

Engaging Research

TEXAS  STATE
RESEARCH AND SPONSORED
PROGRAMS

Office of the Associate Vice President for Research

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AVPR Message



Dr. Walter E. Horton

You may have heard the saying, “the whole is greater than the sum of its parts.” As a scientist, I have always had a problem with that statement because it does not seem to be thermodynamically possible!

However, I am ok with a slight modification: “The whole is greater than the sum of its parts plus their interactions.”

In this newsletter you will read about compelling research and scholarly activities that are based on interactions, not only between the faculty involved but between the faculty and the community. The “products” are incredible: authentic stories from Black and Latino playwrights, better treatments for children with breathing disorders, and improved reading and writing skills for students in special education services. Building on the collaboration theme, how about a great partnership between Science and Engineering and Business to land a major NSF commercialization grant? And, you will also discover that the City of Austin wants to work with you!

One more saying is “the bigger the issue, the more important the partnership,” and here at Texas State University, we place a high value on collaborative research that addresses real-world problems.

My sincere thanks to everyone in the research family who brings innovation to life every day at Texas State.

[Contact ORSP Staff](#)

[Upcoming Workshops and Events](#)

SHARE YOUR RESEARCH STORIES!

Would you like to appear in our newsletter or suggest one of your colleagues who's doing cool research? Fill out our [brief story form](#) for consideration.

Faculty Research Spotlight

Eugene Lee, Theatre and Dance: “Many of the plays that have been developed here have gone on to full professional productions.”

Your project: Black and Latino playwrights have traditionally had minimal access to resources to hone their storytelling skills, to develop and tell their stories and to authentically document their cultural truths for sharing through theatre. The Texas State Black and Latino Playwrights Conference fills that void for a couple of writers each year.

This project impacts both the professional guest artists and the students and faculty from the Department of Theatre and Dance who get to sit in the trenches of creative collaboration and watch the process by which plays come to be. Many of the plays that have been developed here have gone on to full professional productions.

Funding: The biggest challenge has been fundraising and the biggest successes have been receiving National Endowment for the Arts and National Endowment for the

Humanities and Humanities Texas grants.

I’ve been blessed with great recent help from C3* at the university. Prior to that I sought insight from Dr. Fleming and Dr. Mayo, and I also volunteered to sit on the NEA Peer Panel for three years and got really significant insight into what makes a successful grant application.

About you: Outside my other interests and work include working as a professional actor, writer and director in film and stage and television. I’m presently in rehearsals in New York for a new play on Broadway, “American Son” with Kerry Washington and Stephen Pasquale, opening early November and running through the end of January.



*C3 is the **Center for Communication, Collaboration and Creativity** in the College of Fine Arts and Communication. **C3 Research Coordinators** support their faculty’s research and assist through all phases of funding.

New Faculty Focus: Arzu Ari, Respiratory Care: “Treating children is a special challenge.”

Background: I am a physical therapist and a respiratory therapist with a Ph.D. in higher education administration and two masters in public health and respiratory care. Currently, I teach in the Department of Respiratory Care that is filled with outstanding administrators, excellent faculty and talented students. I love the mission and collaborative working environment at Texas State University that values innovation, growth, recognition and transparency, one where I can continue to grow and make an impact.

Your research: My primary area of research is aerosol medicine. Aerosol drug delivery is used to deliver medications to patients’ lungs with inhalers or nebulizers to treat pulmonary diseases. Treating children is a special challenge. Since young children cannot reliably use a mouthpiece during aerosol drug delivery to treat acute asthma, a face mask is often used. However, the child may fuss, become agitated, and fight the application of the mask, making it difficult to get a good seal and a sufficient



amount of the drug. This problem led us to decide on a different delivery method called HFNC when treating small children. Our previous research was the first study showing delivery efficiency of HFNC in small children and received a lot of attention from clinicians. Since then, HFNC has been used as a novel interface for delivery of bronchodilators to children in emergency departments.

Collaboration: My research laboratory is one of only a few in the world that can bring together the pharmaceutical, aerosol and respiratory care talent and infrastructure needed to support innovative research, build consensus and make strides in the field. Our research is closely tied to four major developments that have had a global impact on the practice of aerosol drug delivery to patients with pulmonary diseases. I welcome collaborators in any of these areas: (1) Helping clinicians understand current practices of aerosol therapy, (2)

identifying best practices of aerosol drug delivery not only in spontaneously breathing patients but also in critical care environment, (3) evaluating performance of aerosol devices to optimize inhaled drug delivery in patients with respiratory disorders and (4) generating new concepts and methods that optimize aerosol delivery to adults, pediatrics, infants and newborns.

