



Wahpe Woyaka pi

(T a l k i n g L e a f)

South Dakota Council Teachers of Mathematics Newsletter

Presidential Ponderings

Happy Spring! I hope that this issue of the Wahpe Woyaka pi finds you well. As you are wrapping up another year, negotiating contracts, and making plans for the summer, I want to thank you. Thank you for teaching...for teaching mathematics...for teaching in South Dakota!

In February, more than 125 South Dakota educators attended the 30th annual SD STEM Ed Conference. Our keynote speakers, Jim Matthews, David Costello, and the Sanford SURF group presented some truly enlightening sessions. And all of our local (regional) speakers added that special touch that our conference is known for. It was wonderful to have the gang back together again.

Summer opportunities are beginning to be advertised. I hope you are able to find some time for rest and renewal. (A sticker that my daughter found for my water bottle reads "Strength Requires Rest". So very true...) I also hope you find an opportunity to fill your professional bucket... something that will spark your enthusiasm for the classroom. The DOE has several professional learning opportunities (SD Math/SD Science Leadership, Foundational Math Course (this course is currently closed with a short waiting list), and Best Practices in Teaching Mathematics), SD EPSCoR is offering some workshops lead by teacher leaders in our state, AND our very own SDCTM Summer Symposium! Mark Kreie, SDCTM Vice President and Brookings High School's AP Stats teacher, will be presenting on the state Probability and Statistics Standards for grades 5-12. These standards are often at the end of a text book and as such, short changed in terms of time. Mark aims to help you find ways to integrate the statistics and probability standards into your curriculum.

Are you doing something fun in your classroom? Have you found a way to engage kids this spring? Please consider submitting it to the newsletter. You can include as much or as little as you are comfortable with sharing. Please send your submissions to Amy at Amy.Schander@k12.sd.us.

Blessings,

Sheila M^cQuade
SMcQuade@OGKnights.org
O⁺Gorman High School



Spring 2021-2022

Wahpe Woyaka pi

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Calendar Notes:

- *South Dakota Math/South Dakota Science leadership program application deadline May 20th*
- *Summer Symposium July 14th 2022 Registration deadline June 1st*



Higher Ed Viewpoint

According to Wikipedia, lifelong learning is the “ongoing, voluntary, and self-monitoring pursuit of knowledge for personal or professional reasons. It is important for an individual’s competitiveness and employability and enhances social inclusion, active citizenship, and personal development.” While Wikipedia should not be the go-to for all definitions, I felt this one summed up the concept well. Since teachers are inevitably lifelong learners, they know the value of attending conferences, learning new technologies, and becoming active citizens. But how do we impress this upon our pre-service teachers?



As another school year is winding down, I am thinking about how to motivate my senior students as they move into their role as teachers of mathematics to value and invest in a lifetime of learning from their colleagues, professionals, and students. Many of our pre-service teachers attended the SD STEM Conference in February, where they saw professionals in South Dakota sharing their expertise. To enhance both “social inclusion” and “personal development,” I hope these future teachers were

inspired by the sessions they attended to continue learning from others and sharing their own experiences in the future.

As technology continues to evolve, we must use the best of what it offers and learn how to incorporate it into our teaching. The only way we can take advantage of all the changes available is by seeking opportunities to continue learning. I am amazed at how many experts on utilizing technology in mathematics classrooms we have here in South Dakota.

As our student population becomes more diverse, we need to model for our students the importance of “active citizenship.” Continuing to learn mathematics will help us navigate challenging decisions, whether at the store, at the bank, at our jobs, or on a ballot. Combining a growth mindset with a desire to be a lifelong learner helps all of us embrace challenges and change and adapt our teaching styles and philosophy. If this past year has taught us anything, we have had to learn new skills, ways to communicate with students, and techniques to enhance and deliver our lessons.



As experienced teachers, it is also a good reminder that we need to be lifelong learners. It never ceases to amaze me how much my students teach me every semester, even after 30 years of teaching at SDSU. So, as we prepare for a much-needed break, I hope you all will look for opportunities to continue growing as a mathematician, an educator, and a professional. The SD Regional Math Circles and the SD Math/SD Science Leadership program are two such opportunities. Please contact Stephanie Higdon at Stephanie.Higdon@state.sd.us for more information.

Christine Larson
Post-Secondary Liaison
Christine.Larson@sdstate.edu



“As technology continues to evolve, we must use the best of what it offers and learn how to incorporate it into our teaching.”



