Union offers a bank account service for student organizations. The treasurer keeps records and makes deposits and withdrawals for reimbursements. In order to keep track of finances, a budget is constructed based on interest and past attendance of events from the chapter’s curated activity reports.

Record Keeping

RPI Material Advantage keeps meticulous records of events and chapter information. The officers maintain a shared folder in Googledocs to share files for the current year and up to 3 years previous. Records from years before are stored on a hard drive in the office of our faculty advisor as well as on a CD. The files can be broken down into Agendas, Activity Reports, Events, and other important information. The record keeping ensures that the knowledge acquired by officers can be shared from year to year, and when planning an event, officers can use these resources as a guide. The chapter also maintains a Google calendar to keep track of events and meeting times. There is one calendar for board members, and another for all Material Advantage members.

Storage

Material Advantage gained additional storage this year, with the help of the Materials Science & Engineering Department. As new Material Outreach demonstrations were developed and, as a result, new materials ordered, there was limited storage space available. However, an office was gained through conversation with the department. This allowed for the chapter to properly and safely store supplies and increase organization for events.

Communication

The chapter’s website is maintained by the Publicity Chair. This site features information about upcoming events through a link to the organization’s Google Calendar, membership, officer contacts, academic references, previous job records, and scholarship information. The publicity chair also sends a weekly email to the RPI Material Advantage list with event
information and updates. The Executive Board also maintains a bulletin board outside of the student lounge and a RPI Material Advantage Facebook page which utilizes Facebook Events to invite students.

6.3 EXECUTIVE BOARD DEVELOPMENT

Dinner at Celadon Thai

The E-board gathered to share dinner together over Thai food at the start of the academic year. This was a great way to discuss interests and learn about one another while enjoying a wonderful meal.

Brunch at Whistling Kettle

After elections, the E-board members, old and new, gathered for brunch at the famous Whistling Kettle. This was a great way to share goals and interests of Material Advantage while maintaining a casual and comfortable environment.

6.4 CONTINUATION OF EXCELLENCE

RPI Material Advantage chapter’s continuation of success is built on succession planning, meticulous record keeping, and an active chapter membership base. Succession planning has involved creating opportunities for general members to gain exposure to officer positions through shadowing Executive Board meetings. The RPI Material Advantage general body has made the organization successful by taking advantage of the resources provided and by being involved in networking opportunities and events. The chapter offers its members events that cover a wide spectrum of interests from industry speakers and plant tours to professional and academic meetings and social events like holiday celebrations and potlucks.

RPI Material Advantage is proud to be one of the most active and successful professional societies on campus through a balance of these social and professional development programs, as well as outreach events. Professor and industrial talks and plant tours have increased technical knowledge while conference trips for MS&T, ASM dinners, and general body meetings have increased our networking skills. Overall, our chapter upholds its distinguished program by continuously recruiting active members, developing new programs, and continuing to receive support from our advisor and our department.
7. Calendar of Events

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<th>Event</th>
<th>Date</th>
<th>RPI Attendance</th>
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Rensselaer Polytechnic Material Advantage Student Chapter

By-Laws

Document Revision History

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Part I
By-Laws

Section I: Chapter Name

i. The official name of this student chapter shall be Rensselaer Polytechnic Institute Material Advantage Student Chapter of the American Ceramic Society, the Association for Iron and Steel Technology, ASM International and The Minerals, Metals & Materials Society.

ii. “Rensselaer Polytechnic Institute Material Advantage Student Chapter” may be used as an appropriate abbreviated name.

iii. This Chapter shall be chartered by the Board of Directors of the American Ceramic Society (herein after ACerS), the Board of Directors of the Association of Iron and Steel Technology (herein after called AIST), the Board of Trustees of ASM International (herein after called ASM) and the Board of Directors of The Minerals, Metals & Materials Society (herein after called TMS).

iv. This Chapter shall be governed at all times by the provisions of The Constitution of ACerS, the Bylaws of AIST, the Constitution and the Rules for the Government of ASM and the Bylaws of TMS.

v. Any alterations made to the chapter’s name must be approved by both the Student Union of Rensselaer Polytechnic Institute (herein after called RPI) and the Faculty Advisor.
Section II: Purpose

i. The purpose of this Chapter shall be to promote among its members and community a self-sought increasing knowledge of metallurgy, ceramics, materials science and engineering and all its branches and to instill a professional pride in their chosen life work.

ii. This chapter shall provide social gatherings within the RPI Department of Material Science and Engineering to allow for student bonding and growth.