Faculty Research Spotlight: Collaboration

Business and Science Collaboration Is Key to Successful NSF I-Corps Grant

by **Jana Minifie**, Management and **Jennifer Irvin**, Chemistry and Biochemistry

Scientists and engineers often come up with great new ideas that could have a huge impact on society. Unfortunately, most of these ideas never go anywhere because the majority of scientists and engineers have no idea how to commercialize their technologies. Texas State University recognized this when it created the Materials Science, Engineering and Commercialization (MSEC) program, to train doctoral students not just to do outstanding research in materials science and engineering but also to commercialize their work. The MSEC program brings together faculty from the College of Science and Engineering and the McCoy College of Business to train the next generation of materials scientists and engineers.

The National Science Foundation (NSF) also recognized the need to train scientists in

the art of commercialization. It created the NSF Innovation Corps (I-Corps) Program* to provide entrepreneurial training and funding for scientific research teams. NSF utilizes the Lean Canvas methodology recommended by the National Innovation Network to help I-Corps teams develop a streamlined alternative to the traditional business plan.

Dr. Jana Minifie's expertise in entrepreneurship/Lean Canvas works synergistically with Dr. Jennifer Irvin's expertise in materials science and engineering to create the ideal combination of skills necessary for I-Corps success. Minifie and Irvin teamed together to create an NSF I-Corps Site at Texas State. With \$254K in NSF funding beginning in fall 2018, the Texas State I-Corps Site will train 20-25 teams each year over a three-year period, helping them to commercialize their

scientific and engineering research. Teams will be recruited from seven existing entrepreneurial programs across campus, including MSEC's Commercialization Boot Camp and McCoy's Three Day Startup (3DS). The I-Corps Team awards will provide each team a series of commercialization workshops, experienced mentors, and \$1-3K in funding to be used for business development expenses.

The I-Corps Site will significantly grow the commercialization culture at Texas State, advancing scientific knowledge and activities that contribute to societally relevant outcomes for both domestic and international markets. The site will increase diversity in entrepreneurship by specifically targeting team members and mentors who are women and minorities. Texas State will play an important role in strengthening the entrepreneurial

ecosystem in the Central Texas area by providing more innovations for the region's workforce. The results will be creation of new jobs, enhanced economic growth, increased STEM investment and commercialization of new technologies benefiting consumers. Ultimately, the Texas State I-Corps Site will result in improved well-being of individuals in society and development of a diverse, globally competitive STEM workforce.

To Minifie and Irvin, the key to putting together a successful team is also the key to getting a project funded: be sure to include all the disciplines and skills necessary to complete the goals. Their unusual combination of business and science is the key to their success.

* It is notable that only 72 universities have I-Corps Sites. Congratulations to Dr. Irvin and Dr. Minifie for putting Texas State in this exclusive group!



Dr. Jennifer Irvin (L) and Dr. Jana Minifie (R)

Faculty Research Spotlight: Collaboration

IES Grant to Improve Fourth Grade Writing Outcomes for Special Ed Kids

by **Stephen Ciullo** and **Alyson Collins**, Special Education

Background: Dr. Stephen Ciullo, Associate Professor of Special Education, and Dr. Alyson Collins, Assistant Professor of Special Education, are faculty in the College of Education. They collaborate on research projects focused on enhancing writing and reading instruction of special educators as well as improving academic outcomes of students who receive special education services. Dr. Ciullo received his Ph.D. from the University of Texas at Austin, and Dr. Collins received hers from Vanderbilt University. Their interests in educational research were influenced by their prior experiences as public school teachers.

Dr. Ciullo on the IES project: This fall, we began a new project funded by the Institute of Education Sciences (IES). The project focuses on improving understanding of the writing instruction provided to students who receive special education services in fourth grade. National writing scores show that many students with disabilities have trouble with writing (National Center for Education Statistics, 2012). Along with our Co-PI, Dr. Steve Graham from Arizona State University, we recognized a first step to improving writing outcomes for students with disabilities is to understand what is currently happening in classrooms during writing instruction.

Surprisingly, only surveys have shed light on what strategies teachers use when teaching writing (Brindle et al., 2016; Gilbert & Graham 2010). Therefore, our team decided to explore this important issue. We will observe special education and general education teachers during writing lessons to learn more about current classroom practices. Participating teachers will also complete surveys about their instruction and professional training, and students with disabilities in teachers' classrooms will take assessments to measure writing progress across the school year. With this information, the research team will paint a picture of what teachers are doing in the classroom, how current writing instruction supports students with disabilities and how what is observed relates to student writing achievement. In other words, knowing what is happening in the classroom will be useful



Dr. Ciullo, Dr. Collins and their graduate research assistants meet to plan the launch of their IES funded special education research project.

for improving how to train teachers in the future. The project may also help with creating new instructional strategies or interventions that teachers can use when teaching writing.

Dr. Ciullo and Dr. Collins on building a team: Research projects in schools would be difficult without a motivated team of colleagues, talented graduate students who support the project and buy-in from our partner teachers and schools. What we have in common is a desire to support students with disabilities, specifically in a challenging area like writing. Having a shared vision will be helpful for a large project like ours, which spans over 35 different schools per year.

