# **Georgia Tech Material Advantage Chapter**



### Chapter of Excellence Application 2019 - 2020

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### **Chapter Overview**

The 2019-2020 school year was the first year back for the Georgia Tech Material Advantage Chapter (otherwise known as Material Advantage at Georgia Tech, or MAGT) after a brief hiatus. MAGT was revived to suit the needs of the Materials Science and Engineering (MSE) community at Georgia Tech and bridge the gap between undergraduate students and the materials science industry. The chapter's purpose is to provide members with opportunities to network with peers, faculty, and industry professionals and foster the development of their technical and interpersonal skills. In just one year, the Georgia Tech Material Advantage chapter organized several industry-sponsored Lunch and Learns, recruiting events, career development workshops, alumni panels, and the first ever Spring Career Fair for the MSE community. In addition, MAGT held popular monthly social events to bring the community together, such as Halloween Trivia Night and the Bismuth Crystallization Social. The chapter also revitalized its social media presence via Facebook, Instagram, and LinkedIn to increase member engagement and expand its professional network.

Material Advantage at Georgia Tech works closely with the MSE department, other student organizations, the professional societies, and the MA National Organization to provide professional development opportunities for our members. This chapter offered financial aid for conference attendance and sent 7 undergraduate students in total to the MS&T and TMS conferences. Furthermore, the MAGT Executive Board consists of 11 undergraduate students who meet weekly to ensure the rebuild of the organization is as successful as possible. This report will highlight MAGT's activity and accomplishments over the course of the 2019-2020 school year.



2019-2020 Georgia Tech Material Advantage Chapter Executive Board

### 2019-2020 Executive Board



Punith Upadhya *Chair* 



Laurel Stefani Vice Chair



Tyler Knapp Treasurer/Event Coordinator



Lizzie Hoole Career Development



Mike O'Neill Career Development





Sam Williams Projects and Competitions

Lily Turaski *Academia* 



Ayush Jain Industry Networking



Megan Ploch Industry Networking



Justin Chu Communications



Kinnera Banda Communications

# Programming

#### **Undergraduate Speaking Contest**

The August 2019 Undergraduate Speaking Contest marked the first time this competition was hosted at Georgia Tech. Dr. Kacher, one of the faculty advisors, served as judge, and students gave presentations according to the rules set forth for the national competition. Planning was underway for a spring competition, the winner of which would compete in MS&T 2020, however; this event was pushed back to Fall 2020 due to COVID-19. The Spring 2020 plans included two



main improvements: first, two judges were signed up, including the Technical Communications Director for MSE. Second, a collaboration with the annual Spring Poster Session allowed us to share advertisements as well as the event location with the much larger poster session event, which we think would have increased participation and visibility of the speaking contest.

#### **MS&T Fall Conference**

Four Georgia Tech students attended the MS&T Fall Conference. Our campus winner competed in the Undergraduate Speaking Contest, and all students were able to benefit from the networking opportunities presented at MS&T. We had one officer (Lily Turaski, Academic Chair) attend the Chapter Officer's Workshop, which was incredibly helpful to us as a budding organization to be able to gain insight from well-established chapters. Lily brought back two full pages of notes



and suggestions for our club to try, several of which we were able to implement. Students also benefited from the technical sessions; in particular the "Perspectives for Emerging Professionals" symposium held very relevant advice for students considering their next career choices.

#### **Materials Bowl**

Georgia Tech entered the 2020 Materials Bowl for the second year in a row. This year, the team had regular practices and a dedicated student as their coach. They created study guides covering common topics at the Materials Bowl, such as guides on the metric system and the TMS organization. Although our team was eliminated after their first round in San Diego, we are very proud of them and their hard work!





