

MSSM

Community Update

Spring 2019

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Academics 20



Maine School of Science and Mathematics

#Math League

THE EXCITEMENT OF THE CELEBRATORY DINNER ESCALATED WITHIN MOMENTS OF SITTING DOWN at the restaurant table. At each place setting was an unusual looking square plate. It appeared as though, while it had been still flexible, each corner had been bent down asymmetrically, bisecting one adjacent corner, but not the other and then laid open again, leaving “creases” on the surface. The result was square in the middle surrounded by alternating triangles and trapezoids. Described in this way, it may be easy to make the leap of how this could be a math problem in the making, and that is exactly how the State Champions of Maine State Math League viewed it. One student raised the question of whether the length of a side of the inner square could be determined if the length of one side of the plate was known. There was talk of trigonometry and perhaps 5/4th t-squared and after a brief and animated discussion, they were convinced it could be done.

This enjoyment and passion for all things mathematical is the unifying attribute of the team of eleven students, chosen on the basis of their performances in the regular season MAML meets, who represented MSSM at the State Math Meet in Augusta. Walking into the Augusta Civic Center on Tuesday morning to join 98 other Maine teams, they were already guaranteed to go home with a plaque for being the top scoring team during the regular season. In addition, MSSM junior James Hawkes was recognized as top scorer in the State during the regular season. This honor came with a massive trophy and a check for \$300.

While the season’s scores may partially predict performance at the all-day State Math Meet, in reality students start the day with a score of zero. In the morning, all students do the same six sets of math problems and scores are tallied individually and summed for the team. During five of these rounds, MSSM



continued

outscored every team in the State securing a clear lead going into the afternoon team events. MSSM's scores in those morning rounds ultimately qualified nine students for medals for individual performances. Ethan Winters (Gardiner) and James Hawkes (Portland) earned all possible 72 points resulting in gold medals for grades 12 and 11, respectively. Other Seniors to medal were Sandy Kweon (Republic of South Korea) in 5th place and George Johnson (Kennebunk) in 11th. MSSM students totally dominated the stage when the Juniors were called up. Right behind James Hawkes was Minjin Lee (Republic of South Korea), Silver; Jordan Theriault (Caribou), Bronze; Christian Chagnon (Eliot), 4th; and Oleksii Nikanov (Ukraine), tied for 5th. Madison Albert (North Yarmouth), the only sophomore on the team, earned Silver in her grade category. Looking at yet another statistic, overall student rank, nearly the entire team scored in the top 25 for the meet.

In the afternoon, team rounds solidified the MSSM victory for the day where they earned 179 points out of a possible 200. In the two relay rounds, each student on a team is given a different problem to solve before passing an answer to a teammate who performs an additional calculation on the answer to their own problem and the answer passed back. This new number is passed to the next student who repeats the process. At the end of the round, points are awarded for correct individual answers and the final pass through computation. MSSM's score of 92 out of 100 conceals the potential for errors.

Finally, in each of the two team rounds, all ten students gathered around a table to collectively solve a page of problems. They divvied up the questions and when time allows, check one another's work, submitting a single set of answers. The Team total from the morning and afternoon rounds resulted in an astonishing 846 points out of 920. It is unfortunate for MSSM that each school can only send one team. While some schools brought as few as two mathletes, MSSM had another four full teams in waiting. Kudos to the dedicated staff and students who participate in Math Team at MSSM.



Kneeling (L-R) - Jordan Theriault, Minjin Lee, Madison Albert, Sandy Kweon, James Hawkes, Alex Nikanov **Standing (L-R)** - Ethan Winters, Dr. Eitan Pechenick, Christian Chagnon, Mrs. Millie Rhodes, Jack Kang, Hannan Zimmerman, George Johnson, Dr. Mark Rhodes

#Science Bowl

IT WAS AN EXCITING

Saturday at the University of Southern Maine, Gorham, as 20 teams from 12 Maine high schools battled it out answering questions related to Biology, Chemistry, Physics, Earth Science, Astronomy, Energy, and Mathematics. After 10 rounds of play, including two tie-breaker sets to determine placements for the semi-finals, MSSM Team A emerged victorious with a win over the Scarborough A Team.



(L-R): Jordan Theriault, Daniel Brower, George Johnson, Jay Philbrick, James Hawkes

MSSM Team B placed 4th in their division, but did not advance to the semi-finals. This is MSSM's fourth win, with previous victories in 2007, 2013, and 2014. The winning team now receives an all-expense-paid trip to the National Science Bowl competition, which is held just outside Washington, DC, at the National 4-H Conference Center in Chevy Chase, MD, on April 25-29. While at Nationals, MSSM will compete against schools from around the US, as well as listen to lectures from leading scientists and visit many of the spectacular museums found in our nation's capital.

MSSM Team A is comprised of Daniel Brower (Carmel), James Hawkes (Portland), George Johnson (Kennebunkport), Jay Philbrick (North Yarmouth), and Jordan Theriault (Caribou), and is coached by Dr. Debbie Eustis-Grandy. MSSM Team B is comprised of Madison Albert (North Yarmouth), Amanda Chen (Thomaston), Annie Giroux (Belgrade), and Mari Witmer (Fort Kent), and is coached by Tracy Meyer.



