The BIG News

BUSINESS, INDUSTRY, AND GOVERNMENT SPECIAL INTEREST GROUP OF THE MATHEMATICAL ASSOCIATION OF AMERICA

New Charter:

The updated BIG SIGMAA charter was approved by the Committee on SIGMAAs. See the charter at the BIG SIGMAA website:
http://sigmaa.maa.org/big/Charter.html

Meet the New Officers

The BIG SIGMAA is happy to welcome two new officers, whose term begins in January.

The new Vice Chair for Services is **Jan Rychtar**. Jan received his Ph.D. from University of Alberta in Canada and joined the MAA in 2004 after starting a position at UNC Greensboro. He is currently a professor in the Department of Mathematics and Applied Mathematics at Virginia Commonwealth University. He is active in undergraduate research and mentored many students through PIC Math, REU, NREUP, and CURM grants and projects. He is looking forward to helping build strong connections within the BIG SIGMAA community.

The new Vice Chair for Membership is **Namyong Lee**. Namyong began his career as an industrial mathematician from his Ph.D. program at the University of Minnesota and Institute for Mathematics and its Applications (IMA). Since then, he has engaged in various industrial math projects and related courses teaching. Namyong is one of the founding members of the Minnesota Modeling and Simulation Center at Minnesota State University, Mankato, and has served as a director of research. He also served MAA North Central Section as a section president and a section NExT program leader. Namyong is looking forward to helping build connections within the BIG SIGMAA community.

JMM Highlights

There are no official BIG SIGMAA activities at the Joint Meetings in 2023. However, there are plenty of things that may be of interest to our members. Here are a few that we have gathered. For more information, see the JMM website.

Invited Addresses:

- AAAS-AMS Invited Address: Philip Maini, University of Oxford, *Are we there yet? Modelling collective cell motion in biology and medicine*. Fri. Jan. 6, 11:10 a.m.-12:10 p.m.

- MAA-SIAM-AMS Hrabowski-Gates-Tapia-McBay Lecture: Omayra Ortega, Sonoma State University; *Who are we serving with our scholarship: a Covid model case study*. Fri. Jan. 6, 9:00 a.m.-10:00 a.m.

- TPSE Invited Address: Sylvester James Gates, Jr, Clark Leadership Chair in Science, University of Maryland, past president of American Physical Society, National Medal of Science; *What challenges does data science present to mathematics education?* Thurs. Jan. 5, 9:50 a.m.-10:50 a.m.

JMM Highlights, continued

- ASA Committee of Presidents of Statistical Societies Lecture: Robert Santos, US Census Bureau, To be announced; Fri. Jan. 6, 8:00 a.m.-9:00 a.m.

Paper Sessions:

- AMS Special Session on Current Progress in Computational Biomedicine; Fri. Jan. 6, 1:00 p.m.-6:00 p.m.

- AMS Special Session on Financial Mathematics I; Fri. Jan. 6, 1:00 p.m.-5:30 p.m.

- AMS Special Session on Financial Mathematics II; Sat. Jan. 7, 1:00 p.m.-4:30 p.m.

- AMS Special Session on Understanding COVID-19: Three Years of Mathematical Models to Address the Global Pandemic I; Weds. Jan. 4, 8:30 a.m.-12:00 p.m.

- AMS Special Session on Understanding COVID-19: Three Years of Mathematical Models to Address the Global Pandemic II; Thurs. Jan. 5, 8:30 a.m.-12:00 p.m.

- COMAP Special Session on COMAP's Modeling Contests: Engaging Students and Faculty in Mathematical Modeling, I; Thurs. Jan. 5, 8:00 a.m.-12:00 p.m.

- COMAP Special Session on COMAP's Modeling Contests: Engaging Students and Faculty in Mathematical Modeling, II; Thurs. Jan. 5, 1:00 p.m.-4:30 p.m.

Do you know of anything that we missed? Email collinbe@uwplatt.edu, and I can add it to the newsletter.

Puzzle Corner

Three quickies, adapted from Half a Century of Pythagoras Magazine, Alex van den Brandhof, Jan Guichelaar, and Arnout Jaspers, eds., MAA Press.

1) With a certain whole number of dollars in my wallet, I go out to buy five items. Unfortunately, I do not have enough money to buy all five. I do have enough to buy any combination of four of the five. Depending on the choices of the items, they would cost me $37, $41, $47, $50, or $57. How much money do I have?

2) Take the sum of all positive fractions that cannot be simplified, are smaller than one, and have a numerator of at most 100. Is the sum an integer or a fraction?

3) More than 100 people live on a street. Prove there are 11 people living on the street for whom the sum of their ages is divisible by 11.
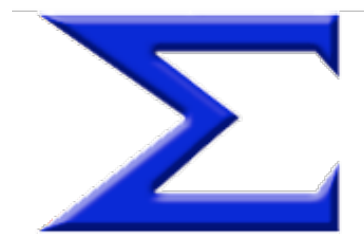
SIGMAA Officers:

Caroline Maher-Boulis, Chair

Jennifer Travis, Vice Chair for Membership

Benjamin V.C. Collins, Vice Chair for Services

Vinodh Chellamuthu, Vice Chair for Programs

Aaron B. Luttman, Secretary/Treasurer

BIG SIGMAA WEB SITE:

HTTP://SIGMAA.MAA.ORG/BIG/BIG_SIGMAA_Home.html

Puzzle Corner Answers:

Answer 1: Each item is represented in the partial totals exactly four times. So the total amount of money for the five items is (37+41+47+50+57)/4=58 dollars. Since I didn't have enough to buy all the items, I didn't have $58. I did, however, have enough to buy the four items that add up to $57, so I must have had $57. (It's possible, but not necessary, to recover the cost of the individual items.)

Answer 2: Except for 1/2 the fractions appear in complementary pairs: 1/3 and 2/3, 1/4 and 3/4, 1/5 and 4/5, etc., each of which adds to 1. So the sum of the fractions is an integer plus 1/2.

Answer 3: Divide residents by remainder of their ages modulo 11. If any group has 11 or more members, then take 11 members from that group. The sum of the ages of those members has remainder 0 modulo 11.

If no group has 11 members, then no group can be empty, since there are at least 101 people on the street. Take one person from each group. The remainder of the sum of the ages for this group is 0+1+2+…+10=55, which is 0 mod 11.