Musings from Dan

I am staring at my calendar in disbelief. We only have 1 more week of classes at the university and then final exams. I know the high schools will be finishing close behind us. We ask ourselves where the time went, but as we reflect over the entire year and the last semester of work, hopefully we can see some progress in our students and in our teaching. It has been a pleasure seeing many folks at the professional STEM-ED conference in Huron this past February as well as some of the Math Circle workshops in Sioux Falls. I believe the last round of Math Circles will be here before you know it so I hope you will take the opportunity to sign up. I have found some fun problems to work on at these events and it is always a joy getting together with colleagues who share the same interest.

I know that professional development over the summer is the last thing most of us really want to think about right now. However, I would encourage you to check out the SDCTM.org website to see what is available. I would also challenge you to take advantage of at least one opportunity this summer. When I think back on my career, one of the biggest regrets I have is that I didn't attend enough conferences. It was just easier to stay home and I always told myself that I was too busy. However, these conferences and interacting with other colleagues with the same interests is what will keep you fresh and truly rejuvenates your passion for mathematics.

In closing, I do hope to see many of you at some professional development activity this summer. I also wish you all a great close to the semester and a very relaxing summer. You all do so much for the education of our students in the state and please know it is deeply appreciated.

Sincerely,

A handwritten signature in cursive that reads "Dan VanPeurse".

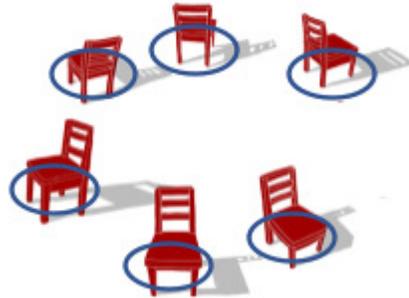
President Elect-SDCTM
Dan.VanPeurse@usd.edu
(605) 658-5971



“...these conferences and interacting with other colleagues with the same interests is what will keep you fresh and truly rejuvenates your passion for mathematics.”



Lesson Highlights



Musical Quotients

1. Set up 6 hula hoops (instead of chairs). When the music plays, students walk in a circle around the hula hoops (like musical chairs).
2. When the music stops, students quickly divide themselves evenly among the hoops.
3. There should be an equal number of students in each hoop. Any “remainder” students are out of the game.
4. After each round, write the division problem on the board with its answer. For example, if there are 19 students in the class and 6 hula hoops, the division problem is $19 \div 6 = 3 \text{ R}1$. (Three in each hoop and one “remainder” student who is out.)
5. Remove one hula hoop and begin the game again.

Standard Alignment:

3.OA.7 Multiply and divide within 100.

4.NBT.6 Find whole number quotients and remainders with up to four-digit dividends and one-digit divisors.

Submitted by:

Cindy Kroon

Montrose High School

Cindy.Kroon@k12.sd.us

Do you have a lesson that you would like to share?

Your colleagues would love to see it!

Send your lesson ideas for publication consideration to:
sdctmnewsletter@gmail.com or Amy.Schander@k12.sd.us





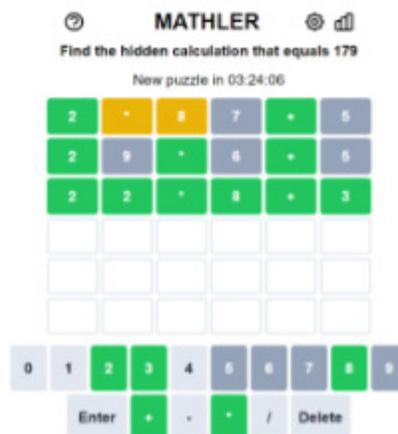
9-12 Spotlight

Wordle Anyone?

It's that time of the year when all those great classroom routines have become boring for everyone. It's that time of year when we struggle to capture students' attention away from the beautiful spring weather, the preparations for prom, or the countdown to summer. Quite honestly, all of us could use a break, but of course we still want our students to be engaging with great math. Have you heard about Wordle? Wordle is a web-based word game created by software engineer, James Wardle, and recently purchased for a large sum of money by the New York Times. The addictive word guessing game has been sweeping the social media world in recent months. Even my 15-year-old son has been playing it. Trust me – it's fun. Or better yet, Google it and give it a try.