#### **Academic Panels**

In Spring 2020, MAGT hosted a series of 3 panels on academic subjects. Free pizza was served at all three. First, a Graduate Student Panel featured six current Georgia Tech graduate students from MSE, Mechanical Engineering, and Chemical Engineering. Current undergraduate students attended the panel and asked questions like "What factors did you consider when selecting a graduate

#### **TMS Annual Meeting**

MAGT sent 11 students to the TMS 2020 conference in San Diego. Four students entered the Materials Bowl contest, one student entered the Undergraduate Student Poster Contest, and one graduate student was selected to give an oral presentation during the technical sessions. All students were able to network with other students, professors, and industry professionals, as well as attend technical symposiums to learn about cutting-edge materials research.



school?" Second, an Undergraduate Research Panel featured six current undergraduates who are working in research labs on campus or who worked at a national lab. Underclassmen who wanted to learn more about getting involved in research attended and asked questions such as "How did you decide which lab you wanted to work in, and how did you contact the professor/obtain the position in your lab?" Finally, a Study Abroad panel featured seven MSE students who attended different study abroad programs through Georgia Tech. They were able to highlight photos from their experiences, and answered questions such as, "What classes did you take, and how did you fit your study abroad into your plan for graduation?"



**Photoshop Workshop and Materials Art Contest** In collaboration with the Materials Innovation and Learning Laboratory, a maker space for our MSE department, MAGT organized a Materials Art Contest this past fall. This was a contest where students were able to submit optical microscopy and colorized SEM images, and selected photos were used to make posters for the MSE community. To supplement this, we held several photoshop workshops to help students prepare their images.

# **Career Development**

Throughout the past year, MAGT has organized several career development workshops and services. These were designed to help our members not only find jobs but also have the skills they need to thrive in them.

#### **Industry Networking Events**

MAGT organized a number of industry networking events throughout this past year. These events were often held as Lunch and Learns, where representatives would speak about their company and the opportunities they have, and then students were able to ask them questions or speak one-on-one and network with them, all while enjoying a catered lunch provided by MAGT. These events were partnered with companies such as GE Aviation, Solvay, Gore, and Cree.



#### LinkedIn Workshop

This past fall, MAGT organized a workshop where members learned strategies to strengthen their presence on LinkedIn. This event helped students clean up their profiles, make sure they were connecting with the right people, and learn how to market themselves when reaching out to recruiters. It was held with the help of our Career Services faculty at Georgia Tech, and had a great turn out.

#### **Gaining a Professional Edge Seminar**

This event was held with Georgia Tech alumnus Dr. Keith Hearon. Hearon was an MSE graduate who went on to work in a laboratory at MIT and sold his startup to a \$40 billion private equity firm. Dr. Hearon talked about his journey and strategies for making positive first impressions in professional settings.

#### **Spring Career Fair**

In February, MAGT organized the first Spring Career Fair in the MSE department's history at Georgia Tech. Throughout the fall, officers worked to reach out to companies that represented a wide range of focuses and industries, and to organize an event that would provide students and recruiters a comfortable space to eat, enjoy themselves, and, most importantly, network. Representatives from seven companies and organizations attended the event, including Cree,



Novelis, Printpack, Sekisui, Meggitt, Tepha Medical Devices, and our very own Materials Innovation and Learning Laboratory. These recruiters networked with more than 120 undergraduate and graduate students. Students and recruiters were provided a more personal setting to get to know about each other and what they have to offer, and several of our students were offered interviews with at least one of the companies they spoke with.

#### **Career Fair Prep Workshops**

Several workshops were coordinated to prepare students for the Spring Career Fair. These events included an alumni Q&A panel and a resume review/mock interview session. For the Q&A panel, we brought in Georgia Tech alumni from a variety of backgrounds; representatives had experience in multiple industry sectors, graduate schools, research fields, government work, and more. This event allowed students to ask any and all questions they had, from networking and career advice to personal experiences the panelists had at Georgia Tech. The resume review and mock interview session was in collaboration with alumni, Georgia Tech faculty, and representatives from Gore. This provided students an opportunity to schedule a 30-minute meeting with one of our gracious volunteers to either go over their resume or conduct a mock interview and receive feedback.

#### **Business Card Service**

In addition to the workshops organized in preparation for the career fair, MAGT also organized a business card service. This service provided each interested MAGT member with 100 high-quality business cards, free of charge. The service went over with great success and allowed students to provide recruiters with their contact information and make a strong first impression.

