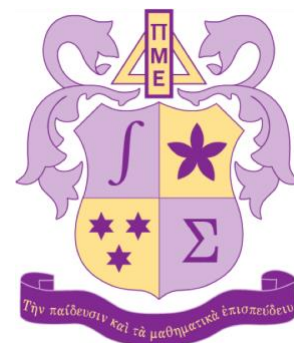## Two Students to Be Inducted into Math Honors Society, Pi Mu Epsilon

On Thursday, June 3, two students will be inducted to the Union College chapter of a national undergraduate math honors society, Pi Mu Epsilon. The purpose of this organization is the promotion and recognition of scholarly activity in the mathematical sciences among student at the academic institutions that have been chartered as Chapters of the Society. The honorees are **Jacob Feinstein** and **Laura Vinton**. Congratulations!

Math Posters from Steinmetz Day

Still looking for more math? Check out the posters created for this year's Steinmetz Day by the following math students:

- **Jacob Feinstein**, *The Module Approach to Tensors.*
- **Joseph Palko**, *Developing Prediction Models for Kidney Stone Disease.*

You can find these, and all other posters prepared for Steinmetz, at Steinmetz Posters

Calculus Help Center: Last Week of Tutoring! And THANK YOU, Tutors!!

As the spring term is coming to a close, so is the Calculus Help Center (CHC). The last couple of night operation is **Thursday, June 3**. Please join the math department in thanking the six CHC tutors who were able to shift the CHC to Zoom this year without skipping a beat. Great job **Christos Kakogiannis, Aidan McAuliff, Celine Nguyen, Edwina Rasmussen, Arun Sitsabeshon,** and **Tina Tully.**

Senior Writing and Pieces from Theses

Caroline Hirt *participated in the Senior Writing Seminar with Professor Kim Plofker*

This past winter term I was able to participate in the Senior Writing Seminar with Professor Plofker. As a Mathematics and Economics double major, Senior Writing Seminar was definitely the best choice for me instead of writing a combined thesis or two separate theses - both of which seemed overwhelming. Also, the topic of the History of Calculus was intriguing considering we have learned all the ins and outs of calculus and now we have the opportunity to learn the history and background of calculus. Coming into the seminar I was definitely nervous and intimidated about writing a lengthy paper considering most of the writing we do consists of proofs. I knew that this course would be challenging, but Professor Plofker's support at each step of the process made this seminar course quite enjoyable.

For the writing seminar we wrote two smaller papers instead of one thesis. My first paper was on the History of Probability and Daniel Bernoulli. This paper consisted of Daniel Bernoulli's initial work and applications of probability theory. It also included Daniel Bernoulli's contribution to smallpox research, where he applied probability theory in order to influence public policy and encourage universal inoculation (vaccination) of smallpox; this was the first research to use mathematical analysis to weigh the potential risks and benefits of a public health intervention. For my second and longer paper, I wrote about the history of the derivative. This paper started with the initial development of calculus by Isaac Newton and Gottfried Leibniz, and included important mathematicians that followed. This paper built up to the development of the definition of the derivative that we know today, that is Augustin-Louis Cauchy's definition of the derivative. During the

development of the derivative, it was interesting to see that there was much conflict over the "right" method and many mathematicians that we know today were involved in the development of the derivative, including Euler, Maclaurin, Lagrange, and Bolzano.

Senior Writing Seminar was the best choice for me since I was able to explore some of the mathematical topics that I have always enjoyed. Overall, this experience was difficult at times but in the end really rewarding, I was able to top off my work in mathematics at Union by diving into the history of calculus while applying the knowledge I learned in all of my mathematics courses. I think in a course like this in order to enjoy writing these papers you need to pick a topic that genuinely interests you. I want to thank Professor Plofker for all of her support and guidance throughout this seminar. I was definitely nervous about writing not one but two mathematics papers and she was able to assist with research, answer any questions, and even translate documents whenever it was needed. Now that I have completed my thesis in mathematics, I can confidently say that there is no reason to be intimidated, the mathematics department has always been extremely supportive and are truly there to guide you every step of the way.

Spring 2021 Math Final Exam Schedule

Course #	Course Name	Professor	Room	Day	Date	Time
MTH*102*01	Calculus with Precalc 3	Johnson, B.	CPH C108	Tue	6/8	2:30-4:30 PM
MTH*102*02	Calculus with Precalc 3	Plofker, K.	KARP 005	Mon	6/7	8:30-10:30 AM
MTH*112*01	Calculus 2: Integral Calc	Gasparovic, E.	OLIN 115	Tue	6/8	6:00-8:00 PM
MTH*112*02	Calculus 2: Integral Calc	Gasparovic, E.	OLIN 115	Tue	6/8	6:00-8:00 PM
MTH*115*01	Calculus 3: Diff Vector Calc	Catalano, L.	SYNC ONLI	Mon	6/7	11:30-1:30 PM
MTH*115*02	Calculus 3: Diff Vector Calc	Catalano, L.	SYNC ONLI	Mon	6/7	11:30-1:30 PM
MTH*115*03	Calculus 3: Diff Vector Calc	Wang, J.	SYNC ONLI	Tue	6/8	8:30-10:30 AM
MTH*117*01	Calculus 4: Integral Vector	Friedman, P.	VART 204	Tue	6/8	6:00-8:00 PM
MTH*117*02	Calculus 4: Integral Vector	Friedman, P.	VART 204	Tue	6/8	6:00-8:00 PM
MTH*128*01	Probability	Malen, G.	VART 204	Mon	6/7	11:30-1:30 PM
MTH*130*01	Ordinary Differential Equation	Jauregui, J.	OLIN 115	Tue	6/8	11:30-1:30 PM
MTH*130*02	Ordinary Differential Equation	Jauregui, J.	OLIN 115	Tue	6/8	11:30-1:30 PM
MTH*199*01	Intro to Logic & Set Theory	Taylor, A.	OLIN 115	Wed	6/9	6:00-8:00 PM
MTH*199*02	Intro to Logic & Set Theory	Taylor, A.	OLIN 115	Wed	6/9	6:00-8:00 PM
MTH*224*01	Geometry	Malen, G.	KARP 005	Mon	6/7	2:30-4:30 PM
MTH*332*01	Abstract Algebra 1	Khatami, L.	SYNC ONLI	Wed	6/9	8:30-10:30 AM
MTH*436*01	Topology	Johnson, B.	BAIL 100	Tue	6/8	8:30-10:30 AM
IMP*121*01	Int Math/Physics 2 W/Lab	Mariano, P.	ISEC 118	Wed	6/9	8:30-11:30 AM
STA*164*01	Strategies of Experimentation	Hoerl, R.	GRAN 117	Wed	6/9	8:30-10:30 AM
STA*364*01	Big Data Analytics	Hoerl, R.	KARP 105	Mon	6/7	2:30-4:30 PM