

Newsletter

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Special Edition: Principal Investigator Recognition

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Principal Investigator Recognition

THE OFFICE OF SPONSORED PROGRAMS

Special Edition

2020 *Principal Investigators*

Mr. Brian Adler

Mr. Jason Dupree

Dr. Regina McGrane

Ms. Cindi Albrightson

Dr. Trevor Ellis

Mr. Doug Misak

Dr. Lisa Appeddu

Mr. Joshua Engle

Dr. Dana Oliver

Dr. Amy Barnett

Dr. Robert Fant

Ms. Jamie Novey

Ms. Madeline Baugher

Ms. Lisa Friesen

Dr. Horrick Sharma

Dr. Andrew Bigley

Dr. Aimee Henderson

Dr. Vijay Somalinga

Dr. Ruth Boyd

Dr. Jon Henrikson

Mr. Todd Thurman

Ms. Brenda Burgess

Dr. Tim Hubin

Dr. Richard Tirk

Dr. Brian Campbell

Dr. Joel Kendall

Dr. Muatasem Ubeidat

Dr. Rickey Cothran

Dr. Doug Linder

Dr. Wendy Yoder

Dr. Randy Curry

Dr. Shelley Martinson

Dr. Sarah Yount

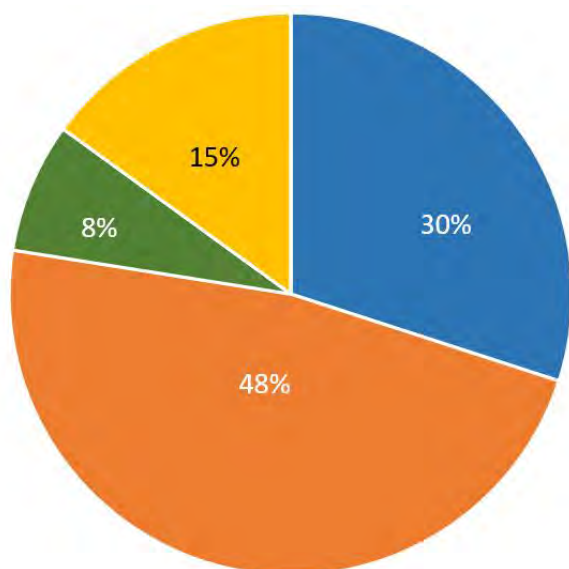
Introduction

Sponsored Programs is excited to honor the accomplishments of the SWOU Principal Investigators. For fiscal year 2020, 33 people applied for over \$6,285,682. This funding provides opportunities for our faculty, students, staff, and administration that would not otherwise be possible. We would like to let all the PI's know how appreciated their extra endeavors are for providing quality experiences for all involved. Your efforts greatly contribute to making SWOSU a top-ranked university.

In lieu of an in-person recognition, we are sharing this celebration of our Principal Investigators campus-wide through this special edition OSP newsletter.

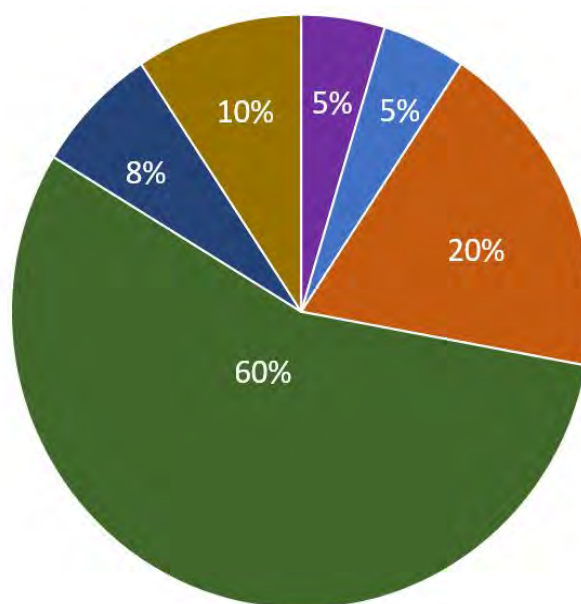
Thank you for your time and energy and keep on writing!