#### **Internship/Career Preparation Event**

This past spring, MAGT planned to organize an event with the aid of our MSE student advisor. This event intended to focus on how to succeed and advance within future job positions, and would have included advice such as how to leave a lasting positive impression in an internship, how to develop a strong mentor/mentee relationship, and how to seek out higher level positions. This workshop would have been led by Mr. Allan Ray, a Georgia Tech alumnus who has 45 years of industry experience, 35 of which were as VP of human resources, and who has done job preparation workshops for our graduate students in the past. Unfortunately, this event was indefinitely postponed due to COVID-19, but we are hoping to organize this event in the Spring 2021 semester as our students prepare for summer internships and entry-level jobs.

### Service

#### **Outreach and Tours for Prospective Students**

Material Advantage students put in over 30 hours of service focused toward helping prospective MSE students by partnering with the MSE department to provide volunteers for the events listed below.

#### Buzz In to MSE

This annual event is offered in the fall, and prospective high school students from across the US are invited. Student volunteers run three separate demonstration rooms representing the three concentrations offered at Georgia Tech: structural and functional materials, biomaterials, and polymer/fiber materials. The polymer/fiber material room was led by Material Advantage students, and it included demonstrations on gelation and hydrogels,



crosslinking, glass transition temperature, injection molding, and thermochromic polymers. Over 50 prospective students attended these demonstrations.

#### Gold Carpet Day

This is a spring event which is exclusive to current high school seniors who have already been admitted to Georgia Tech's MSE department. Each of these students is paired with a current student who they get to shadow for five hours. This allows prospective students the chance to see a snapshot of the day in the life of an MSE student (attending classes, visiting research labs, and touring our makerspaces).

#### MSE Day in the Life for Scholars Weekend

Two Material Advantage students who are also scholarship recipients at Georgia Tech planned an MSE "Day in the Life" for prospective MSE students during the campus-wide Scholars' Weekend. This included arranging a tour of the makerspace, sitting in on an introductory MSE lecture, and organizing two lunch panels--one with current MSE faculty, and a second, more informal panel with current MSE student leaders. Additionally, the Material Advantage students acted as host for the prospective MSE students for the entire weekend--taking them into the lab to shadow undergraduate research, and showing them all sides of campus life including the library, dorms, and cafeterias. One highlight included a mini demonstration on bismuth crystallization, allowing the prospective students to create their own bismuth crystal to take home!

#### First-Year Student Panels

Material Advantage Officers helped run a series of panels for rising first-year students. Each session lasted for approximately an hour, and our officers acted both as panelists and as moderators for the

sessions. The topics included a Rising 2nd Year panel, where second years discussed topics such as their transition from high school to college, their experiences at GT during their first year. Another topic was on Student Organizations within MSE, where panelists discussed the events and opportunities within student clubs and the importance of being involved on campus. The final topic was on undergraduate research at Georgia Tech, where panelists discussed topics such as how and why they became involved in research and what they have learned from their undergraduate research experiences.

#### **Scholarship Application Workshop**

Material Advantage partnered with the MSE Department's Technical Communications Director, Dr. Alamgir, to help students apply for the scholarships sponsored by TMS, AIST, ASM, and ACerS. The Academic Chair created a PowerPoint presentation that gave background information on the partner organization, described the scholarships available, and how to find the website and application. Dr. Alamgir gave a presentation on how to write compelling personal statements within the word limit, advice for getting great recommendation letters, and answered initial questions from the students. The students then had an hour during the workshop to get started on their personal statements and ask specific questions to Dr. Alamgir. Material



Advantage also created a handy flyer to summarize the deadlines for scholarships throughout the year.

#### Fall MSE Student Organization Open House

In coordination with other MSE student organizations, MAGT organized an open house event for students who are interested in getting involved in the MSE community. Students munched on free pizza while representatives from each organization discussed their purpose, upcoming events, and how to join. Afterwards, attendees were given a chance to chat with student leaders and faculty to discuss classes, transitioning to Georgia Tech, and the best ways to get involved on campus.

