



COLLABORATE

MOSCIBO • 2020

COLLABORATE FOR SCIENCE

When does $1+1 = \text{More than two}$? Ever hear of Marcel Grossman or Michele Besso? I know you've heard of Albert Einstein. Grossman and Besso **COLLABORATED** with Einstein. Discussions among the three helped Einstein derive the special theory of relativity.

The Genographic Project is a **COLLABORATION** between National Geographic and IBM and the Waitt Foundation. Over 140 countries are currently participating in this research which aims to collect DNA samples from indigenous populations across the world, analyze them to map their ancestry, and therefore understand human migration patterns.

James Watson, Francis Crick, Maurice Williams and Rosalind Franklin **COLLABORATED** to discover the double helix structure of DNA.

COLLABORATION is the key to scientific advancements; there are many people behind every great Scientist. Think of the thousands of **COLLABORATORS** at Cern who validated the existence of the Higgs boson; or the international teams that spent 13 years sequencing the first human genome.

An important aspect of Science Bowl is the team structure. By leveraging each other's strengths, you become greater than any of us can be alone. Thus:

$$1+1 = \text{More than 2}$$

COLLABORATIVE partnerships help in a myriad of ways – to birth novel ideas, help bring complementary skills and knowledge to the table, and ultimately gives rise to breakthroughs that may not be possible otherwise.

This year, Missouri Science Bowl celebrates the **COLLABORATIVE** spirit that is in each of you as we invite you to work together to achieve more.

We have 22 teams from 11 schools coming together today to compete for the title of Missouri Science Bowl Winner, which includes the chance to travel to Washington D.C. to represent Missouri at the National Science Bowl competition. I hope all of you take the opportunity to **COLLABORATE** and learn from each other today. And please tell others about Science Bowl and help them explore their passion for STEM.

Make sure you stop by the photo booth with your teammates and capture this moment. And long after today, I hope you continue to **COLLABORATE** to impact your community, your education, and our future generations.

Amy Stephens
Event Director



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@ MoSciBo

AGENDA

Time	Activity	Location / Format
8:00am - 8:30am	Team Check-In	Simon Hall Outside May Auditorium
8:30am - 8:50am	Kickoff & Keynote Speakers	Simon Hall - May Auditorium
Round Robin Matches will be in Simon & Seigle Hall – See page 5-6 for room numbers		
9:00am - 9:30am	Round Robin 1	<i>8min. round / 2min. break / 8min. round</i>
9:30am - 10:00am	Round Robin 2	<i>8min. round / 2min. break / 8min. round</i>
10:00am - 10:30am	Round Robin 3	<i>8min. round / 2min. break / 8min. round</i>
10:30am - 11:00am	Round Robin 4	<i>8min. round / 2min. break / 8min. round</i>
11:00am - 11:30am	Round Robin 5	<i>8min. round / 2min. break / 8min. round</i>
11:30am - 12:25pm	Lunch	Simon Hall - May Auditorium <i>* Tie Breaker Round if needed</i>
12:25pm - 12:35pm	RR Results Announced	Simon Hall - May Auditorium
12:35pm - 12:45pm	Coaches & Team Captains <i>Get double elimination room assignments</i>	Seigle Hall Room 109
12:45pm - 12:55pm	Report to Competition Rooms	Seigle Hall (Coaches have schedule)
1:00pm - 1:30pm	DE Round 1	<i>8min. round / 2min. break / 8min. round</i>
1:30pm - 2:00pm	DE Round 2	<i>8min. round / 2min. break / 8min. round</i>
2:00pm - 3:30pm	Cyber Challenge	Simon 113
2:00pm - 2:30pm	DE Round 3	<i>8min. round / 2min. break / 8min. round</i>
2:30pm - 3:00pm	DE Round 4	<i>8min. round / 2min. break / 8min. round</i>
3:00pm - 3:30pm	DE Round 5	<i>8min. round / 2min. break / 8min. round</i>
3:30pm - 4:00pm	DE Final Round(s)	Simon Hall - May Auditorium
4:00pm - 4:30pm	Awards	Simon Hall - May Auditorium

2019 MOSCIBO WINNERS



The winning team from Ladue Middle School was the 2019 Missouri Regional Science Bowl winners, and earned a spot in the National Science Bowl. They traveled to Washington D.C. last spring to compete against other state finalists.