Extramural Awards by Division



- Administration - 12 Awards
- College of Arts and Sciences - 19 Awards
- College of Pharmacy - 3 Awards
- College of Professional and Graduate Studies - 6 Awards

Extramural Awards by Function



- Academic Support - \$9,000
- Instruction - \$5,525
- Public Service - \$255,750
- Research - \$543,982
- Scholarships - \$42,688
- Student Support - \$3,873,076

Mr. Brian Adler, Vice President for Public Relations and Marketing

Mr. Adler is the Principal Investigator (PI) for the project, "SWOSUPalooza," funded by the City of Weatherford Hotel Motel Advisory Committee. SWOSUPalooza will feature three performers, Flatland Calvary, Mike Ryan, and Triston Marez.



He was also the Principal Investigator for the "SWOSU Panorama Event," which featured Dr. Ken Jeong. The "SWOSU Panorama Event" was funded by the City of Weatherford Hotel Motel Advisory Committee.

Ms. Cindi Albrightson, Department of Engineering Technology

Ms. Albrightson is the Principal Investigator for the "NASA HERC Build" project, which received funding from the Wal-Mart Foundation. The NASA HERC Build project is a competition that challenges high school and college students to create a vehicle designed to traverse simulated surfaces of other worlds.

Dr. Lisa Appeddu, Department of Pharmaceutical Sciences

Principal Investigator, Dr. Lisa Appeddu, and Co-Principal Investigators Dr. Denise Landrum-Geyer, Dr. Sherri Brogdon, Dr. Regina McGrane, and Ms. Kathleen O'Neal, applied for funding from the National Science Foundation. Their project is titled "Developing and testing innovations: Integrating technology via a STEAM framework to raise awareness and increase self-efficacy in pursuit of STEM and ICT careers for rural girls in Oklahoma." This project addresses the challenge of the growing skills gap and the gender gap in Science, Technology, Engineering, and Mathematics (STEM) and Information and Communications Technology (ICT) fields.

Dr. Amy Barnett, Department of Education

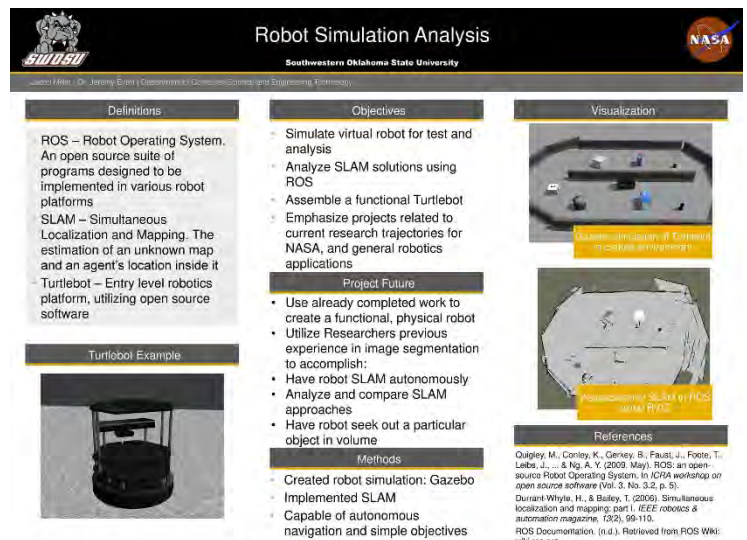
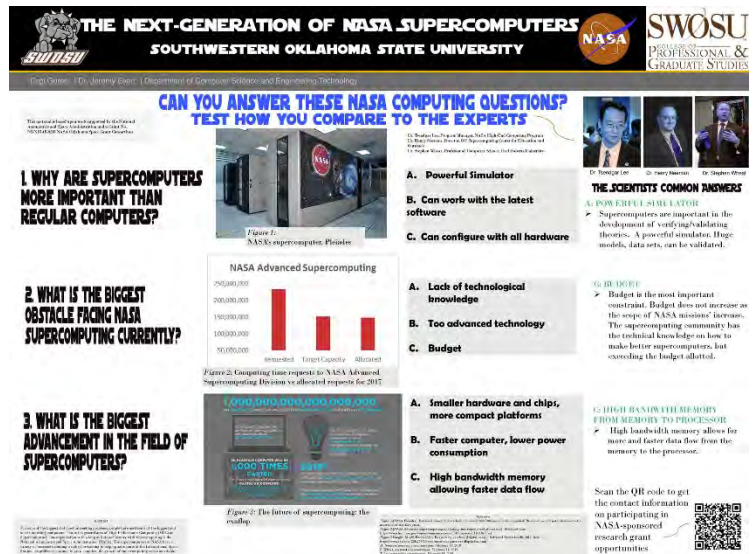
Dr. Barnett is the Principal Investigator for the "Indian Child Welfare Act (ICWA) Partnership Grant." This grant seeks to encourage effective, replicable ways to meet or exceed the requirements of ICWA. This partnership allows SWOSU to work with OKDHS to create solutions for longstanding ICWA practice challenges, including: improvements in relationships, communication, training, and cultural humility, measurement of current child