#### **Spring Organization Fair**

MAGT presented at the Spring MSE Organization Fair, "On Track with MSE." This event was catered and attended by over 50 students,

faculty, and staff. The department chair, Dr. Naresh Thadani, gave the welcoming remarks, and MAGT had the opportunity to talk about our organization, answer students' questions, and recruit new members.



# **Social Events**

Approximately once per month, we host a social event that is open to the entire MSE student body. These events provide a time to relax, have fun, and engage with the MSE community.

#### **Kickoff Event**

Material Advantage officially returned to the Georgia Tech community with a Kickoff Meeting to start the year. The purpose of this event was to spread the word about MAGT's mission, introduce the Executive Board, advertise planned events, and discuss different ways to get involved. The kickoff event reached over 30 students, increased our member count, and grew our following on social media platforms.

#### Halloween Costume Contest and Trivia Night

Our October social event took place at Rocky Mountain Pizza, a locally-owned restaurant. Material Advantage rented the entire heated back patio for the evening, and the 26 event attendees enjoyed continuous pizza and sodas. MAGT exec members prepared trivia questions ahead of time, with question categories including Halloween, Candy, MSE Professors at Georgia Tech, and Materials Bowl questions. The most popular questions came from the professors category, for example, "Which MSE Professor has a black belt in Taekwondo?" (Answer: Dr. Robert Speyer). We gave out awards for the top three trivia teams as well as for the best group costume, most creative costume, scariest costume, best Georgia Tech themed costume, and best famous person costume. As shown below, the MAGT Executive Board was awarded the best group costume (please ignore our spelling/grammar)!



#### Friendsgiving

Material Advantage collaborated with two other MSE clubs to put on a department-wide Thanksgiving potluck, attended by over 50 students, faculty, and staff. Material Advantage prepared trivia questions (categories included Thanksgiving trivia as well as fresh rounds of Materials Bowl and MSE professors trivia). MAGT also provided decorations, set up and cleaned up, and helped with advertising the event and preparing food.





#### **Chipotle and Chill**

The final social event of 2019 featured catering from Chipotle and was attended by more than 35 students. The event took place in a classroom on campus, and after the food was gone, students stayed to talk and play games, including board games provided by chapter officers and MSE-themed hangman on the whiteboards.



# CHIPOTLE AND CHILL

WITH MATERIAL ADVANTAGE Chipotle catering and games provided! 11/11/19 (make a wish!) 6PM e IC 105

#### **January Social**

The January Social was billed as a chance for students to meet the Exec Board of Material Advantage in a casual setting. We provided catering from a local Mexican restaurant, and the social atmosphere led to great conversations about what Material Advantage can do for students. Officers shared information about joining committees and attending conferences, and new Material Advantage members shared the programming they want from Material Advantage.



#### **Bismuth Crystallization**

Students grew their own bismuth crystals during the hands-on February social that also featured Jimmy John's catering! Material Advantage provided 24 pounds of bismuth ingots along with the necessary supplies and safety equipment. Once the bismuth was melted, paper clips were suspended into the melt, and the bismuth was allowed to cool. The paper clips provided nucleation sites for the crystallization, and after about 5 minutes, the paper clips could be removed to reveal gorgeous crystal formations!





### **Chapter Management**

#### **Officer Responsibilities**

The MAGT Executive Board consists of 7 positions: Chair, Vice Chair, Treasurer, Communications Chair, Industry Networking Chair, Career Development Chair, and Academic Chair. Each officer oversees a committee of 1 to 4 students in an effort to expand the chapter's reach and establish a pipeline for subsequent Executive Board appointments.

The Chair works closely with faculty advisors, the MSE department, professional societies, and campus organizations to guide the organization and discover new opportunities for growth. The Chair and Vice Chair supervise all operations within the organization and delegate responsibilities to the rest of the Executive Board. The Chair utilizes an online spreadsheet (shown below) to monitor progress for semester projects, identify potential pain points, and maintain meeting records. The Vice Chair ensures creative internal development within MAGT and organizes social events for the chapter.

