



MAA MATHFEST
August 3-6, 2016

Talks by Mathematicians of Color
and HBCU Faculty at MAA MathFest
<http://www.maa.org/meetings/mathfest>

Thursday, August 4



Robert Megginson (University of Michigan)
Mathematical Sense and Nonsense outside the Classroom: How Well Are We Preparing Our Students to Tell the Difference?
Invited Address: MAA Invited Address
8:30 AM – 9:20 AM, Regency Ballroom, Columbus Convention Center



Israel Ncube (Alabama A&M University)
Mathematical and Computational Modeling of Anaesthetic-Induced Neural Oscillations
General Contributed Paper Session: Applied Mathematics
1:00 PM – 1:10 PM, Union D, Columbus Convention Center



Christina Eubanks-Turner (Loyola Marymount University)
The Attitudes of Students in Calculus of Life Science Toward Mathematics in Their Careers
General Contributed Paper Session: Teaching Calculus
4:00 PM – 4:10 PM, Union E, Columbus Convention Center

Friday, August 5



Robert Hampshire (University of Michigan)
Urban Analytics: The Case for Smart Parking
Invited Address: NAM David Harold Blackwell Lecture
1:00 PM – 1:50 PM, Regency Ballroom, Columbus Convention Center



Reginald L. McGee (Mathematical Biosciences Institute)
Singled Out: Using Single-Cell Data to Identify Signaling Trends in Leukemia
Invited Paper Session: Mathematics and the Life Sciences at MBI
2:20 PM – 2:50 PM, Harrison, Columbus Convention Center



Jacqueline Brannon Giles (CC Central College/Texas Southern University/SHAPE Community Center)
Integration of Faith and Learning in the Mathematics Curriculum
Themed Contributed Paper Session #5: Inviting All Students to Do Mathematics – Engaging Courses, Projects, & Activities for Liberal Arts Students, Part C
2:20 PM – 2:35 PM, Union C, Columbus Convention Center



Dandrielle Lewis (University of Wisconsin – Eau Claire)
Do You: How Mathematics+Mentoring+Passion=Opportunities
Alder Award Session
2:30 PM – 2:50 PM, Hayes, Columbus Convention Center

Mathematics Connections in Ministry, Money and Movies

Professor Jacqueline Brannon Giles

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Central College/Texas Southern University/S.H.A.P.E. Community Center

Transcript

Introduction

The presence of this session on the MathFest program inspires us to realize the need to teach in a way that inspires a love and passion for mathematical thinking. As a two year college professor I have been asked to explain how mathematics is helpful or present in the lives of my students. I have accepted the challenges of those questions, and often I am able to come up with clever connections to jog the minds of students who are fearful and uninspired when it comes to learning mathematics.

The Lesson

One day, two older corporate executives who were taking Calculus Two to review their math and to move toward applying for MBAs and other advanced degrees were joking in class about Tim Tebow, the former NFL player who has a commitment to a belief system. I was surprised at their comments in my math class and since there were a few minutes available to surprise them with connections to mathematics and to a passage that Tim Tebow believed in, I asked them, "Can I teach?" They said, "Yes, Professor."

I recited John 3:16, Tebow's favorite scripture. I told the Calculus Two students that there were many mathematics connections in the scripture. They seemed surprised and I started the lesson with a smile.

The connections are listed:

For God so loved	"so" is connected to optimality, a math term
The world	"world" is connected to universe, a math term
That He gave	"gave" is connected to input, a math term
His Only	"only" is connected to uniqueness, used in Existence and Uniqueness. Also, E written backwards is the universal quantifier meaning "there exists at least one."
Begotten Son	"Begotten" is connected to derivative. The derivative of e^x is e^x . He is a derivative of God and He is God.

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That whosoever	When we prove theorems, we use the upside down A, which represents for each, for every, and for all. Whosoever is connected with the symbol.
Believeth	In topology we talk about transformations. Nothing happens except you believe and when you believe it causes a transformation in your life.
In Him	The Way (Trajectory), The Truth (Universal Laws), The Life (Continuity in Time and Space)
Shall not perish	In math we talk about intervals, (a,b) , where b is the endpoint. Shall not perish means that we will not come to an end point.
But will have everlasting life	We talk about different infinities. The countable infinity is less than the cardinality of the real numbers. If we generate the power set of a set, the cardinality of the power set is 2^n and $2^n > n$. This means that there are many infinities. So, Tim Tebow's favorite scripture is John 3:16 and as described by one of my students in a Fundamentals of Math class, "It is The Faith Equation." I added, when the student offered the description, "Yes, it is The Faith Equation, that transforms man from time to eternity, with a promise that man will not perish, if he or she believes."

Other Connections

Math in Movies

Several years ago, I was asked to review a movie starring Anthony Hopkins. The review was published by the MAA and it can be seen on the internet. See link: <http://www.maa.org/proof-three-reviews>

A class project will be designed to view the movie "Hidden Figures" and students will be asked to identify the mathematics displayed in the movie or discussed in the movie.

<http://www.blackfilm.com/read/2016/05/first-pics-to-hidden-figures-with-taraji-p-henson-octavia-spencer-janelle-monae/>

Math and Money

One day while tutoring at S.H.A.P.E. Community Center (www.shape.org), in Houston, Texas a professor shared examples of his

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work using money and mathematics. His area is called numismatics, and his program was implemented at the historical Jack Yates High School in Houston, Texas.

In collaboration with Dr. Della Bell, Dr. Llayron Clarkson, Dr. Alvin Wardlaw, and others we are developing curricular materials for use in community centers. The materials are designed to impact the academic experiences of K-8 students from economically challenged neighborhoods and to bring young students into direct contact and dialogue with senior mathematicians. The goal is to create awareness of the beauty, utility, relevance and connections of mathematics with all subjects and all echelons of society. The S.H.A.P.E. Community Center promotes intergenerational discussions and dialogue and integrating STEM concepts into the conversations will help to encourage excellence in STEM professions in future generations.

I have shared three examples of ways to integrate other disciplines and concepts into the classroom to awaken the interest of students from all social-economic backgrounds. We must find ways of sparking the interest of all students so that we can respond to the call for excellence in mathematics and in all STEM professions in the United States.

Finally, do you accept your call to serve as a teacher who inspires, nurtures and teaches ALL students to Do mathematics?