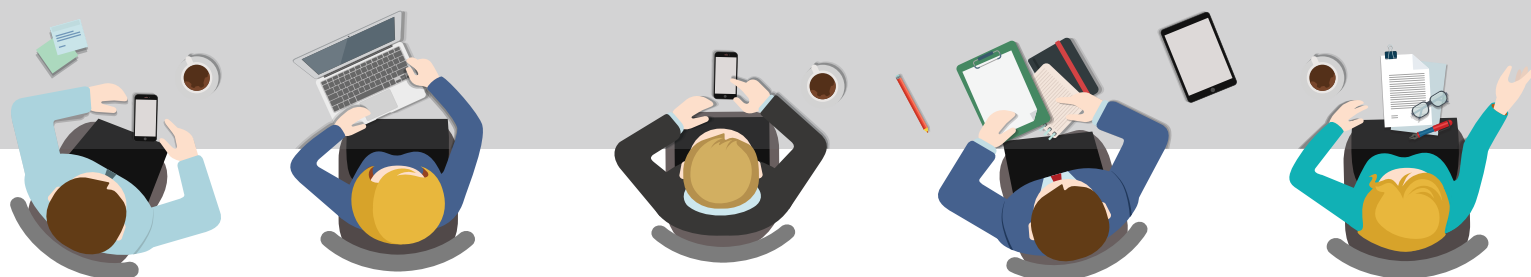


SCRIMMAGE – JANUARY 30TH



ROUND ROBIN COMPETITION SCHEDULE & LOCATION

Room	Division	Round 1	Round 2
		9:00 AM	9:30 AM
Simon 020	Higgs Boson	St. Genevieve 1 v. Sperreng 2	St. Genevieve 1 v. Dubray 3
Simon 022	Higgs Boson	Dubray 3 v. West Middle 2	Ladue 1 v. Sperreng 2
Simon 023	Higgs Boson	Ladue 1 v. Crestview 3	Crestview 3 v. West Middle 2
Seigle 111	Double Helix	Ft. Zumwalt S. 3 v. Ladue 2	Ft. Zumwalt South 3 v. Dubray 1
Seigle 210	Double Helix	Dubray 1 v. Sperreng 3	Crestview 1 v. Ladue 2
Seigle L003	Double Helix	Crestview 1 v. BYE	Sperreng 3 v. BYE
Seigle 205	Genographic	St. Gabriel 1 v. Ft. Zumwalt S. 1	St. Gabriel 1 v. Christ the King 1
Seigle 206	Genographic	Christ the King 1 v. Dubray 2	Barstow 1 v. Ft. Zumwalt S. 1
Seigle L002	Genographic	Barstow 1 v. BYE	Dubray 2 v. BYE
Seigle 301	Relativity	St. Gabriel 2 v. West Middle 1	St. Gabriel 2 v. Selvidge 1
Seigle 304	Relativity	Selvidge 1 v. Crestview 2	Sperreng 1 v. West Middle 1
Seigle 305	Relativity	Sperreng 1 v. Ft. Zumwalt S. 2	Crestview 2 v. Ft. Zumwalt S. 2