	A	В		С	D	E
1	Sam	8/22/20	19	8/29/201	9 9/5/2019	9/12/2019
2	Manage Recycling Innovation L&D Team	On Time	*	On Time	On Time	On Time 🔹
3	Collect feedback on L&D program	Not Started	*	On Time	Late 💌	On Time 🔹
4	Host at least 1 more competition	Not Started	Ŧ	Not Started	Not Started *	Not Started *
5	Host at least 1 more project	Not Started	-	Not Started	Not Started *	Not Started 💌
6	Lizzie	8/22/20	19	8/29/201	9 9/5/2019	9/12/2019
7	Organize alumni panel on transitioning to work force/d	Not Started	*	On Time	On Time 🔹	On Time 🔹
8	Organize business card making service	On Time	Ŧ	On Time	ssue 🔻	On Time 🔹
9	Organize recruiting event with (at least 2) companies	On Time	*	On Time	Issue 🔻	On Time 🔹
10		Not Started	-	Not Started	Not Started 👻	Not Started *

The Treasurer maintains all records of the chapter's revenue and expenditures and applies for funding and reimbursements to finance each event. This year, they also led efforts to charter our student organization through the Student Government Association (SGA). As a chartered organization, the chapter gains additional access to campus spaces for room reservation, recruitment, and advertising. MAGT can also acquire funding from SGA in addition to the MSE department and the Residence Hall Association Sponsorship Program. The Communications Chair notifies members of upcoming events and other professional development opportunities through Slack, email, and social media (Facebook, Instagram, and LinkedIn). This officer also leads recruitment efforts for new members as well as retention efforts for existing members.

The Industry Networking Chair is responsible for establishing and developing relationships with corporate representatives in order to organize industry-partnered events. The Career Development Chair coordinates professional development workshops, such as mock interviews, resume blitz, and alumni panels, to provide members opportunities to build their soft skills. They collaborate with on-campus career development services to identify resources to help students market themselves effectively. The Academic Chair organizes lab tours and student-led panels for members interested in

research and graduate school. They also update members on details regarding upcoming conferences as well as scholarships offered by the professional societies.

#### **Chapter Transition**

The selection process for the new Executive Board begins midway through the Spring semester every year. The candidates apply online and subsequently interview with two current officers. Each member of the Executive Board reviews interview notes, recordings, and discussions and casts a vote for each open position. Two candidates may be selected to assume officer roles with extensive responsibilities.

To ensure the continuity of excellence from year to year, incoming officers receive access to position-specific guide books written by previous officers to ease the transition. These guidebooks detail primary responsibilities, general strategies for success, instructions for coordinating certain events, important faculty and industry contacts, and hyperlinks to other helpful resources within the MAGT Google Drive. Outgoing officers also set up 1-on-1 meetings with incoming officers to review the guidebooks together, answer any questions, and offer pieces of advice.

Continued growth and sustainability is the organization's utmost priority. Within the MAGT Google Drive, the current Executive Board created a central directory for incoming officers to identify the most helpful resources and quickly learn how to organize each event. In addition, the chapter's scorecard spreadsheet monitors the growth of MAGT using continuous data collection. This scorecard tracks information annually, such as the number of student members, average attendance for each type of event, and the number of companies at the Spring Career Fair. This feedback has led to an in-depth understanding of members' interests and needs in regards to MAGT.

#### **Recruitment Efforts**

The Georgia Tech Material Advantage Chapter utilizes several recruitment methods to introduce students to the opportunities MAGT organizes for the MSE community. During the summer, officers give a short presentation during Georgia Tech's freshman orientation to encourage incoming first-year students to get involved early. At the beginning of each semester, the chapter works with other MSE student organizations to hold an open house event and increase awareness about how underclassmen can get involved outside of the classroom. In addition, MAGT officers recruit new members by giving a brief pitch to large MSE lectures and handing out flyers with upcoming events and details on how to join the organization. Captivating flyers are also strategically placed in areas that are highly frequented by MSE students. Officers are encouraged to share upcoming events through social media as well as text and GroupMe messages. These events are also advertised through weekly emails sent to the MSE student body. The final recruitment method, and perhaps the most effective one, is the use of personal connections to encourage friends and current classmates to attend events and join committees. New attendees can express interest in joining committees through the sign-in form at each event or by contacting any Executive Board member personally. In the future, MAGT plans to use merchandise (e.g. t-shirts, stickers, and pens) to incentivize students to attend various events and get involved with the chapter.