iii. This chapter’s purpose must also extend externally, allowing and encouraging professional development opportunities for members with industrial companies or individuals.
Section III: Board of Directors

1. Duties of the Board of Directors
   a. The Board of Directors is comprised of the President, Vice-President, Secretary, Treasurer, and auxiliary committee directors.
   b. The Board of directors shall have the control and general management of the affairs and business of the Rensselaer Polytechnic Material Advantage Student Chapter except as herein otherwise provided. They shall appoint persons to execute all contracts and agreements made on behalf of the Rensselaer Polytechnic Material Advantage Student Chapter. Such Directors shall in all cases act as a Board, regularly convene, and they may adopt such rules and regulations for the conduct of their meeting and the management of the Rensselaer Polytechnic Material Advantage Student Chapter as they may deem proper, not inconsistent with these By-Laws and the Laws of the State of New York.
   c. The Board shall appoint and dissolve other committees as necessary and their chairmen and all committee members.
   d. The Board shall assume any other obligations imposed upon them in these By-Laws.
   e. The Board shall establish regular events which fulfill the purpose of the chapter.

2. Meeting of the Board of Directors
   a. The Board shall have an open meeting at least once each two weeks during the fall and spring academic semesters. The Board may meet at such other times as it shall determine. Special Meetings, which may be closed meetings, of the Board of Directors may be called by the President at any time, and shall be called by any member of the board at any time. Notice of such special meetings shall be given to each Director by the Secretary at least three (3) days prior to the date of such special meeting, unless urgency is required.
   b. All scheduled non-special meetings are to be open to the student body and RPI community.
   c. Non-RPI community members may attend meetings of the Board of Directors with permission of the chapter president.

3. Quorum and Board of Directors Voting
   a. A Quorum for all Board Meetings shall be a presence of a two-thirds (2/3) majority of the current directors.
   b. Only if Quorum is met shall voting be held.
c. Directors may abstain, vote against, or vote in favor of any action during board meetings.
d. For a directive or action to resolve, the Board shall require a simple majority of greater than fifty percent (>50%).
e. In the event of a tie breaker in Board Meetings, the option of abstaining from a vote is first suspended. If a tie is still present, the president shall decide the resolution.
f. The President and Vice-President of the Chapter may choose to veto any resolution or action if in agreement to veto.
g. Part 1, Section III, Article 3, Statement f, does not apply to the resolution of impeachment of an officer.

4. Faculty Advisor
   a. One faculty member of the RPI Material Science & Engineering Department shall be selected by the Board of Directors to serve as the Faculty Advisor to the Chapter.
b. The Faculty Advisor may call a special meeting which holds the same precedence of that of a special meeting called by the President.
c. In the event of a Faculty Advisor, the board of directors shall agree on an individual and appoint him/her as the official advisor.
Section IV: Officers

1. General Architecture
   a. The officers of this student chapter shall consist of a President, Vice-President, Secretary, and a Treasurer.
   b. All Chapter documents, financial reports, and funds shall be left with the Faculty Advisor for any vacation period when the college or university is not in session.
   c. The term of an officer is to start on June 1st will conclude on May 31st of the following year. All term lengths are one calendar year in length unless otherwise specified.
      i. If the submission of Chapter of Excellence is shifted to a date other than June 1st, officer terms shall be shifted accordingly.

2. Election of Officers
   a. Elections are to be held annually during the spring semester, approximately six (6) weeks prior to the end of the semester.
   b. Elections are to be scheduled and advertised a minimum of thirty (30) calendar days prior to the event.
   c. Elections shall be considered a public forum in addition to a meeting of the board of directors. Quorum of officers therefore must be present.
   d. An election coordinator shall be appointed by the Board of Directors a minimum of three (3) weeks prior to the election.
      i. The election coordinator shall organize and moderate elections. Absentee votes will also be submitted to the election coordinator.
   e. Voter Eligibility
      i. A voter shall be a current undergraduate student of the Rensselaer Polytechnic Institute or a graduate of the prior semester.
      ii. Voters must provide their Rensselaer Identification Number or Student Identification if ambiguity of student status arises.
      iii. Voters must have attended a minimum of three (3) Rensselaer Polytechnic Institute Material Advantage Student Chapter events over the course of the respective academic year to obtain voting status.
         i. Attendance shall be confirmed by the Secretary.
      iv. Co-Terminal students are to be considered undergraduates.
      v. Graduate students who have attended an excess of five (5) Rensselaer Polytechnic Institute Material Advantage Student Chapter events over the course of the respective academic year are also eligible to vote in elections.
      vi. Shall an officer become impeached from their respective position, he/she shall be ineligible to vote in any general body election.
   f. Absentee Voting
i. If a student is unable to be physically present at elections, absentee voting is available by contacting the election coordinator.