Photo (LEFT L-R): Mari Witmer, Annie Giroux, Amanda Chen, Madison Albert

#Jazz Band

ON THE EVENING of March 15th, MSSM's jazz combo, led by instructor Mark Tasker, capped off a wonderful day for our school when it was awarded its first-ever medal at a state competition! They scored a bronze, were a point off a silver, and did a fantastic job representing MSSM in the midst of an extremely long day.



(Front L-R) Annie Giroux, Connor St. Peter, Ryan Berry, Milica Samardzic, Greyson Orne
(Back L-R) Mr. Mark Tasker, Morgan Tasker, Ian Ammermann, Noah Olsen, Humam Al-Fdeilat, Michael Delorge, Wesley Chalmers

Thanks go out to Mrs. Stackhouse for her logistics work getting members of the combo to the venue, our wonderful music parents for all the help in South Portland, and of course to the members of MSSM's jazz groups across the years for getting all this started. Most importantly congratulations to the 2019 MSSM Jazz Combo members - Humam Al-Fdeilat, Ian Ammerman, Annie Giroux, Greyson Orne, Milica Samardzic, Wesley Chalmers, Noah Olsen, Michael Delorge, Ryan Berry, Connor St. Peter, Rothery Sullivan and Morgan Tasker.



#Nordic

by Sarah Stackhouse



Dolcie Tanguay, Coach Beckum, Harrison Walters



(L-R) Ryan Oh, Connor St. Peter, Lydian Frost, Harrison Walters, Rothery Sullivan, Braden Peck-Parker, Katherine White, Justin Pelletier, Dolcie Tanguay, Robbie Fitzmaurice, Victoria Eichorn, Will Whitman, Brice Carson, Martin Brozman, Milica Samardzic, James Lau, Greyson Orne

THE MSSM PENGUINS NORDIC SKI TEAM enjoyed a successful season thanks to an abundance of snow and determination! Along with several new athletes, the team welcomed Marie Beckum as coach. While no stranger to MSSM athletics, this was Coach Beckum's first year at the helm of the nordic program. Thanks to local resident Ron Gallagher, the team had freshly groomed trails on campus whenever conditions allowed which was a huge benefit to the team's training schedule. We even turned on the soccer field lights to allow for night practices!

Veteran team members Dolcie Tanguay and Harrison Walters had particularly strong seasons with consistent top 5 finishes at the local meets. Both earned the title of All-Aroostook athletes based on their performance at the Aroostook League Championship races.

During February break, the team travelled to Titcomb Mountain in Farmington for the Class C State Championship races. Dolcie Tanguay, Victoria Eichorn, Lydian Frost, Brice Carson, and Rothery Sullivan represented the girls' team with Harrison Walters, Will Whitman, Justin Pelletier, Connor St. Peter, and Greyson Orne representing the boys. The trip was a great opportunity for team bonding and experiencing the spirit of competition while racing with the top athletes from

around the state. Both teams finished in 5th place overall in Class C! In individual awards, Dolcie Tanguay took 2nd in Classic, Skate, and Pursuit while Harrison Walters finished 2nd in Classic, 6th in Skate, and 4th in Pursuit.

A special mention goes to our two seniors: Victoria Eichorn and Rothery Sullivan. Both of these talented athletes will be missed! We thank them for their leadership.

Well done, Penguins!



#Volleyball

by Harrison Walters

MSSM's EXCITING VOLLEYBALL SEASON

came to a close last week with the culmination of each team's work, the girls and boys Aroostook County Volleyball Championships. While many teams from around the area had already scrimmaged each other and thought they knew what to expect, MSSM teams knew each game would be a surprise. Both teams did excellently and left it all on the court at the end of the tournament; however, the girls were the real volleyball standouts this year.



The first surprise of the girls' tournament was when Lydian Frost, a new pick for starter and a sophomore who had never played high school volleyball before, took the first game by storm snagging the MVP pick and leading her team to their first victory. From there, the wins kept pouring in, with Victoria Eichorn, Sandy Kweon, Hannah Zimmerman and Julianna Hundley-Mondello taking charge and clean sweeping the next 8 sets. However, the teams greatest challenge lay ahead. The girls' performance in their pool qualified them for semifinals where they played the very talented Washburn girls team. The Penguin Girls swept the semifinal round winning two back-to-back sets, cementing their place in the finals. The finals were just as tough, if not tougher than the previous game with MSSM losing the first set to the Fort Fairfield girls. Just when their championship run could have been finished, the girls stepped up again and took control of the game with All-Aroostook Team and All-Tournament Team player, Hannah Zimmerman, and All Aroostook Team member and Tournament MVP Victoria Eichorn bringing MSSM to a very emotional and well-deserved championship win. Congratulations girls!