So, how does a web-based word guessing game help me engage my math students? It doesn't. But there are several math spin-offs that are great options. First, my great math friend next door introduced me to Mathler. Mathler is very much like Wordle. Each day there is a new puzzle. Each puzzle asks you to write a 6-character mathematical statement that equals the number of the day. You can fill each character with any number from 0 to 9 or with +, -, x, /. You start with a guess, and Mathler lets you know which parts you had right, and which need to change. You have 6 guesses to figure it out. When you successfully solve the puzzle, Mathler gives you a big congratulations and allows you to share your results with friends through social media. It is a fun way to work on math facts and it really makes you think about order of operations. There are no parenthesis available, and the design of the game forces you to work only from left to right. If you try a statement that does not equal the correct number, Mathler will remind you to think about your order of operations. It is humbling for even us math professionals. Mathler can be played at 3 levels of difficulty. Your target mathematical statement can have from 5 to 8 characters and from 1 to 3 mathematical operations.

Once I was aware of Mathler, I went searching to see what else was out there. I found there are several other games out there that apply a Wordle approach to math.



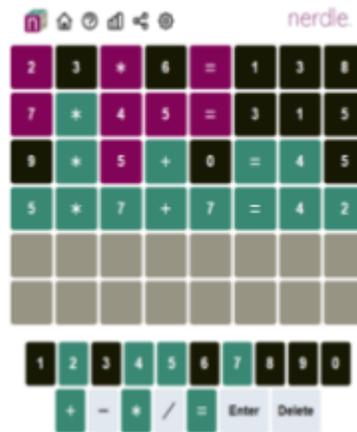
“I found there are several other games out there that apply a Wordle approach to math.”

(continued p. 6)



9-12 Spotlight *continued*

There is one called Math Wordle. That game is similar to Mathler, but it does not give you a target number. You are just trying to guess a mathematical equation, so your first guess has to be random. Math Wordle is customizable in that you can choose your mathematical equation to be between 5 and 12 characters, you can choose to use fewer than the four basic mathematical operations, and you can make it harder by adjusting how the hints are given. Maybe the most exciting option for our students is that players can make their own equation and then send it to their friends or classmates to play.



Also, in the same category is Nerdle. I kind of hate the name, but the game is fun. It is most similar to Math Wordle in that you are not given a target number at the start of the game. Rather than having customizing options, Nerdle has created a set of games each with different characteristics. You can choose the game that best matches your students and your time frame.

Hope you and your students enjoy strengthening your math skills with some spring gaming.

Jennifer Haar
SDCTM High School Liaison
Jennifer.Haar@k12.sd.us



NCTM Representative Tips

I was looking at the calendar this week and noticed that my school only has 25 days of school left. That is not a lot of time left!! Especially when one takes into account state testing, and all of the other distractions that happen at the end of the school year. I have so much to do and so little time to do it in.

To help keep my students focused on class these last few weeks, I am introducing my students to some “Problems to Ponder.” I found these problems on the NCTM website under the Classroom Resources page. The problems are arranged by grade level, so they are easy to sort through. Here is an example of one of the questions.

I had a large cookie, and I made three slices through the cookie so I could share it with my friends. The cookie was too thin to slice into layers, so each slice passed all the way through the cookie. The resulting pieces were not necessarily congruent. I gave each piece to one friend. What was the fewest number of friends who received a piece of the cookie?

For further thought: What is the greatest number of friends who got a piece of the cookie?
Answer: Fewest is 4. Most is 7

If you are looking for Problems to Ponder, NCTM has the current issue – and all of the past issues available to look through.

Upcoming NCTM events include the 2022 NCTM Annual Meeting & Exposition in Los Angeles. This conference is September 28-October 1.

Susan Gilkerson
NCTM Representative
Susan.Gilkerson@k12.sd.us

Mark’s Thoughts

REGIONAL MATH CIRCLES

Greetings!

Recently, I was able to attend the Regional Math Circles event for the first time this school year. It was so refreshing to see some familiar faces, meet new teachers, and collaborate on some mathematical tasks! I want to give a quick shout-out to Stephanie Higdon, the SD DOE mathematics specialist. The Math Circles events are a product of her creative thinking and hard work. Kudos, Stephanie!

I’m under the impression that the Regional Math Circles events will continue into next year. I encourage each of you to try to attend at least one of the events next year. It will be well worth your time!

Mark Kreie
SDCTM Vice President
Mark.Kreie@k12.sd.us



“To help keep my students focused on class these last few weeks, I am introducing my students to some “Problems to Ponder.”



“It was so refreshing to see some familiar faces, meet new teachers, and collaborate on some mathematical tasks!”