ii. An absentee voter must meet all the voter eligibility criteria stated in the aforementioned article.

iii. Absentee votes must be submitted to the election coordinator a minimum of forty-eight (48) hours prior to the start of elections.

g. Candidate Eligibility

i. A candidate shall comply with the eligibility requirements for that of a voter in addition to those of a candidate.

ii. A candidate must be a Freshman, Sophomore, or Junior unless expected to remain at RPI as a student for the following academic year.

iii. Candidates may choose to run for multiple positions but can only be elected for one officer position.

iv. A candidate must be a member of the National Material Advantage Organization or pledge to join following election as an officer.

v. An application of candidacy shall be submitted to the Board of Directors or Election Coordinator.

vi. Candidates permit the usage and advertisement of their provided information, including but not limited to, name, platform, class year, and major.

vii. A candidate shall be in good judicial and academic standing in accordance to the Rensselaer Polytechnic Institute Student Handbook.

viii. Candidates may be nominated or self-nominated during the proceeding of the election but will not appear on the ballot distributed to absentee voters.

ix. Candidates may still run in absence of being presence with approval of the Election Coordinator or Board of Directors.

x. There are no term limits on any officer position.

h. Quorum

i. Elections shall require a quorum of the current Board of Directors as outlined in Section III, Article 3 of the Rensselaer Polytechnic Institute Material Advantage Student Chapter By-Laws.

ii. A minimum of five (5) non-officer eligible voters must be present to establish quorum.

iii. Submitted absentee votes shall count towards the quorum requirements.

iv. If quorum is established, another election shall be held within two (2) weeks of the failed election.

i. Voting Procedures
i. Ballots for each position including the candidates shall be produced for the election.

ii. An opportunity for writing in a non-listed candidate shall be included on the ballots.

iii. Voters may abstain from voting for any position.

iv. The order of elections shall take place in the following sequence:
   1) President
   2) Vice-President
   3) Treasurer
   4) Secretary
   5) Committee Directors

v. In the event of a single candidate election for a position, voters may cast a vote of no confidence which shall act as a vote against the candidate.

vi. Ballots shall be distributed and collected after the speeches and discussion of the candidates for each position.

vii. Individual votes are to remain anonymous but the final counts shall be shared during the elections.

viii. Counts of votes for each position shall be recorded.

ix. A simple majority of greater than fifty percent (>50%) is required for election to a position.

x. In the event of a tie between candidates, speeches shall be delivered by the candidates then a reelection will be held.

xi. In the event of a second tie after a reelection, a committee comprised of the President, Vice-President, and Faculty Advisor shall vote to decide.

j. Conclusion of Elections
   a. Once concluded, the Assistant to the Department Head of the Department of Material Science and Engineering is to be notified of the results of the election.
   b. The results of the election shall be publicized within the chapter.
   c. Information regarding the officers shall be recorded in Part 4 of the Rensselaer Polytechnic Institute Material Advantage Student Chapter By-Laws.

k. Vacant Officer Positions
   a. In the event of an officer position being vacant after elections, the current officer may choose to extend their term an additional year.
   b. If declined by the current officer, an application created by the Board of Directors is to be created and distributed.
   c. Applicants are to be considered by the Board of Directors and voted on.
   d. The selected applicant is then to be appointed to the vacant officer position.
e. Conclusion of Elections is to be followed for the appointed officer.

3. Officer Transition Period
   a. The transition period consists of the time frame between the conclusion of elections and June first (1).
   b. Newly elected officers shall be trained by their respective predecessor.
   c. After one (1) month of the transition period, officer elects shall demonstrate ability to complete the respective duties of the position. The board of directors shall monitor this and provide feedback and ensure proper procedures.
   d. Administrative privileges shall be granted to the officers elect during this period when seen fit by the President.

4. Leave of Absence
   a. Shall an officer require a leave of absence, a suitable interim officer shall be appointed for the designated period.
   b. During the leave of absence, all powers and responsibility shall be transferred to the interim officer and the Board of Directors.
   c. The interim officer shall be directed to by the by-laws of the chapter and be reflected in Part 3 and Part 4 of the by-laws.