The boys had big shoes to fill on the way to their tournament the following day. Encouraged by the girls' big win, they did an awesome job holding their own against the older teams at the tournament. Winning at least one set against all their teams except for in their final game. The boys' team MVP's were William Whitman, Trevor Gava, Rudy Ye, Nate Paulauskas, and Ryan Fitzmaurice, with William Whitman's outstanding performance earning him a spot on the boys All Aroostook Team. Freshman Nate Paulauskas also surprised everyone with his skill on the court, earning everyone's respect. **Awesome Job boys!**



Floor: Yun Jung **Front (L-R):** Brooke Rethman, Mari Witmer, Madison Albert, Lydian Frost, Ashlynn White (on back), Alyssa Abbotoni, Mati Luce **Back (L-R):** Coach Thomas Beckum, Haileigh Luce, Dolcie Tanguay, Annie Giroux, Rothery Sullivan, Hannah Zimmerman, Sandy Kweon (on back), Victoria Eichorn, Julianna Hundley-Mondello

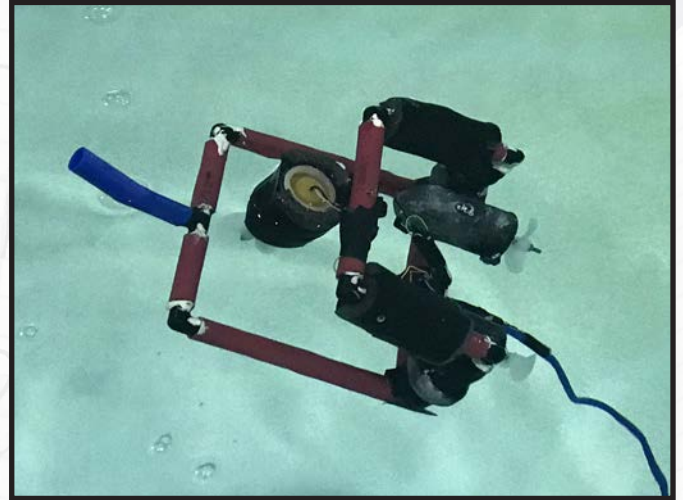


Front (L-R): Trevor Gava, Ryan Berry, Rudy Ye, Taesu Joo, Nathan Paulauskas **Back (L-R):** Coach Thomas Beckum, Alex Nikanov, Ryan Fitzmaurice, Michael Delorge, Robbie Fitzmaurice, Kura Yamada, Connor St. Peter

#Sea Perch

TWO TEAMS TRAVELED TO BRUNSWICK, MAINE to compete in the Northern New England Regional SeaPerch competition on April 6th.

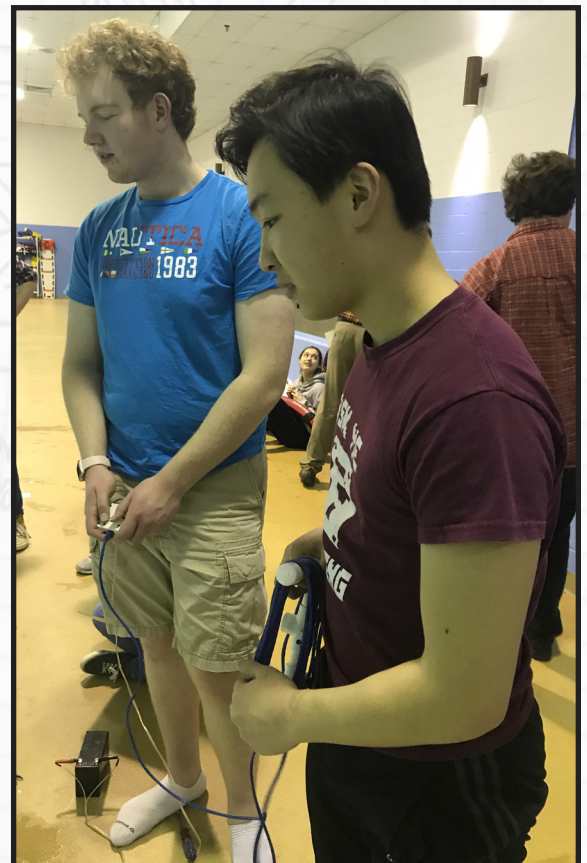
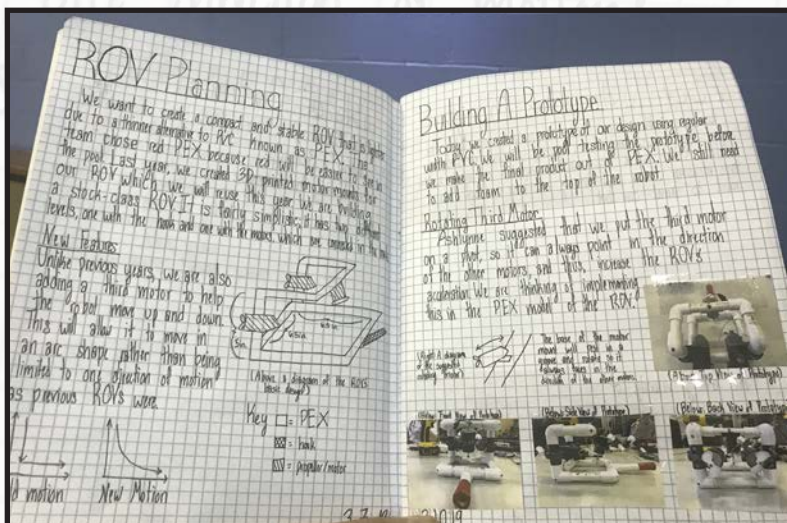
The MSSM Emperor Penguins team represented by Justin Davis, Rudy Ye, and Kura Yamada finished in 1st place and had the best score in every category including the mission course which was a simulated rescue and recovery mission conducted with their submersible ROV. By finishing first, the team has qualified for the International SeaPerch Challenge which will be held at the University of Maryland on June 1 & 2, 2019. This is the second year in a row that this team has qualified to move on.