welfare and court practice related to ICWA, and system improvements through state, regional, and local collaboration and demonstration projects. The Indian Child Welfare Act funds this grant through the Oklahoma Department of Human Services

Ms. Madeline Baugher, Department of Computer Science

Ms. Baugher is the Principal Investigator for the following grants:

- "FTC Registration Support." This funding, provided by Devon Energy, supported FTC Robotics teams through registration fees and robot kits.
- "NASA OK-EPSCoR Research Implementation Grant – Ekin" was funded by the Oklahoma State Regents for Higher Education. This is associated with the project, "Robust and high-Data-Rate Hybrid RF/Optical communications/or Lunar Missions."
- "NASA OK-EPSCoR Research Implementation Grant – Ekin" was funded by the National Aeronautics and Space Administration. This is associated with the project, "Robust and High-Data-Rate Hybrid RF/Optical communications/or Lunar Missions."
- "NASA OK-EPSCoR R3-Capraz-Conversion of CO₂ into Fuel," funded by the National Aeronautics and Space Administration.



- "NASA OK-EPSCoR Research Implementation Grant – Sigmarsson," which was funded by the Oklahoma State Regents for Higher Education and is associated with the project, "Spaceborne Antennas & Circuits for Condensed Radars and STEM (SPACERS).
- "Space Grant College and Fellowship Program – 2020-2024," funded by the National Aeronautics and Space Administration. Through this project, students will build and launch high-powered rockets, attend the Rock-On workshop to build a payload that will be launched into space, compete in the Speedfest Charlie Car competition, and other hands-on learning projects.



Dr. Andrew Bigley, Department of Chemistry & Physics

Dr. Bigley is the Principal Investigator for the grant, "Investigation of the unique phosphodiesterase from *Sphingobium* sp. TCM1 capable of the degradation," funded by OK-INBRE.

Dr. Ruth Boyd, Vice President for Student Affairs

Dr. Boyd, along with Co-Principal Investigator Heather Hummel, received funding from the Women's Foundation of Oklahoma for the "Single Parents' Network." The Single Parents' Network helps meet the needs of SWOSU's Single Parent Students. In addition to the WFO grant award, SWOSU provides matching funds to host recruitment activities, monthly support



meetings, family events, and the National Single Parents Day Luncheon. SWOSU also provides dedicated office space and supplies for the program coordinator. Due to state budget constraints, a dedicated program coordinator – critical to program success – would not be possible without this grant's continued support.

She is also the Principal Investigator for the "GEAR UP" grant funded by the Oklahoma State Regents for Higher Education. Gaining Early Awareness and Readiness for Undergraduate Programs (GEAR UP) prepares 7th – 12th-grade students to transition to college by providing academic support and assistance to advance their progress through their degree program and degree completion.

Ms. Brenda Burgess, Vice President for Finance and Administration

Ms. Burgess is the Principal Investigator for the following grants funded by the U.S. Department of Education:

- "SIP CARES Funds," which provided financial aid to strengthen universities during the Coronavirus pandemic.
- "CARES Act – Institutional Portion," allowing SWOSU to cover costs associated with significant changes to instruction delivery due to the Coronavirus.
- "CARES Act – Student Portion," which provided funding to institutions to provide emergency financial aid grants to students whose lives have been disrupted by the Coronavirus.

Dr. Brian Campbell, Department of Chemistry & Physics

Dr. Campbell, along with Co-Principal Investigator Dr. Keturah Adams, received funding for the "SWOSU Summer Science and Mathematics Academy," grant, funded by the Oklahoma State Regents for Higher Education, which gives 32 high school juniors and seniors a two-week experience in STEM. Participants are encouraged to pursue higher education and careers in STEM disciplines.