## **Statistics**

During the 2019-2020 school year, the Georgia Tech Material Advantage Chapter set a strong foundation for the future through its tenacious recruitment and organization of professional development and social events.

In MAGT's first year:

- More than 150 students joined the chapter's Slack and mailing list
- The Facebook page followers count reached 253
- \* Instagram, Twitter, and LinkedIn pages were created, and the website is on the way
- ♦ We organized 6 social events with an average attendance of 35 students
- ★ 4 industry-partnered events were coordinated with an average attendance of 15 students
- Members connected with technical representatives and recruiters from Solvay Specialty Polymers, Gore, GE Aviation, and Cree
- ★ We recruited 7 companies/organizations to register for the first MSE Spring Career Fair
- ♦ More than **120** students (undergraduate and graduate) attended the Spring Career Fair
- Officers contributed to 7 outreach events and more than **30** hours of service
- ◆ 4 career development events were organized with an average attendance of 11 students
- ✤ 3 professional development speakers (not affiliated with Georgia Tech) were invited to speak in front of MAGT members
- ★ 4 academia-related events were coordinated with an average attendance of 9 students
- More than 20 companies expressed interest in collaborating with MAGT to host a recruiting event or Lunch and Learn in the future

Our chapter made an immediate impact upon its return to Georgia Tech, and we intend to build off of this momentum and provide more opportunities for professional development and community building in the 2020-2021 school year and beyond.



MATERIALS SCIENCE AND ENGINEERINGGeorgia Institute of Technology771 Ferst DriveAtlanta, Georgia 30332-0245PHONE404•894•2651FAX404•894•9140

May 6, 2020

To whom it may concern

This letter is to provide my strongest support to the Georgia Tech Materials Advantage Chapter for the award of 2019-2020 Chapter of Excellence. I am the faculty advisor for the student-run Materials Advantage Chapter at Georgia Tech, which is also known as the Materials Advantage Georgia Tech (MAGT). For the last two years, this chapter has become very active and popular due to the new leadership team as well as very active student members. I was amazed at the enthusiasm and organizational skills shown by the chapter leaders, meeting regularly, involving the members in decision-making through social media platforms like "Slack". Being the faculty advisor, I had an access to their "Slack" discussions and activities, which were very inclusive and organized. This chapter's excellence is evident by the type of and number of organized activities in 2019-2020, as are described below.

In August 2019, the chapter organized an "Undergraduate Speaking Contest", which was judged by the MSE faculty. Near Halloween in October 2019, the chapter organized a "Costume Contest and Materials Science Trivia Night", which was a lot of fun. Near Thanksgiving in 2019, a "MAGT Potluck" was organized. In January 2020, a very successful "MSE Career Fair" was held by the MAGT, where a number of local and large industry participated and interviewed students for internships and jobs. In February 2020, MAGT organized a Bismuth Crystallization event, which was a hands-on event that everyone enjoyed. Apart from these main events, the Georgia Tech Materials Advantage chapter also organized a number of "Lunch and Learn" type of events throughout the year, with company representatives/speakers from different companies like GE, Gore, and Solvay. Last year, the MAGT chapter also sent a number of students to the MS&T Fall Conference and the TMS Annual Conference. At these conferences, the MAGT members entered the undergraduate speaking contest, poster contest, and material bowl. A graduate student also was sponsored by the MAGT to give an oral presentation during the technical sessions.

Based on the above listed activities and participation chapter members in 2019 and 2020, I can confidently say that the Georgia Tech Materials Advantage chapter is the best student chapter and deserves to be duly recognized. I look forward to our chapter continue to perform in 2020-21 as well. Please feel free to contact me if you have any questions about the MAGT.

Sincerely

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Preet M. Singh FASM, FNACE Professor and Associate Chair for Graduate Program