The JEMS, a team of freshmen, represented by Eli Wales, Justin Pelletier, and Sam Cullins also completed very competitive runs in both the obstacle course and mission course and ultimately finished in 5th place in a very competitive field of 16 high school teams from across New England.

SeaPerch is an innovative underwater robotics program that equips teachers and students with the resources they need to build an underwater Remotely Operated Vehicle (ROV) in an in-school or out-of-school setting. Students build the ROV from a kit comprised of low-cost, easily accessible parts, following a curriculum that teaches basic engineering and science concepts with a marine engineering theme. The SeaPerch Program provides students with the opportunity to learn about robotics, engineering, science, and mathematics (STEM) while building an underwater ROV as part of a science and engineering technology curriculum. Throughout the project, students will learn engineering concepts, problem solving, teamwork, and technical applications.

The competition also includes an engineering notebook to document the thinking process throughout the design stages.



Justin Davis (Blue shirt) & Rudy Ye practice operating their SeaPerch bot.

#VEX ROBOTICS



Two MSSM Teams Qualify for VEX World Championship.

Three MSSM teams qualified for the State Vex Robotics championship in South Portland on February 23, 2019. All three teams did a wonderful job and advanced to the semifinals.

Team 4393X comprised of Justin Davis, Jack Kang, Rudy Ye, Ben Grant, Will Whitman, Sadie Hartt, Jialan Deal, Michael Delorge, Sage Betko, and Kura Yamada, did not make it to the final round.

Team 4393S comprised of Madison McCarthy, Madelyn Battock-Emerson, Chandler Pike, Wesley Chalmers and Nick Clark did make it to the finals and earned their invitation to the World Championship by winning the Design Award.

Team 4393Z comprised of Ethan Kelley, Jeonghoon (Ryan) Oh, Qixuan (Harrison) Ma, Oleksii (Alex) Nikanov, Federico Galbiati, and James Lau qualified for the finals and ensured their invitation to the World Championship by winning the Skills Category.

The World Championships will take place in Louisville, KY from April 24 through April 27, 2019.



The Jackson Laboratory and Bigelow Laboratory

DURING J-TERM, 2019, ten MSSM students participated in research projects at the Jackson Lab (JAX) in Bar Harbor and at the Bigelow Lab in East Boothbay.

While at JAX students worked on a project related to personalized medicine. They collected and extracted their own DNA, used PCR to selectively amplify three different genes that can differ from person-to-person, and then used restriction digestion, electrophoresis, and sequence analysis to determine whether they had the 'wild type' version of the gene or one of several variations.

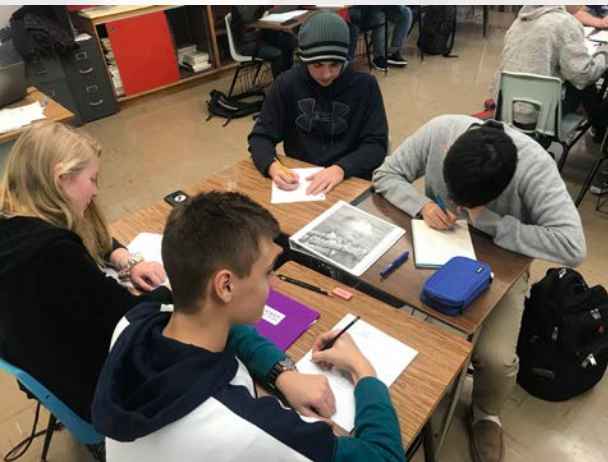
Students also learned how to use bioinformatics analysis tools, learned about (and saw) some of the mouse strains developed by and used by JAX researchers, toured the Sequencing and Necropsy/Histology facilities, listened to a presentation on the genetics of kidney disease given by Dr. Ron Korstanje, and discussed some of the ethical considerations behind personalized genetic testing for human diseases.

After a week at JAX, students traveled to East Boothbay to spend a week at the Bigelow Lab for Ocean Sciences. Students worked with Drs. Nick Record and Peter Countway on a project involving environmental DNA (eDNA). In particular, they wanted to gather information on the winter-time abundance of the marine diatom *Pseudo-nitzschia* in Maine coastal waters. Blooms of *Pseudo-nitzschia* are becoming common in the summer in the Gulf of Maine, but little is known about their winter population size. This diatom is of interest to scientists because it produces a toxin which accumulates in shellfish, and becomes harmful to humans who then eat the shellfish. Students collected water samples, filtered those samples for chlorophyll and DNA analysis, and incubated subsamples at two different temperatures to see how warmer temperatures may influence growth of winter plankton. *Pseudo-nitzschia* abundance was analyzed using quantitative PCR (qPCR), and while its biomass was much lower than it is in the summer there was still some present. On the final day of J-Term, students learned about 'science communication' and put together three short science information videos.



#J-Term Highlights

(on campus)



#Chess

Chess Tournament in Presque Isle - January 28, 2019

A Chess Tournament took place in Presque Isle on January 28, 2019. It was a double header event and MSSM won both events 5-0 and 5-0. Congratulations to our team members - Daniel Brower, Ryan Fitzmaurice, Alex Graves, James Hawkes, and Jordan Theriault.