5. Resignation and Expulsion of Officers
   a. All resignations of officers shall be tendered to the Board in writing. They shall be effective upon approval by the Board.
   b. A resignation shall not be granted if a monetary balance is due to the Rensselaer Polytechnic Material Advantage Student Chapter.
   c. All properties held by the individual which are property of the Rensselaer Polytechnic Material Advantage Student Chapter must be returned prior to approval of the resignation.
   d. Expulsion of an officer may be considered when necessary as deemed by the officers. Prior to expulsion, the officer must be issued a warning of possible impeachment at least three (3) academic weeks prior to voting for impeachment.
   e. The reasons for expulsion shall be recorded in a written document.
   f. A two-thirds (2/3) majority shall be required to pass any motion of impeachment of an officer.
   g. If reasons of expulsion are due to a violation of the Rensselaer Polytechnic Institute Student Code of Conduct or local, state, or federal law, a warning of impeachment is not required to be issued.
   h. Any resignation, expulsion, or change of officers shall be reflected in Part 4 of the by-laws.
i. A suitable interim officer shall be appointed by the Board of Directors for the remainder of the former officer’s term.

j. The Faculty Advisor shall be notified of the change in officers and resolution.

Section V: Duties of the Officers

The duties and power of the officers of the Rensselaer Polytechnic Material Advantage Student Chapter shall be as follows:

1. **PRESIDENT**
   a. The President shall preside at all meetings of the membership and shall chair all meetings of the Board of Directors.
   b. The President is responsible for the well doing of the organization and must ensure good standing with the American Ceramic Society, the Board of Directors of the Association of Iron and Steel Technology, the Board of Trustees of ASM International, the Board of Directors of The Minerals, Metals & Materials Society, Student Union of Rensselaer Polytechnic Institute, and Rensselaer Polytechnic Institute.
   c. The President is responsible for the arraignment of long distance travel to conferences or other academic affairs.
   d. If a position is to become vacant of another member of the Board of Directors, the President is responsible to appoint a new officer.
   e. Budgeting of large purchases and approval must be done by the President.
   f. The President shall assume all executive duties not otherwise delegated to others by these bylaws.

2. **VICE-PRESIDENT**
   a. During the absence or inability of the President to render and perform his duties or exercise his/her powers, as set forth in these By-Laws or in the acts under which the Rensselaer Polytechnic Material Advantage Student Chapter is organized, the same shall be performed and exercised by the Vice-President.
   b. When so acting in place of the president, he/she shall have all the powers and be subject to all the responsibilities hereby given to or imposed upon such President.
   c. The Vice-President shall also assist the President in the performance of his/her duties.
   d. The Vice-President shall also act as the primary organizer of “Professional Development Events.” Acting as a point of contact for external individuals and a recruiter of speakers and company involvement.

3. **TREASURER**
   a. The Treasurer shall receive and disperse all Rensselaer Polytechnic Material Advantage Student Chapter monies and maintain the Rensselaer Polytechnic Material Advantage Student Chapter budget.
b. The Treasurer shall also maintain financial records following acceptable accounting procedures which shall be set up as follows: (1) The records shall conform to the informational and disclosure requirements of the Internal Revenue Service; (2) The records shall provide information as to all costs, revenues, and expenses.

c. The Treasurer shall prepare for the examination of the Board and the membership a statement of revenues and expenses along with the guidelines of the above paragraph, part (2), once each calendar month. Once each year, the Treasurer shall present a comparative income statement and balance sheet to the membership. This report shall be appended to the Annual Report.

d. The Treasurer shall return to vendors all requests for payment which do not fulfill the requirements of complete and proper documentation.

e. The Treasurer shall collect dues and enroll any new members to the National Material Advantage Organization.

4. SECRETARY

a. The Secretary shall keep records of each meeting for the permanent chapter records. The Secretary shall also be responsible for submitting brief reports of all activities for publication by ACerS, AIST, ASM and TMS.

b. The Secretary shall forward an Annual Report, prepared by the Executive Committee, to ASM Headquarters before June 1 of each year, summarizing the activities of the Chapter during the preceding year and listing the newly elected officers for the following year.

c. The Secretary shall handle all Rensselaer Polytechnic Material Advantage Student Chapter correspondence unless specified by the President or Vice-President.

d. The Secretary shall compile and publish the active membership list of the chapter.
Section VI: Committees

1. Outreach Committee
   a) The outreach Committee is to be led by an elected director.
   b) The position of outreach director may be shared by more than one person and act as the co-directors.
   c) The director(s) are to organize outreach meetings, schedule events, and encourage new members to join.
   d) Director(s) are to hold full board power as other officers.