A Word from Stephanie

Greetings,

Happy Spring! It is that time of year again that I start to get excited for summer professional learning, seeing math educators that I have worked with for the past few years, and meeting new educators that I will continue to learn from.

Before I share everything I am looking forward to this summer, I want to reflect on a great year. This fall, DOE launched the Best Practices in Teaching Mathematics Regional Math Circles. Throughout this school year more than sixty educators from across the state have come together to engage rich conversations, collaborate on mathematics tasks, and built valuable relationships with one another. I am so grateful to all the educators who have facilitated and participated in workshops and look forward to another year of Regional Math Circles starting this fall! This June will also be the final retreat of the fifth cohort of the South Dakota Math and Science Leadership program. I participated in the second cohort of this program, and it definitely changed me as a leader. I look forward to continuing the partnership with the Sanford Underground Research Education and Outreach team and beginning cohort 6 this fall.

In June, I look forward to attending the SD Statewide Mentoring Academy, facilitating the final retreat for the fifth cohort of SD Math/SD Science leadership, assisting with a Curriculum Directors Day at the SD DOE, and meeting with both the Foundational Math and Math Circles facilitators. The Foundational Math facilitator group will engage in discussions around current content, practices shared with participants and prepare workshop materials. The Math Circle facilitators will review the vision and guiding principles for the program and begin curating tasks for next year's Math Circle events. I am currently reviewing applications for both groups and am excited and honored to collaborate with these amazing educational leaders!

In July, DOE will host the SD Foundational Math workshop. This will be the third year for this two-day workshop, and the second year that we will be in person. This workshop focuses on developing students' understanding of number sense and number relationships through classroom experiences and games. Last summer was a huge success, and I am hopeful this summer will also be an amazing time for learning.

I am also looking forward to the Best Practices in Teaching Mathematics workshop in July. I am excited that this will be a two-day workshop this summer. Participants will engage in discussion around grade level math tasks, vertical progression of learning, using formative assessments to guide teaching and most importantly best practices to build students' understanding of mathematics.

(continued p. 9)



“...I start to get excited for summer professional learning, seeing math educators that I have worked with for the past few years, and meeting new educators that I will continue to learn from.”



A Word from Stephanie *continued*

Please watch the DOE Math Listserv to watch for other mathematics programs throughout the summer and fall. Also encourage colleagues to sign up for the Listserv, by sending an email to listmanager@k12.sd.us, do not include a subject, and then for the message write: Subscribe DOEMath.

As stated above, the sixth cohort of the South Dakota Math/South Dakota Science leadership program will begin this fall. Applications for cohort 6 will be due May 20, 2022, and information can be found on this [SD Math/SD Science Leadership Program Google Doc](#). There are many members of SDCTM who have participated in this program. Please reach out to other members to learn the long-lasting impact of this wonderful program.

I look forward to meeting more of you throughout the summer at one or more professional learning opportunities!

Have an excellent end to your school year,

Stephanie Higdon
Stephanie.Higdon@state.sd.us
SD State Math Specialist

Congratulations!!

Please join us in congratulating the 2022 recipient of the
Diana & Grant McCann Scholarship

Madalyn Groft, Dakota State University

Congratulations Madalyn!



Presidential Award for Excellence in Mathematics and Science Teaching

At this time, we are awaiting the announcement for both the 2021 and 2022 Awardees.

2020 Presidential Award Recipients Announced!



“It is an incredible honor to be nominated for this award! I was grateful and humbled to have a colleague in the district nominate me. I could not let this opportunity to showcase my hard work and dedication pass by. However, this will not just be an end result of my passion for and dedication to mathematics. This award and the opportunities that come after will provide me a stepping stone to more professional development and networking to improve my teaching and leadership in mathematics.”

Darcy Vincent Brookings, SD | K-6 Mathematics, 2020

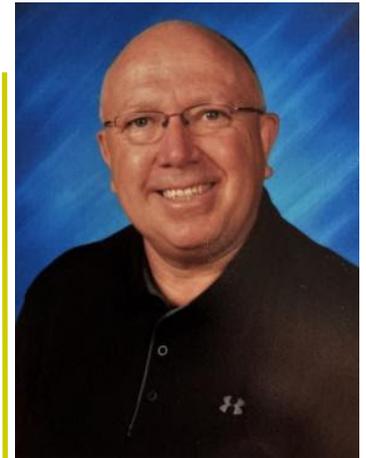


“The Presidential Award is such an honor in many ways. This award is not a single recognition. I feel this award recognizes the incredible students, staff, and coaches that have helped shape me into the teacher that I am. I am blessed to go to work each and every day and learn alongside the most incredible students who show me what it means to persevere and celebrate successes. I am so glad I can share this award with them.