Double Header in Houlton February 28 2019

The MSSM Chess Team played a double header at Houlton on Thursday, February 28. The team of Jordan Theriault, James Hawkes, Daniel Brower, Alex Graves, and Ryan Fitzmaurice won both matches with scores of 5-0 and 4.5 - 0.5.



#Justin Pelletier - All Aroostook



MSSM Freshman Performs in All Aroostook Music Festival

Thursday, January 24 , 2019 12:02 PM - Justin Pelletier, a freshman from Fort Fairfield, was selected to perform an alto saxophone part at the All-Aroostook Music Festival held on Saturday, January 19th at 2:00 PM. The event was sponsored by the Northern Maine Music Educators Association (NMMEA) and was one of two yearly music festivals put on by the association, the other a Choral event. The NMMEA's objective is the promotion, improvement, and advancement of music education.



#PROM

ON FEBRUARY 8TH THE PROM

Committee hosted a semiformal Valentine's Day Dance. All members helped to decorate the lower lounge with red and pink decorations. The committee followed its tradition of pink lemonade at the dance. Many people attended and had an amazing time.



The Prom Committee has completed fundraising for the upcoming Fire and Ice Prom that will take place on May 4th. They are currently working on decorating plans with their decorator as well as making a playlist, creating a prom gift, and deciding on the food that will be served. Tickets will be sold the week after March break for \$35 per person.



Jay Philbrick from MSSM selected as delegate to The United States Senate Youth Program

January 16, 2019, Washington, D.C. —The United States Senate Youth Program (USSYP) announces that high school students Mr. Joseph Eugene Bergeon and Mr. Jay Raj Philbrick will join Senator Susan Collins and Senator Angus King in representing Maine in the nation's capital during the 57th annual USSYP Washington Week, to be held March 2 - 9, 2019. Joseph Bergeon of Kennebunk and Jay Philbrick of Limestone were selected from among the state's top student leaders to be part of the 104 national student delegation who will each receive a \$10,000 college scholarship for undergraduate study.

The USSYP was created by Senate Resolution 324 in 1962 and has been sponsored by the Senate and fully funded by The Hearst Foundations since inception. Originally proposed by Senators Kuchel, Mansfield, Dirksen and Humphrey, the impetus for the program as stated in Senate testimony is "to increase young Americans' understanding of the interrelationships of the three branches of government, learn the caliber and responsibilities of federally elected and appointed officials, and emphasize the vital importance of democratic decision making not only for America but for people around the world."



Each year this extremely competitive merit-based program brings the most outstanding high school students - two from each state, the District of Columbia and the Department of Defense Education Activity - to Washington, D.C. for an intensive week-long study of the federal government and the people who lead it. The overall mission of the program is to help instill within each class of USSYP student delegates more profound knowledge of the American political process and a lifelong commitment to public service. In addition to the program week, The Hearst Foundations provide each student with a \$10,000 undergraduate college scholarship with encouragement to continue coursework in government, history and public affairs. Transportation and all expenses for Washington Week are also provided by The Hearst Foundations; as stipulated in S.Res.324, no government funds are utilized.

Joe Bergeon, a senior at Kennebunk High School, serves as a student representative on the Maine R.S.U. 21 Board of School Directors, and is a member of the Class of 2019 Executive Council. He was also the 77th youth governor of the Maine YMCA Youth in Government program. During the summer of 2018, he was sponsored by Senator Susan Collins and served as a United States Senate page. Joe is active in his school's debate team and is a member of the varsity swim team. He hopes to pursue a degree related to international studies and business.

Jay Philbrick, a junior at the Maine School of Science and Mathematics, serves as the treasurer of the Student Senate, and leads by serving as head tutor in his school's Learning Center and president and founder of his school's High School Quiz Show Maine team. Jay has been recognized

Philbrick continued

for his academic talents as well as through his selection as a Michael P. Fabio grant winner and as a finalist for the Lemelson-MIT grant award. He believes that a degree in economics can help shape a better understanding of public policy and may serve him in a future in public office.

Chosen as alternates to the 2019 program were Ms. Lauren Cooper, a resident of Dover-Foxcroft, who attends Foxcroft Academy and Mr. Logan Holt, a resident of Brunswick, who attends Brunswick High School.

Delegates and alternates are selected by the state departments of education nationwide and the District of Columbia and Department of Defense Education Activity, after nomination by teachers and principals. The chief state school officer for each jurisdiction confirms the final selection. This year's Maine delegates and alternates were designated by Mr. Robert G. Hasson, Jr., Commissioner of Education.

While in Washington, the student delegates attend meetings and briefings with senators, members of the House of Representatives, Congressional staff, the president, a justice of the Supreme Court, leaders of cabinet agencies, an ambassador to the United States and senior members of the national media. The students will also tour many of the national monuments and several museums and they will stay at the historic Mayflower Hotel in downtown Washington, D.C.

In addition to outstanding leadership abilities and a strong commitment to volunteer work, the student delegates rank academically in the top one percent of their states among high school juniors and seniors. Now more than 5,700 strong, alumni of the program continue to excel and develop impressive qualities that are often directed toward public service. Among the many distinguished alumni are: Senator Susan Collins, the first alumnus to be elected U.S. senator; Senator Cory Gardner, the second alumnus to be elected U.S. senator and the first to be elected to the U.S. House of Representatives; former New Jersey Governor Chris Christie, the first alumnus to be elected governor; former Chief Judge Robert Henry, U.S. Court of Appeals for the Tenth Circuit; former Ambassador to West Germany Richard Burt, and former presidential advisors Thomas "Mack" McLarty and Karl Rove. Additional notables include former Lt. Governor of Idaho David Leroy, Provost of Wake Forest University Rogan Kersh, military officers, members of state legislatures, Foreign Service officers, top congressional staff, healthcare providers and other university educators.



