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Undergraduate Research Conference at
Missouri S&T

17th Annual Undergraduate Research
Conference (UGRC) - 2022

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17th Annual Undergraduate Research Conference Winners

Missouri University of Science and Technology

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[Missouri S&T announces Undergraduate Research Conference winners](#)

Twenty-six students received recognition and cash awards as winners of the 17th annual Undergraduate Research Conference at Missouri S&T this April. The conference featured oral and poster exhibitions that represented work from students in a broad variety of majors. First-place winners were awarded a cash prize of \$500. Second- and third-place finishers received \$250 and \$100, respectively. Prizes for group projects were split equally among group members.

During this year's conference dozens of Missouri S&T students presented their research projects to the public. Students were required to prepare either an oral presentation or a poster summarizing their research, and had to be ready to take questions from judges and conference attendees. To view the complete list of students who participated along with their research abstracts, visit academicsupport.mst.edu/experientiallearning/ugrc.

Oral Category:

Arts and Humanities

First place – James Drennan, a sophomore in Spanish and civil engineering from St. Louis, for research titled “La Fuerza de la Mujer (The Strength of Women).” The research advisor is Dr. Emilia Barbosa, assistant professor of Spanish.

Second Place – Donovan Mefford, a senior in history from Hannibal, Missouri, for research titled “The Motivations and Goals in the German Peasants’ War.” The research advisor is Dr. Michael Bruening, professor of history and political science.

Engineering

First Place – Jacob Head, a junior in petroleum engineering from Imperial, Missouri, for research titled “Impact of Fiber on Re-crosslinkable Particle Gels.” The research advisor is Dr. Baojun Bai, professor of petroleum engineering.

Sciences – section 1

First Place – Joey Gloriod, a senior in chemistry from O’Fallon, Missouri, for research titled “THQ Synthesis, Formation of Aerogels for CO₂ Capture.” The research advisor is Dr. Chariklia Sotiriou-Leventis, professor of chemistry.

Second Place – Reece Beattie-Houser, a junior in physics from Wildwood, Missouri, for research titled “Scalar Susceptibility of a Diluted Classical XY Model.” The research advisor is Dr. Thomas Vojta, Curators’ Distinguished Professor of physics.

Sciences – section 2

First Place – Anthony Lonsdale, a senior in physics from Kansas City, Missouri, for research titled “Applying Spin Dynamics Methods to Uranium Dioxide.” The research advisor is Dr. Aleksandr Chernatynskiy, associate professor of physics.

Second Place – Samuel Hackett, a first-year student in chemistry from O’Fallon, Missouri, for research titled “Carbon Aerogels for High Capacity Adsorption of CO₂.” The research advisor is Dr. Chariklia Sotiriou-Leventis, professor of chemistry.

Sciences – section 3

First Place – Michaela Quinones, a junior in biological sciences from Kansas City, Missouri, for research titled “Nutrient Release from Aquatic Plants.” The research advisor is Dr. Dev Niyogi, professor of biological sciences.

Second Place – Allison Hermelink, a sophomore in biochemical engineering from Kansas City, Missouri, for research titled “NMR Relaxometry of Syngas-to-Methanol Conversion.” The research advisor is Dr. Klaus Woelk, associate professor of chemistry.

Third Place – Jordan Stevens, a senior in physics from Terre du Lac, Missouri, for research titled “Early Dark Energy in Precision Cosmology.” The research advisor is Dr. Shun Saito, assistant professor of physics.

Poster Category

Arts and Humanities

First Place – Gregory Dreisewerd, a first-year student in mechanical engineering from Ballwin, Missouri, for research titled “The History of Automobiles in the United States.” The research advisor is Dr. Diana Ahmad, Curators’ Distinguished Teaching Professor of history and political science.

Engineering

First Place – Caleb Moellenhoff, a sophomore in chemical engineering from Ballwin, Missouri, for research titled “Designing Novel Modular Biodiesel Plant.” The research advisor is Dr. Joseph Smith, professor of chemical and biochemical engineering.

Second Place – Elizabeth Nolte, a first-year student in computer science from Manchester, Missouri, for research titled “Simulation of a Photonic Crystal Fiber.” The research advisor is Dr. Mina Esmaeelpour, assistant professor of electrical and computer engineering.

Research Proposal

Second Place – Christian Bigler, a first-year student in biological sciences from Fenton, Missouri, for research titled “Effect of Dbf2 on Phosphorilation.” The research advisor is Dr. Katie Shannon, teaching professor of biological sciences.

Sciences – section 1

First Place – Jennifer Harrell, a senior in biological sciences from Union, Missouri, for research titled “Assessing the Effects of Age and Sex on mTBI Severity.” The research advisor is Dr. Julie Semon, associate professor of biological sciences.

Second Place – Vaughn Foreman, a junior in chemistry from Raytown, Missouri, for research titled “Supramolecular Assembly of Metal Phosphates.” The research advisor is Dr. Amitava Choudhury, associate professor of chemistry.

Third Place – Maya Washington, a senior in biological sciences from Town and Country, Missouri, for research titled “Effects of Autoimmune Disease on MSCs.” The research advisor is Dr. Julie Semon, associate professor of biological sciences.

Sciences – section 2

First place– Rachel Adcock, a sophomore in geology and geophysics from Kearney, Missouri; Stephan Houser, a sophomore in geology and geophysics from Carl Junction, Missouri; Mercedes Lane, a sophomore in geology and geophysics from Berea, Kentucky; and Emma Puetz, a junior in geology and geophysics from Rolla, Missouri, for research titled “Mineral Compositional Changes During Weathering.” The research advisor is Dr. David Wronkiewicz, associate professor of geology and geophysics.

Second place – Amberly Scott, a junior in biological sciences from Foristell, Missouri; John Sneed, a senior in biological sciences from Rolla, Missouri; and Kathryn Zychinski, a sophomore majoring in biology and physics from St. Louis, for research titled “Insecticide Metabolic Responses of Two Lepidoptera.” The research advisor is Dr. Niranjana Krishnan, assistant research professor of biological sciences.

Third place – Alexis Baiter, a senior in environmental science from Pevely, Missouri; and Sage Wood, a first-year student in biological sciences from Jefferson City, Missouri, for research titled “Enzyme Inhibitors and Insecticide Effect on Caterpillars.” The research advisor is Dr. Niranjana Krishnan, assistant research professor of biological sciences.