Round 3	Round 4	Round 5
10:00 AM	10:30 AM	11:00 AM
St. Genevieve 1 v. Ladue 1	St. Genevieve 1 v. Crestview 3	St. Genevieve 1 v. West Middle 2
Crestview 3 v. Dubray 3	West Middle 2 v. Ladue 1	Sperreng 2 v. Crestview 3
West Middle 2 v. Sperreng 2	Sperreng 2 v. Dubray 3	Dubray 3 v. Ladue 1
Ft. Zumwalt South 3 v. Crestview 1	Sperreng 3 v. Crestview 1	Ft. Zumwalt S. 3 v. Sperreng 3
Ladue 2 v. Sperreng 3	Ladue 2 v. Dubray 1	Dubray 1 v. Crestview 1
Dubray 1 v. BYE	Ft. Zumwalt S. 3 v. BYE	Ladue 2 v. BYE
St. Gabriel 1 v. Barstow 1	Dubray 2 v. Barstow 1	St. Gabriel 1 v. Dubray 2
Ft. Zumwalt S. 1 v. Dubray 2	Ft. Zumwalt S. 1 v. Christ the King 1	Christ the King 1 v. Barstow 1
Christ the King 1 v. BYE	St. Gabriel 1 v. BYE	Ft. Zumwalt S. 1 v. BYE
St. Gabriel 2 v. Sperreng 1	St. Gabriel 2 v. Ft. Zumwalt S. 2	St. Gabriel 2 v. Crestview 2
Ft. Zumwalt S. 2 v. Selvidge 1	Crestview 2 v. Sperreng 1	West Middle 1 v. Ft. Zumwalt S. 2
Crestview 2 v. West Middle 1	West Middle 1 v. Selvidge 1	Selvidge 1 v. Sperreng 1



2020 PARTICIPATING SCHOOLS

Christ the King School

Coach: Laura Kent

Team 1: Henley Stith, Vanessa Trevino, Isabella Rowley, AJ Davis, Malica Marteen

Crestview Middle

Coaches: Kristina Groves, Karen Betz

Team 1: Andrew Wu, Josh Li, Abhiram Permaredy, Ankush Vasireddy, Arnav Busani

Team 2: Dennison Harris, Yiyun Lu, Vedha Inampudi, Noah Southerland, Alex Chen

Team 3: Jatin Sridhar, Aryan Valsa Pradeep, Pranav Vaikuntam, Ronith Gouni, Jason Zhao

Dr. Bernard J. Dubray Middle

Coaches: Alicia Black, Wes Cullen

Team 1: Claire Gwak, Joshua Moore, Emma Crutchfield, Morgan Wedekin, Braden Weber

Team 2: Margaret Strebeck, Jaylah Burton, Nolan Wilson, Lilly Zimmer, Xander Dewitt

Team 3: Annabelle Bryan, Caitlin Dougherty, James Orth, Logan Dabbs

Ft. Zumwalt South Middle

Coaches: Erin Rousan, Carissa Sanders

Team 1: Sivani Vasireddy, Carter Muehling, Liam Plowman, Cooper Gorham, Shreenik Enturi

Team 2: Lucy Pham, Kayden Bequette, Bella Mazzaese, Aleksandar Marinkovic, Charlie Alles

Team 3: Garrett West, Drew Fattic, Nandini Aluri, Talia Wright, Nate Boyer

Ladue Middle

Coaches: Martin T. Long, Lisa Stein

Team 1: Rohan Suri, Aditya Jain, Bheeki Dhawan, Kevin Tang, Matthew Awad

Team 2: Luke Ye, Aaron Lin, Eva Kaul, Anthony Zhao, William Yin

Robert H. Sperreng Middle

Coach: Julie Roy

Team 1: Ben Dunsford, Cindy Yao, Vihaan Choudhary, Vidur Kothur, Alec West

Team 2: Eli Meyer, Manasi Tripathi, Henry Clay, Jacob Unzicker

Team 3: Isaac Charney, Suzan Clinton, Kyra Kidder, Safiya Hasan



Selvidge Middle

Coaches: Jane DeLong, Christy HefeLe

Team 1: Michael Grill, Bennet Toth, Emaline Little, Brooke Thoele, Ian Ross

St Gabriel the Archangel School

Coach: Greg Buechter

Team 1: Grace Hennessy, Nora Rohatgi, Nora O'Connor, Mary Bergman, Nadia Ricketts