Members of the bipartisan U. S. Senate Youth Program 2019 Senate Advisory Committee: Senator Joni K. Ernst of Iowa, Republican Co-Chair; Senator Richard Blumenthal of Connecticut, Democratic Co-Chair; Advisory Members: Susan M. Collins (R-ME), Steve Daines (R-MT), Cindy Hyde-Smith (R-MS), John Kennedy (R-LA), Michael F. Bennet (D-CO), Catherine Cortez Masto (D-NV), Maggie Hassan (D-NH), Chris Van Hollen (D-MD). Each year, the Honorary Co-Chairs of the program are the vice president of the United States and the Senate majority and minority leaders.



MSSM / Phillips Andover Academy

Dark Sky Collaboration

DURING THE SUMMER, 2015, Lawrence Berz, Instructor of Astronomy at the Maine School of Science and Mathematics (MSSM) since 1998 had the unique pleasure and opportunity of attending the Teachers' Workshop held in the venerable Hartness House in Springfield, Vermont. Organized by Mr. John Briggs, the conference featured invitees from leading astronomical educational figures from around the nation. One of the presenters, Mrs. Caroline Odden, Head of the Division of Natural Sciences at Phillips Andover Academy, detailed secondary school student efforts at compiling astronomical data sets to interpret the mechanics of asteroids. Following the conference, many of us spent an unforgettable weekend at the world renown Stellafane hobbyist convention where along with perhaps several thousand international telescopists and hobbyists, we enjoyed a superb communion with colleagues, acquaintances, and new found friends in sharing the Universe from beautiful Breezy Hill.



Following this memorable weekend, Mrs. Odden and Mr. Berz began an increasingly constant exchange of communication pertaining to our own astronomy programs at our respective schools. This friendly rapport led over the last 4 years to a series of empowering GOOGLE/SKYPE contacts between MSSM Astronomy students and PAA student research astronomers usually held from both the Francis Malcolm Science Center planetarium as well as the Phillips Academy Observatory, a permanently installed robotic telescopic upon the top of the Gelb Science Building. As Supervisor of the Observatory, Mrs. Odden kindly coordinated opportunities for MSSM Astronomy students to converse with peers in Andover in engaging and stimulating astronomical conversation on a wide variety of topics.

The success of such stuff led both Mrs. Odden and Mr. Berz to simultaneously consider the possibility of an actual physical collaboration of both student groups at one of our respective and kindred institutions. Although separated in age by many decades, both the youthful MSSM and the venerable PAA share a similar commitment to excellence and achievement in the American academic secondary school residential program. So, over the first weekend of March, 2019, a small team of students and faculty from the Phillips Academy shuttled over 7 hours from Andover, Massachusetts to Limestone, Maine to engage in an intensely immersive weekend of observation and conversation aiming towards a stronger foundation of joint opportunity in bringing the Universe a wee bit closer to our common terrestrial commitments.

For several months prior to the first joint light of collaboration, Mrs. Odden and myself expanded our purpose by including several significant professional colleagues to best organize our mission astronomical. They included Mr. John Meader, a leading figure in the regional planetarium community and founder of Northern Stars Planetarium educational services, a portable planetarium enterprise serving central and southern Maine; Mr. Shawn Laatsch, a leading figure in

Dark Sky Continued

both national planetarium organizations and the International Planetarium Society and current Director of the UMO/Emera Planetarium in Orono, Maine; Mrs. Deb McGann, Dean of Faculty at MSSM, Mr. Matt Grillo, Dean of Students at MSSM; and Mr. Nouredine El Alam, Phillips Academy Instruction. This team, in whole or in part, conducted a series of successful GOOGLE Meets to continue the strategic conversations necessary to meet all the needs, both academic and residential of the visiting team.

On Friday, March 1st, the Phillips team arrived with 6 students driven by Mrs. Odden as well as Mr. El Alam from Andover, Massachusetts. The collaboration in the right spirit, with MSSM host students breaking the ice in meeting their PAA counterparts. The assembled host then briskly rounded the Academic Building to begin a nightly session of astronomical observations. The entire MSSM telescope "fleet" gathered with smaller reflecting and refracting instruments and topped off with the 20" Astrosystems instrument, surely one of the largest operational telescopes in northern Maine. Mr. Meader simultaneously conducted astrophotographic efforts with his Celestron 8 instrument and related imaging equipment. His efforts paid off with wonderful exposures of the Great Nebula of Orion and Open Galactic Cluster M46, sprinkled with stars and an embedded planetary nebula.

The following day, students, well rested and fed, enjoyed a series of informative presentations from the school Learning Center, including Mrs. Odden detailing the Phillips Academy Observatory and related data collection and similar projects pertaining to both asteroids and exoplanets. Mr. Berz then followed with an impassioned presentation and discussion of the impact of skyglow and related light pollution as tabulated by the Bortle Scale index of national skyglow.