Merideth Wald Black Hawk, SD | K-6 Mathematics, 2020

Mathematics Finalists

Chelsey Coverdale, a mathematics teacher from Harrisburg, SD has been teaching for 9 years. She is a 6th grade mathematics teacher at Harrisburg North Middle School. Chelsey graduated from Augustana College with a Bachelor’s degree in Elementary Education in 2012 and earned her Master of Arts in Teaching degree from Morningside College in 2018. Chelsey is a National Board Certified Teacher, an Apple certified teacher, and has participated in the South Dakota Department of Education SDMath/SDSci Leadership program.



“2020 Presidential Award Recipients Announced!”

(continued p. 11)



Presidential Award for Excellence in Mathematics and Science Teaching

Mathematics Finalists (continued)

Jodi Neugebauer, a mathematics teacher from Garretson, SD, has been teaching for 13 years. She is a 2nd grade teacher at Garretson Elementary. Jodi graduated from Dakota State University with a Bachelor's degree in Elementary Education/Special Education in 2008. Jodi is a National Board Certified Teacher and has participated in South Dakota Department of Education professional development programs such as the SDMath/SDSci Leadership program and as a facilitator/leader in Foundational Math Teacher and Math Circles workshops.

Rebecca Van Roekel, a mathematics teacher from Brandon, SD, has been teaching for 17 years. She is a 6th grade mathematics teacher at Brandon Valley Intermediate School. Rebecca graduated from Northwestern College with a Bachelor's degree in Elementary Education 2005 and earned her Masters degree in Curriculum and Instruction in Mathematics from Black Hills State University in 2009. Rebecca has been a SD Counts Teacher Leader and currently serves as a Formative Assessment PLC Team Leader in her school.

Science Finalists

Brianna Schmidt, a science teacher from Spearfish, SD, has been teaching for 8 years. She is a 2nd grade teacher at West Elementary in Spearfish. Brianna received her degree in Elementary and Special Education from Black Hills State University in 2014. In her building, she a leader in standards innovation, instructional design, is on the science curriculum team, and is a STEAM Club Educator. She is a member of the South Dakota Science Alliance and received a Master Teacher Policy Fellowship with the American Association of Physics Teachers and American Institute of Physics.

Tiffany Wolla, a science teacher from Rapid City, SD, has been teaching for 9 years. She is a 6th grade science teacher at East Middle School in Rapid City. Tiffany graduated from Black Hills State University in 2013 with a degree in Elementary Education and a Middle School minor. She is an active member of the East Middle School Building Leadership Team and had a leadership role in developing the district's 6th grade science pacing guide. At the state level, Tiffany worked on the SD state science test review in 2017.





Presidential Award for Excellence in Mathematics and Science Teaching

Presidential Award for Excellence in Mathematics and Science Teaching Overview

The Presidential Award for Excellence in Mathematics and Science Teaching (PAEMST) is the highest recognition that a kindergarten through 12th grade mathematics or science teacher may receive for outstanding teaching in the United States. Since 1983, more than 4,000 teachers have been recognized for their contributions to mathematics and science education. Awardees serve as models for their colleagues, inspiration to their communities, and leaders in the improvement of mathematics and science education.

State-Level Finalists automatically become candidates for the National Presidential Award. Two teachers from each state may be selected as the state's Presidential Awardees and will be notified officially by the White House. This will take place after a national committee reporting to the National Science Foundation makes its selection from the state-level finalists submitted by each state.

Presidential awardees receive a citation signed by the President of the United States, a trip to Washington DC to attend a series of recognition events and professional development opportunities and a \$10,000 award from the National Science Foundation.

State-Level Finalists are nominated because someone thought of them as teachers who exhibit a passion for the subject they teach; who approach their work with creativity and imagination; and who strive daily to improve individual teaching practices.

Anyone--principals, teachers, parents, students, or members of the general public--may nominate a teacher by completing the nomination form available on the PAEMST website. For more information, please visit www.paemst.org.

Why else would a nominee want to complete the application process?

45 continuing education contact hours from the South Dakota Department of Education can also be earned toward certificate renewal by completing the application process. To be eligible, a PAEMST candidate must complete all components of the application process and submit a scorable application that can be sent on to the state selection committee. All applicants submitting a scorable application will earn credit, not just the state finalists whose materials will be sent on to a national selection panel.