Dr. Rickey Cothran, Department of Biological Sciences

Dr. Cothran is the Principal Investigator for the grant, "How demographics affect long-term population health in *Hyalella* amphipods," funded by the Tribeta Honor Society. This project tested the hypothesis that high population density increases sexual conflict over guarding duration in amphipod populations resulting in lower female fitness.

Dr. Randy Curry, Department of Pharmaceutical Sciences

Dr. Curry is the Principal Investigator for the "Remote Area Medical" grant, funded by the City of Weatherford Hotel/Motel Tax Commission. Remote Area Medical provides mobile clinics that deliver free, high-quality, dental, vision, and medical care to underserved and uninsured individuals.

Along with Co-Principal Investigator Dr. Kalie Kerth, Dr. Curry applied for funding from the U.S. Department of Agriculture for the "SWOSU College of Pharmacy Rural Health Telemedicine." This project could provide equity and increase access to quality healthcare in rural communities, help SWOSU expand their resources to serve more students and communities, and other services.

Mr. Jason Dupree, Al Harris Library

Mr. Dupree applied for funding from the Institute of Museum and Library Services for the "Establishing Access to the General Thomas P. Stafford Archives at SWOSU." This grant would allow for installing security measures, hiring an archivist, purchasing preservation supplies, and purchasing equipment.

Dr. Trevor Ellis, Department of Chemistry & Physics

Dr. Ellis received funding from OK-INBRE for the "INBRE Travel Grant: ACS Philadelphia Spring 2020," which allowed Dr. Ellis and his students to travel to the American Chemical Society Meeting in Philadelphia, Pennsylvania, to present their research.

He is also the Principal Investigator for the OK-INBRE Travel Grant: Travel to SE/SW Regional American Chemical Society Meeting in New Orleans, Louisiana." This grant was funded by OK-INBRE for the purpose of attending the Regional ACS Meeting.

Mr. Joshua Engle, Dean of Students

Mr. Engle, and Co-Principal Investigator Dr. Ruth Boyd, applied for funding from the U.S. Department of Education for the "SWOSU Student Support Services Center for Diversity and Inclusion," project which would have provided resources for underserved student populations.

Dr. Robert Fant, Department of Music

Dr. Fant, and Co-Principal Investigator Ms. Rhyesa Hamilton, received funding from the National Endowment for the Arts, through the Mid America Arts Alliance, for the grant, "Mid America Arts Alliance – St. Louis Brass Concert and Master Class." This grant allowed SWOSU to host the Saint Louis Brass, who provided classes and a concert for SWOSU Students.

Ms. Lisa Friesen, Center for Excellence in Teaching and Learning *Dr. Joel Kendall, Associate Provost*

Ms. Friesen, and Co-Principal Investigator, Dr. Joel Kendall, applied for funding from the U.S. Department of Agriculture to fund the "SWOSU Virtual Learning Project." This project aimed at overcoming barriers to education in 10 school districts and an area served by a state university in western Oklahoma.

Dr. Lori Gwyn, Director of OSP and Student Success Services

Mr. C. J. Smith, Assistant Director of OSP

Ms. Jennifer Cook-Johns, OSP Grants Specialist

Dr. Gwyn, along with Co-Principal Investigators Ms. Jennifer Cook-Johns and Mr. C.J. Smith, received funding from the City of Weatherford Hotel/Motel Tax Committee for "Oklahoma Research Day." SWOSU hosted Oklahoma Research Day, which brought over 1,000 undergraduate students from across the state to the SWOSU campus to showcase their research.

Dr. Gwyn also received funding from the U.S. Department of Education for the grant, "SWOSU Student Success Center – Year 2." The SWOSU Student Success Center strives to increase student retention and degree completion. By supporting evolving individual student needs, the Student Success Center helps students achieve their academic, career, and personal goals.

Dr. Aimee Henderson, Department of Pharmacy

Dr. Henderson is the Principal Investigator for the grant, "Improving the Health of Americans through the Prevention and Management of Diabetes, Heart Disease, and Stroke," through the Oklahoma Department of Health. This grant supports healthcare teams as they integrate pharmacists into team-based models of care, provide continuing education programs and resources to pharmacists in diabetes and cardiovascular management, prevent and promote MTM with healthcare providers, and provide other services to promote success.