After lunch, 3 superb GOOGLE Hangouts presented Mr. Martin Ratcliffe, veteran astrophotographer/imager, Mr. Rob Landis, NASA Planetary Defense Shield coordinator, and Mr. Christopher McKay, NASA Astrobiologist. All three men shared their professional purposes and happily answered questions from the students during the 45-minute sessions. The group left MSSM in the mid afternoon to shuttle to the Francis Malcolm Science Center in Easton, Maine. There, Mr. Meader gave a dramatic recounting of sky lore focusing upon Orion and related astronomical wonder in the theatrical guise he knows so well from his lengthy career as a planetarian. The afternoon ended with 2 excellent all-sky digital programs, "Explore" and "Incoming!" detailing the heritage of space flight adventure and the challenge of confronting asteroid and cometary "invaders" from space. Everyone left the Science Center informed and ready for some more social aspects to the collaborative Saturday night.

Following suppertime, the team enjoyed a restful snowshoe hike in the tree-lined trail behind the MSSM Soccer Field as well as a screening of the Science Fiction classic, "Interstellar". Others just enjoyed some wind down time to become better acquainted and friendlier. By Sunday, morning, the Phillips Andover team awoke for a brief shuttle to the Canadian border followed by final photographs and exchanges and goodbyes with new-found friends and colleagues. Departing Limestone by 9:00 a.m., their team drove swiftly to the University of Maine in Orono to greet Mr. Laatsch who hosted them to a detailed exposure to UMO's planetarium, its technology, and then its robotic telescope and observatories.

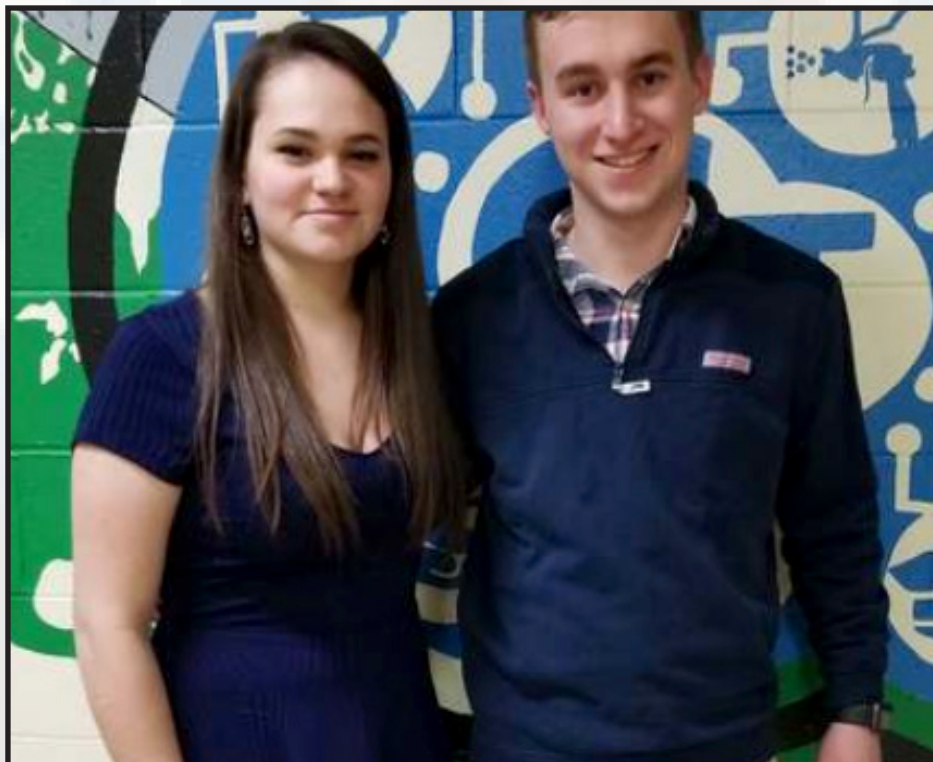
All in all, the first MSSM-PAA Dark Sky Collaborative proved a great success and will surely lead to further steps and stages to a fruitful collaborative spirit between two of America's finest residential secondary school experiences today."

MSSM Announces 2019 Scholar Athletes

by Sarah Stackhouse

THE MSSM ATHLETIC DEPARTMENT is pleased to announce that Rothery Sullivan and Trevor Gava have been named the 2019 Scholar Athletes!

Rothery, a senior from Littleton, is the daughter of Frank and Meryl Sullivan. A three-season athlete, she has participated in cross country, soccer, nordic skiing, volleyball, and track and field during her three years at MSSM. Rothery has been awarded the Most Improved athlete for both the 2018 Track and Field team and the 2016 Cross Country team and was a member of the girls' soccer team which was the recipient of the 2018 Class D North Sportsmanship Banner. Rothery is involved in many school clubs and organizations including president and founder of Media Club, president of French Club, and president of Literary Magazine. She also participates in Key Club, Civil Rights Team, and Ganiz Club. She represents MSSM as a member of Jazz band and math team. She hasn't decided where she will attend college this fall, but will pursue a degree in English.



Trevor, a senior from Gorham, is the son of Robert and Beverly Gava. He has participated in soccer, volleyball and track and field during his four years at MSSM. He was named captain of the soccer team and was recognized as an All-Aroostook athlete during the Fall 2018 season. Trevor is the president of MSSM's Soccer Club and also participates on the SeaPerch (aquatic robotics) team. Trevor also participates on MSSM's math team. He hasn't decided where he will attend college this fall, but will pursue studies in economics with a minor in statistics.