2. Publicity Committee
   a) There is currently no Publicity Committee but may be added at any time at the discretion of the Board of Directors.
Section VII: Membership

1. Types of Membership
   a) Local Chapter Member: A membership to only the Rensselaer Polytechnic Chapter. The dues for this membership are set by the Board of Directors on an annual basis.
   b) National Member: A membership to the National Material Advantage Society. This membership is required to attend official national events such as MS&T. This is also required for all officers.

2. Eligibility for Membership
   a) Any currently enrolled Rensselaer Polytechnic Institute Student is eligible for a Student Membership.
   b) Both Undergraduates and Graduate students are eligible.
Section VIII: Dues

3. *Local Chapter Membership Dues*
   a. Local chapter dues shall be set by the Board of Directors at the first meeting of each semesters.
   b. Dues for the local chapter may be set at zero (0) dollars.
   c. Dues are to be collected on a semester basis but members may choose to pay for multiple semesters at a time.

4. *National Membership Dues*
   a. The annual dues and membership length for national membership shall be determined by the Board of Directors of the American Ceramic Society, the Board of Directors of the Association of Iron and Steel Technology, the Board of Trustees of ASM International, and the Board of Directors of The Minerals, Metals & Materials Society.
   b. Dues for national membership may be collected by the treasurer and paid to the appropriate location.
Section XII: Merchandise and Sales

1) Requirements
   a) All merchandise must be approved by the Faculty Advisor.
   b) All apparel must be approved by the RPI Student Union.
   c) Approved vendors shall be used to place all orders.
   d) No offensive or unprofessional content shall be produced as deemed by Director of Student Activities.
Section XV: Unlawful Discrimination Policy

1. The Rensselaer Polytechnic Material Advantage Student Chapter confirms its support of the principles and practices of nondiscrimination and equality regardless of race, religion, sex, age, sexual orientation or physical handicap, in its employment and in all of its programs, activities, and opportunities available to its members, in compliance with US law 20 USC §1681(a).

2. All actions and policies of the chapter shall conform to the policies of the Board of Trustees of Rensselaer Polytechnic Institute, State and Federal Laws such as those listed in Title 20 of the US Law Code.

3. All actions and policies of the chapter are to comply with the RPI Student Handbook and Code of Conduct.
Section XVI: Amendments

- This Student Chapter may amend its Bylaws in any fashion consistent with the Constitution of ACerS, the Bylaws of AIST, the Constitution and Rules for the Government of ASM, and the Bylaws of TMS. Such amendments, after adoption by two-thirds vote of the Chapter membership, shall be filed with the Material Advantage Chapter Program.
Section XVII: Professional Chapter Affiliation

i. The Rensselaer Polytechnic Institute Material Advantage Student Chapter may amend its By-Laws in any fashion consistent with the Constitution of ACerS, the By-Laws of AIST, the Constitution and Rules for the Government of ASM and the By-Laws of TMS. Such amendments, after adoption by two-thirds vote of the Chapter membership, shall be filed with the Material Advantage Chapter Program.
Section XVIII: Distribution of By-Laws

- The By-Laws shall be publicly available.
- A copy of the By-Laws shall be provided to the Faculty Advisor and Department after any modifications.
- The By-Laws shall be included with the Chapter of Excellence Report Annually.
Section XIX: Dissolution of Chapter

- If for any reason this Material Advantage Student Chapter is dissolved, the Charter should be returned to the Material Advantage Chapter Program. All funds or other property remaining after payment of debts and obligations of this Student Chapter shall be transferred to the Rensselaer Polytechnic Institute Department of Material Science.
Part 2
Acknowledgment of By-Laws and Adoption

The adoption of By-Laws shall require the agreement of both the current President in addition to the agreement of a former President. This shall be reflected in the below statement.

Signatory #1:
I Justin Weinstein hereby understand, agree, and promote the aforementioned document of the Rensselaer Polytechnic Institute Material Advantage Student Chapter By-Laws (Version 1.1) and consent to the adoption by the chapter as the 2017-2018 Academic Year President on the date 6/1/2017.
Signature: [Signature]

Signatory #2:
I Anahit Hovhannisyan hereby understand, agree, and promote the aforementioned document of the Rensselaer Polytechnic Institute Material Advantage Student Chapter By-Laws (Version 1.1) and consent to the adoption by the chapter as the 2016-2017 Academic Year President on the date 6/1/2016.
Signature: [Signature]