Dr. Jon Henrikson, Department of Chemistry & Physics

Dr. Henrikson received funding from OK-INBRE for the "OK-INBRE SMaRT: Determination of pKa's of glycine metal complexes designed for synthesis of natural and unnatural amino acids" grant. This project aims to quantify the changes in pKa (acidity) of the glycine ligand in these metal complexes.

Dr. Tim Hubin, Department of Chemistry & Physics



Dr. Hubin is the Principal Investigator for the following projects:

- "INBRE Travel Grant: ACS Philadelphia Spring 2020," funded by the Oklahoma State Regents for Higher Education. This grant allowed Dr.

Hubin and his students to travel to Philadelphia, Pennsylvania, and present their research at the American Chemical Society Meeting.

- "Novel dual CXCR/CXCR7 chemokine receptor antagonists targeting secondary disease progression in cancer" was funded by OK-INBRE. Clinically, overexpression (when too many copies of the receptors are present on a cell's surface) of CXCR4/CXCR7-CXCL12 correlates with aggressive BC disease and poor outcome. Evidence suggests cooperativity between CXCR4 and CXCR7 chemokine receptors in governing the precise biological response to CXCL12 stimulation. This will limit the effectiveness of targeting either receptor independently. We have developed first-in-class synthetic chemical compounds that act as dual inhibitors of both CXCR4 and CXCR7. Pilot studies confirm efficacy against aggressive BC in-vivo. Dual inhibition of CXCR4 and CXCR7 could elicit profound, anti-cancer effects providing a powerful new therapy line for BC patients with a high risk of progressive disease.

- "Louis Stokes Alliance for Minority Participation in Science, Mathematics, Engineering, and Technology" was funded by the National Science Foundation through


OK-LSAMP at SWOSU

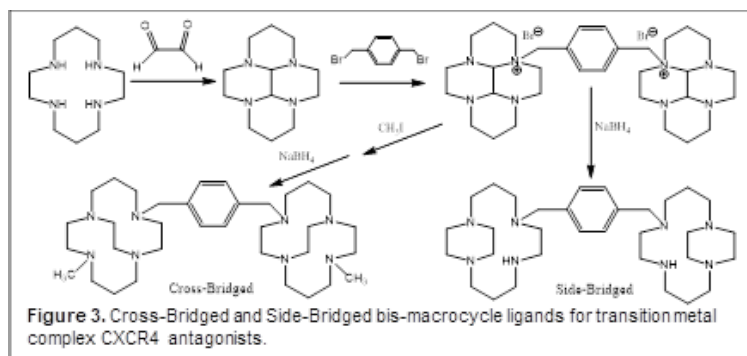
Oklahoma's Louis Stokes Alliance for Minority Participation

Goals:

1. Support underrepresented minority majors in the STEM Disciplines (Science, Technology, Engineering, and Math) to graduate with their Bachelor's Degrees.
2. Expose LSAMP Scholars to research experiences while undergraduates.
3. Facilitate networking with other LSAMP scholars and other scholars in their discipline through summer internships and travel to scientific meetings.
4. Send OK-LSAMP Scholars to Graduate School in STEM Disciplines

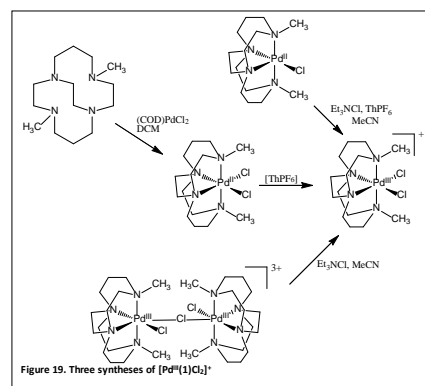
Oklahoma State University. It addresses the underrepresentation of minority students pursuing advanced degrees in science, technology, engineering, and mathematics. Minority students are encouraged to seek advanced degrees leading to research or teaching positions.

- Novel dual CXCR4/CXCR7 receptor antagonists: Targeting secondary disease progression and resistance to immunotherapy in breast cancer," funded by the



Oklahoma Center for the Advancement of Science and Technology. This funding enabled research on the inhibition of CXCR4 and CXCR7 to elicit the profound and pleiotropic anti-cancer effects to provide a powerful new therapy line for breast cancer patients with a high risk of progressive disease.