Rothery and Trevor were recognized at a banquet with other area scholar athletes on Monday, March 11th at Caribou High School. At the banquet, the Aroostook League representatives held a drawing for ten \$400 scholarships and Rothery's name was drawn! **Congratulations!**



#Time to Succeed

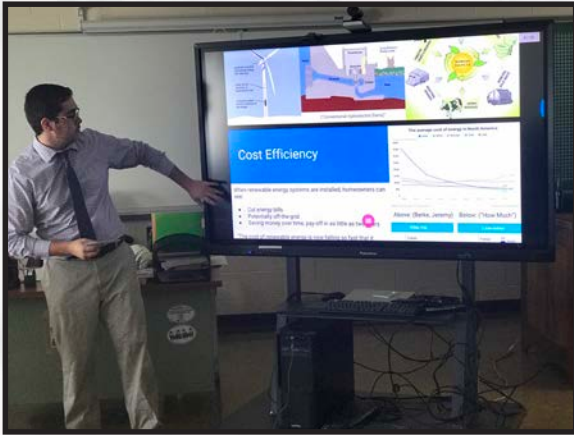


Welcome New Penguins !

#Academics



Eliana Fochesato



Connor St. Peter

English Composition and Research

by Cynthia Berube

Students in Mrs. Berube's English Composition and Research course have been working on a Speech/Oral Presentation unit. During the first semester, students were taught the importance of persuasive techniques, specifically the use of the Aristotelian Appeals, ethos, pathos and logos.

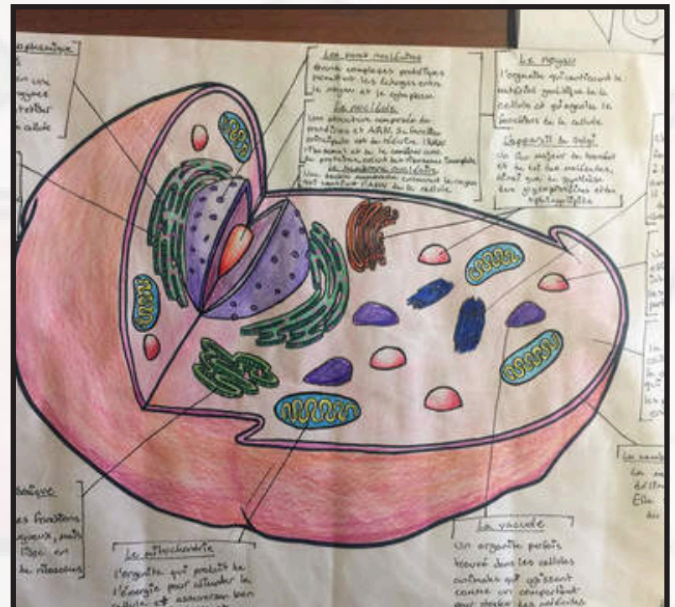
This semester, students incorporated the use of these rhetorical appeals into a 15-minute presentation. Students were not only assessed on the use of these appeals but also the use of proper resources, connection to the audience, visual aids (google slides), organization and content, as well as their use of proper voice audibility and intonation, poise, and eye contact. Proper speech etiquette is imperative in today's world.

Students at MSSM continue to prepare for their futures.

French Immersion

by Jason Desneiges

STUDENTS IN 3RD YEAR FRENCH IMMERSION at MSSM actively engage in their language acquisition through a variety of student-centered interdisciplinary projects and workshops in STEM fields. The photos here offer a glimpse into a few topics of research such as cellular biology with labs, field work in dendrology, and exploration of math projects allowing students to incorporate what they are learning in other classes into their French language program



#Lunar New Year

by Amber Jeskey

ON FEBRUARY 10TH, THE MSSM COMMUNITY, led by the International Club students celebrated Lunar New Year in the Home Economics room, feeding roughly 90 MSSM community members, including students, faculty, host families, and staff.

Our international population was joined by fellow domestic students and staff making homemade traditional Chinese and Korean dishes: Chinese pork and chicken dumplings, tteokguk (Korean rice cake soup), Japchae (Korean glass noodles), tteok galbi (spiced Korean meatballs), Chinese meatball soup, steamed whole fish with ginger and scallions, and red bean buns made by our Chinese instructors, Dr. Lu and Mrs. Zhang.

Our Asian population was thrilled to be able to share their traditions and heritage with our MSSM community. Senior Anna Foo said, "I am so thankful we have been able to put on this event, I have always wanted a real Lunar New Year while at MSSM." Our celebration continued in the dining hall during dinner, thanks to FLIK serving up veggie lo mein, eggrolls, spring rolls, and pho, a traditional Vietnamese soup, served by international students and the International Coordinator.



#Residential Life

by Alyssa Abbotoni



MSSM students were given the opportunity to visit a local maple syrup and sheep farm this past Saturday. They learned about the meticulous art of tapping trees and caring for animals.



Maple syrup taste testing! **Fun fact:** Emerson knew the maple syrup was perfect when it perfectly matched her hair color.



A few lucky students were able to pet the sheep more than others thanks to their extra long arms.



Students picked up a few new furry friends this past Saturday! This sheep, Itchy, was a favorite with the students and loved the visit almost as much as the students did.

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