Team 2: Annie Horn, Noah Isaac, Quinn Apprill-Sokol, Noah Ruhland Lynn

Ste. Genevieve Middle

Coach: Katie Deimund

Team 1: Jeremiah Kunz, Sophi Fritsch, Adam Allen, Charlie Corbett, Aidan Lewis

The Barstow School

Coach: Sarah Holmes

Team 1: Sri Pattabiraman, Sunny Gandhari, Avani Lakkireddy, Nithin Guduputi

Parkway West Middle

Coach: Anna Scott

Team 1: Sidharth Rajagopal, Sasha Tripathi, Aristuto Paul, Jason Tsao

Team 2: Sathvik Suresh, Anish Jindal, Devansh Dixit, Rachel Sykes



2020 SPEAKERS



Dr. Deepa Balasubramanian - Trait Delivery Lead - Bayer

Deepa Balasubramanian leads the Trait Delivery team in the Crop Science R&D division of Bayer located in St. Louis, Missouri. She received her PhD in Biochemistry and Molecular Biology at the Ohio State University specializing in cancer biology and continued her research in this area as a post-doctoral fellow at the University of North Carolina in Chapel Hill. In 2005, she joined Athenix, a small Ag Biotech start-up company as a research scientist in the pest control discovery group. In 2009, Athenix was acquired by Bayer where she continued her career in the Trait Research Organization in RTP, NC and managed teams for Insect Control discovery and development. This was followed by a three assignment in Germany to work in R&D Regulatory Science organization for Bayer as well as the R&D integration team. Deepa currently resides in St. Louis with her husband, Todd. She enjoys travelling to learn about new cultures and seeing different landscapes.



Zaheer Chaglani - Global Client Partner - Cognizant

Zaheer Chaglani has been associated with the Information Technology industry for around 20 years, and has been part of the Cognizant family for 16 years. He has played a variety of technical, management and leadership roles and is currently the Global Client Partner responsible for the helping clients on their digital transformation journey and helping them transition to the next gen IT driven business. He is leading an international team across North America, Latin America, EME and APAC. He is recognized as a people leader, he supports and promotes diversity and developing emerging workforce talent.

Zaheer grew up in TamilNadu, India before moving to the United States, He has a Masters in Computer Applications from Bharathiar University and is certified in Disruptive Strategy from Harvard Business School.