- "High Valent Pd and Ni Complexes of topologically constrained azamacrocycles for catalytic organometallic C-C bond formation" was funded by the American Chemical Society, Petroleum Research Fund. Successful identification and full characterization of efficient C-C bond formation catalysts having topologically constrained azamacrocycles would expand the realm of these ligands' influence to organometallic chemistry, provide new and different high valent Ni and Pd complexes for chemists to study, and provide a cutting edge new direction chemistry research project for SWOSU undergraduates to hone their craft.
- "The sophistication of pyridnophanes," is a project for which Dr. Hubin applied for funding. This project focused on circumventing challenges and incorporating new molecules into a range of applications.



Dr. Doug Linder, Department of Chemistry & Physics

Dr. Linder is the Principal Investigator for the "Cross-Bridged Transition Metal Complexes of Cyclens: Structural Influences" grant, funded by the National Institutes of Health through OK-INBRE. This project investigates a series of first-row transition metal-containing tetraazamacrocyclic ligands, as potential chemokine receptor antagonists, detailing their structural and thermodynamic properties.

Dr. Shelley Martinson, Department of Music

Dr. Martinson is the Principal Investigator for the "SWOSU Flute Day" grant funded by the Oklahoma Arts Council. The 2019 Southwestern Oklahoma State University (SWOSU) Flute Day took place on Sunday, October 27, 2019. More than 100 flutists attended this event, which included 21 different classes taught by 11 different clinicians. Featured guest artists were acclaimed flutist George Pope and flutist/composer Nicole Chamberlain. Activities included warm-up and masterclasses, performances, audition workshops, mini-lessons, flute Olympics, flute choir, classes on specific performance/pedagogy oriented topics (sound, technique, extended techniques, and piccolo), and the world premiere of Chamberlain's newly commissioned work by the SWOSU, University of Central Oklahoma, Northeastern Oklahoma State University, and Oklahoma State University flute choirs.



Dr. Regina McGrane, Department of Biological Sciences

Dr. McGrane is the Principal Investigator for the following grants:

- "Investigating the effects of bactericidal biosurfactant of eukaryotic organisms," funded by TriBeta Biological Honors Society, explored the hypothesis that when small eukaryotic organisms are exposed to syringafactin, the organisms will be killed.
- "Microbiology Outreach," funded by the American Society for Microbiology, allowed Dr. McGrane and ASM Ambassador Jennifer Abshire to plan projects that expose, educate, and inspire Oklahoma middle school students participating in the 2020 SAGE STEAM Camp microbial ecology and agar art workshops.
- "Developing an inquiry-based applied microbiology course employing flipped classroom design," funding requested from OK-INBRE to

support flipped classroom curriculum. This curriculum of a flipped classroom for the course, Applied Microbiology, has the potential to be impactful because enrolled students have taken introductory biology, microbiology, and chemistry courses.

- "Phytopathogen Biosurfactants: Investigating Antimicrobial mechanisms, specificity, and applications" is the name of the project for which Dr. McGrane applied for funding. The objective of this project is to support research investigating the antimicrobial activities of phytopathogen biosurfactants.

Dr. McGrane and Dr. Vijay Somalinga are the Principal Investigators for the "STEMwrite Institute for Writing to learn in STEM Disciplines" grant. They, along with Co-Principal Investigators, Drs. Jimena Aracena and Christopher Horton applied for funding from the STEMwrite Institute to enhance student engagement in courses through writing assignments and activities.

Mr. Doug Misak, Business Enterprise Center

Mr. Misak is the Principal Investigator for the grant, "Leadership Weatherford," funded by the Midwestern Oklahoma Development Authority. Leadership Weatherford is a nine-month program designed to energize our community and cultivate next-generation leadership by educating class members about our community, developing and improving leadership skills, building relationships, and focusing on our future.

Mr. Misak was also the recipient of the Business Partnership grant from the Oklahoma State Regents for Higher Education. The purpose of this grant is to recognize university and community business collaborations.

Dr. Dana Oliver and Dr. Veronica Aguinaga, Department of Education

Dr. Oliver and Dr. Aguinaga, applied for funding from Oklahoma Teacher Connection for their project, "Stronger Professionals Every Day: A SWOSU PLC for Alternative and Emergency Certified Teachers." This project aims to support the development and retention of alternatively certified and emergency certified teachers by providing significant, research-based professional development in these four areas: Student diversity, Digital Tools, Classroom Management, and Strategies for Teaching English Learners.