(continued p. 13)



PAEMST *continued*

Now that you know more, Do YOU:

Teach mathematics in grades 7-12?

Have a Bachelor's degree from an accredited institution?

Have at least 5 years of full-time employment prior to the 2021-2022 school year?

Teach students full-time at least 50% of a school's allotted instructional time?

Have a passion for the subject you teach, approach your work with creativity and imagination, and work to improve your individual teaching practice daily?

If you have answered YES to the previous questions and are a mathematics or science teacher in grades 7-12, consider applying for the 2022-2023 PAEMST award this FALL! The nomination window will open in late August or early September. For more program information, visit www.PAEMST.org



If you have any questions, please contact:

Allen Hogie

SD PAEMST Mathematics Coordinator
Allen.Hogie@k12.sd.us
605.553.8095

Jennifer Fowler

SD PAEMST Science Coordinator
Jenifer.Fowler@k12.sd.us
605.431.5438

2022 SDCTM Summer Symposium

"Digging into the Statistics and Probability Standards"

In this workshop, teachers will dive deep into the South Dakota Statistics and Probability Standards for grades 5-12. Participants can expect to be engaged in a collaborative day of exploring the standards and discovering connections through the vertical alignment. We will brainstorm ideas of how to integrate the statistics and probability standards into your curriculum.

Presenter: Mark Kreie

AP Statistics Teacher, Brookings High School
Desmos Fellow
SDCTM Vice President

July 14, 2022

8 AM - 4PM

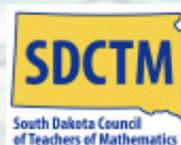
DAKOTA
WESLYAN
UNIVERSITY

*Registration deadline in June 1, 2022

**Registration Fee: \$60 for members, \$120 for non-members

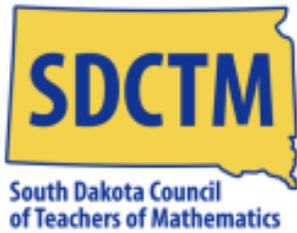
Registration Link:

<https://forms.gle/zM6xqTayFdTYHKYw7>





2019-2021
SDCTM Executive Board Members



www.sdctm.org

SDCTM President
Sheila McQuade
Sioux Falls O'Gorman High School
(605) 336 - 3644
SMcQuade@sOGKnights.org

SDCTM Past President
Crystal McMachen
Rapid City SouthWest Middle School
(605) 394-6792
Crystal.McMachen@k12.sd.us

President-Elect
Dan VanPeursem
University of South Dakota
Dan.VanPeursem@usd.edu

Vice-President
Mark Kreie
Brookings High School
(605) 696-4236
Mark.Kreie@k12.sd.us

Secretary
Amy Schander
Gayville-Volin High School
(605) 267-4476
Amy.Schander@k12.sd.us

Treasurer
Jay Berglund
Gettysburg High School
(605) 765-2436
Jay.Berglund@k12.sd.us

Elementary Liaison
Lindsey Tellinghuisen
Willow Lake Elementary
(605) 625-5945
Lindsey.Tellinghuisen@k12.sd.us

Middle School Liaison
Molly Ring
Brandon Valley Middle School
(605) 625-5945
Molly.Ring@k12.sd.us

Secondary Liaison
Jennifer Haar
Rapid City Stevens High School
605-394-4051
Jennifer.Haar@k12.sd.us

Post-secondary Liaison
Chris Larson
Department of Mathematics and Statistics
South Dakota State University
(605) 690-4957
Christine.Larson@sdstate.edu

NCTM Representative
Susan Gilkerson
Rutland School
(605) 586-4352
Susan.Gilkerson@k12.sd.us

SDCTM Newsletter Editor
Amy Schander
Gayville-Volin High School
(605) 267-4476
Amy.Schander@k12.sd.us

SDCTM Webmaster
Cindy Kroon
Montrose High School
(605) 363 - 5025
Cindy.Kroon@k12.sd.us

Conference Coordinator Emeritus
Jean Gomer
(605) 629-1101

SD STEM Ed Conference Coordinator
Cindy Kroon
Montrose High School
(605) 363 - 5025
Cindy.Kroon@k12.sd.us

SD STEM Ed Treasurer & Registrar
Sheila McQuade
Sioux Falls O'Gorman High School
(605) 336 - 3644
SMcQuade@sOGKnights.org