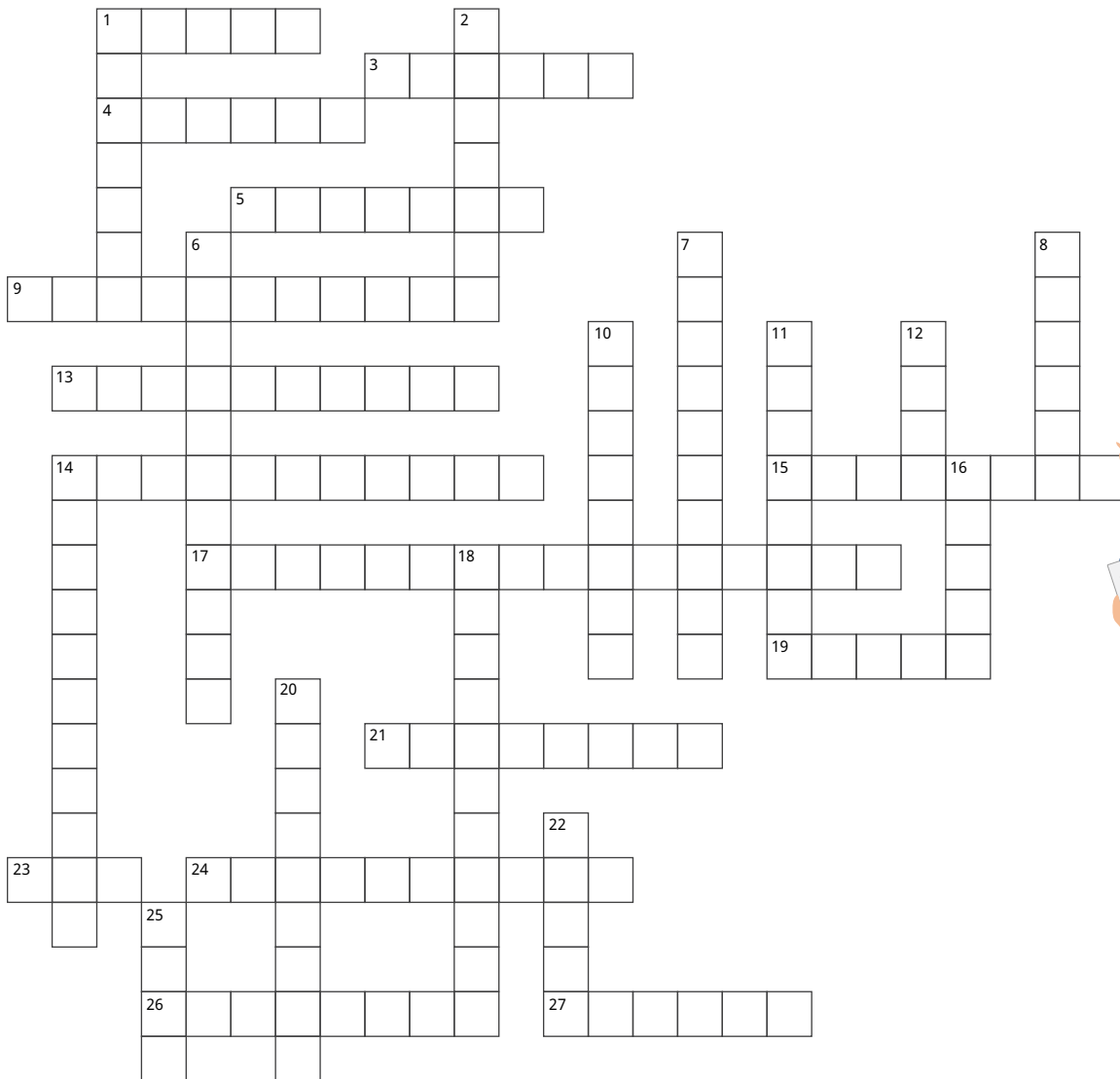


CYBER CHALLENGE

Teams not participating in the afternoon double-elimination semi-finals will **COLLABORATE** with their teammates in a **computer-based Cyber Challenge** - competing for a prize to be awarded at the end of the day ceremony!

A **first-time pilot event** in partnership with the National Science Bowl

CROSSWORD



Across

1. Newtons ____ Law of Motion: Objects at rest tend to stay at rest
3. Measure of the pull of gravity on the mass of an object
4. One of the three states of matter
5. The ____ of air is the weight of a given volume of air
9. Absolute pressure includes this along with gauge pressure in its final reading
13. What weighs less than air?
14. The force a rotating object exerts outward away from the center of rotation
15. This is the force that acts on a unit of area.
17. The amount of water vapor actually present in the atmosphere.
19. Newtons ____ Law of Motion: For every action there is an opposite and equal reaction
21. Force is Area times ____
23. One of the three states of matter
24. The transfer of physical heat by direct contact
26. ____ humidity is the ratio of the amount of vapor actually present in the atmosphere to the amount that could be present
27. If the pressure of a confined gas is doubled, the pressure will do what

Down

1. The point about which a lever rotates
2. Energy in motion
6. Ratio of the span to the chord of the airfoil
7. The transfer of heat by means of moment of a heated gas of liquid.
8. Anything which occupies space and has weight
10. The boiling point of a given liquid varies with ____
11. The point where humid air is cooled to become saturated
12. The measure of the quantity of matter in an object
14. The force a rotating object exerts inward from the center of rotation
16. One of the three states of matter
18. The speed of sound varies with a change in this
20. Energy at rest
22. Force times distance divided by time
25. Force times Distance

SPECIAL THANKS

Platinum Sponsors



Gold Sponsors



Silver Sponsors



Thanks to the volunteers who make today possible.

A special thank you to the following leaders:

Jasmin Sekic
Fundraising Director and Event Assistant

Anne Julius
Vice President

Aimee Billingsley
Treasurer and Event Setup Director

Chris Bradburn
School Outreach Director

Brian Duperrett
Social Media and Creative Director

Wendy Miller
Secretary and Digital Director

Collin Beachum
Science Director

Christine Freestone
Volunteer Outreach Director

Sam Simms
Project Manager