Ms. Jamie Novey, Upward Bound

Ms. Novey is the Principal Investigator for the "Upward Bound" grant. Upward Bound is a federally funded TRiO program for high school students interested in postsecondary education after high school graduation. During the school year, students attend monthly academic meetings and participate in an online tutoring program. Students live on the SWOSU campus during the summer and participate in a full schedule of educational, social (including sports), and cultural activities for six weeks. Students receive personal and academic counseling during the school year and summer, assistance with financial aid and college admission applications, preparation for the ACT, an ACT fee waiver, visit college campuses, and are exposed to professional careers and mentors.



Dr. Horrick Sharma, Department of Pharmaceutical Sciences

Dr. Sharma is the Principal Investigator for the grant, "Development of Small Molecules Targeting Cancer Metabolism." Through this grant, Dr. Sharma designed experiments and participated in the synthesis, purification, and *in vitro* screening of compounds in biochemical and cell-based lactate assays.

Dr. Vijay Somalinga, Department of Biological Sciences

Dr. Somalinga and Dr. Regina McGrane are the Principal Investigators for the "STEMwrite Institute for Writing to learn in STEM Disciplines" grant. They, along with Co-Principal Investigators, Drs. Jimena Aracena and Christopher Horton applied for funding from the STEMwrite Institute to enhance student engagement in courses through writing assignments and activities.

Dr. Somalinga is also the Principal Investigator for his project, "Biochemical and structural characterization of DPS1 Protein from *Rhodococcus jostii* RHA1," funded by the Tribeta Biological Honor Society. The goal of this project is to characterize the putative DPS protein for its potential use in biotechnological applications.

For OK-INBRE, Dr. Somalinga is the Principal Investigator for the following projects:

- "Ti homology modeling and purification of beta-carbonic anhydrase from *Streptococcus sanguinis*, an opportunistic pathogen involved in a subacute infective endocarditis."
- "Ti purification and Biochemical Characterization of SSA_2154, a putative beta carbonic anhydrase from *Streptococcus sanuginis*."
- "Biochemical and physiological role of carbonic anhydrase and substrate-binding protein in *Streptococcus sanuginis*."

Mr. Todd Thurman, SWOSU Athletics

Mr. Thurman is the Principal Investigator for the "Division 2 Coaching Enhancement Grant," through the NCAA. This grant would allow SWOSU Athletics to hire an Assistant Football Coach.

Dr. Richard Tirk, Department of Music

Dr. Tirk received funding from the Oklahoma Arts Council for the "51st Annual Jazz Festival," which will take place in February of 2021. It will feature a live stream event with Stockton Helbing Trio and guests, an all-day virtual big band festival, an online clinic with Stockton Helbing, and Stockton Helbing concerts.

Dr. Muatasem Ubeidat, Department of Biological Sciences

Dr. Ubeidat, along with Co-Principal Investigators Dr. Tim Hubin and Dr. Vijay Somalinga, received funding from the National Institutes of Health, through OK-INBRE for the project, "OK-INBRE – Students Biomedical Research Projects at SWOSU." The focus of this project is researching Genetic Investigation of the Impact of Single Nucleotide Polymorphism (SNP) on Caffeine Metabolism, studying the proteins SSA_2154, SSA_0908 to design better inhibitors that can be used to treat *S. sanguinis* infections and various biomedical research projects within the SWOSU Chemistry Department.

Dr. Wendy Yoder, Retention Management

Dr. Joel Kendall, Associate Provost

Dr. Yoder, along with Co-Principal Investigator Dr. Joel Kendall, applied for funding from the U.S. Department of Education for the project, SWOSU Student Support Services Advising Center.

Dr. Sarah Yount, Department of Pharmacy

Dr. Yount, along with Co-Principal Investigator Dr. Randy Curry, applied for funding from the Federal Communications Commission for the “COVID-19 Telehealth Program.” The goal of this program is to support rural healthcare providers (HCP) and improve patient outcomes through the provision of chronic care management (CCM) and remote patient monitoring (RPM).

Thank you to all of the Principal Investigators for all of your hard work, made more complicated during this global pandemic. We look forward to seeing even more proposal writers in the future!

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