One tip for creating a strong team is to build a team with diverse backgrounds, areas of expertise and experiences. For example, we received our doctorates from different universities. Our different doctoral training experiences have resulted in specific areas of expertise that enhance and broaden the capabilities of our research team. Specifically, I gained extensive experience in classroom observational research methods, while Alyson developed a fantastic skill set in research design and analysis. This allows us to divide the

workload and reach beyond what we would be limited to if working independently.

Perhaps more important is the amazing group of graduate students on our team. Each brings a different set of skills. While working on our project, graduate students will gain research experience and training, and we will receive feedback and learn from them as well. It's a win for everyone!

About Dr. Ciullo: My weekends are always fun because I spend them with my wife, our new baby boy and our awesome family and friends! I also love exploring new restaurants in Austin, watching college football and working out. These activities offer me a healthy work-life balance.

About Dr. Collins: I am a mother of two little girls who keep me very busy! ☺ When we are not chasing after our girls, my husband and I enjoy watching college football and going for a run in our neighborhood (when it is not too hot!). I was also born and raised in Texas.

In the fall, Dr. Ciullo and I have weekly Monday recaps of the college football games from the weekend. Having common interests is critical for building a strong research team. ☺

GUEST COLUMN

by **Ted Lehr**, Computer Science and City of Austin

City of Austin Seeks Texas State Collaborators

The **City of Austin** wants to be a natural part of the Texas State research and education community. Over the years, Austin has collaborated on research projects with area universities, but most of these have been initiated and managed in ad hoc fashion.

One recent project, consisting of a multi-disciplinary research team, focuses on Virtual/Augmented Reality training for first responders. The team consists of faculty members Scott Smith, George Koutitas, Mark Trahan, Vangelis Metsis and Grayson Lawrence.

Based on the positive experience with this project and others, the City of Austin seeks a scalable, productive partnership with Texas State University to benefit researchers, educators and students at Texas State as well as the larger Central Texas community.

Through engaging with Texas State, Austin's long term goals are as follows:

- support and collaborate with faculty research projects, especially those that have relevance to Central Texas communities
- foster community civic understanding and participation among students through

pedagogic uses of City of Austin data

- encourage students to consider careers at the City of Austin or other public agencies

In the near term, the City of Austin wants to hear from Texas State administrators, researchers and educators to launch two or three additional research and/or pedagogic collaborations. We are especially interested in collaborations that use **Austin's Open Data Portal**. The portal holds data collected by City of Austin departments and made available freely to the public. It has regularly been ranked as one of the best city data portals in the United States

In our collaborations, the City of Austin will offer the following:

- find city staff from relevant departments to offer data, use cases, domain expertise and similar assistance
- provide endorsement and support or collaboration letters for inclusion in grant applications
- collaborate on seminars for research faculty as well as for the classroom

The City of Austin and Central Texas is

a rapidly growing, exciting community that needs university researchers to help study, understand and address its challenges.

To begin a discussion, please contact: Sara.Smith@austintexas.gov.



Dr. Georgios Koutitas practices patient triaging with a new Virtual Reality training system used by City of Austin EMTs--Texas State X-Reality and VR Lab.

Research Coordinator Corner

Mentoring Graduate Student Researchers: Tips for Faculty

Did you know The Graduate College supports graduate students preparing and submitting proposals for external funding? As a research coordinator, I assist these researchers by helping them identify and apply for external awards to fund their graduate studies and research. As you mentor graduate students, we ask that you encourage them to take advantage of the many resources we provide, including our in-house **Graduate Funding Opportunities database**, our **funding-specific workshops and trainings**, and our **one-on-one fellowship advising and proposal writing consultations**.

I also coordinate with ORSP to provide a variety of pre- and post-award services for graduate student researchers. Graduate student awards – whether scholarships, fellow-

ships, or grants – can vary considerably from funder to funder. Graduate students can apply independently for some awards. For others, they may need institutional approval, or the institution may need to apply on their behalf. It can be difficult for a graduate student to know who the applicant is supposed to be and what the correct university policies and procedures are, let alone how to get university approval for a proposal. Therefore, we encourage all graduate students to check with The Graduate College before developing and submitting a proposal for sponsored research or other externally-funded projects.

When students cannot apply independently, we can assist them with obtaining approvals, creating budgets, initiating and routing the proposal in Kuali and un-

derstanding compliance requirements. If students are awarded, their post-award needs can also vary significantly. On rare occasions, a funder will provide money directly to a student, with no post-award contractual agreements or reporting requirements. More often, however, graduate students need assistance of some kind. The Graduate College can make sure that a student's funds are disbursed correctly and that the student understands and meets his or her contractual obligations and reporting requirements.

In short, my goal is to help make your job as a faculty mentor easier. I aim to partner with you to train your students and support their applications for funding. You are welcome to attend consultations with your students or refer your students directly to me!

by **Andrea Hilkovitz**

Research or grant questions for RCs? Send them [here](#) or [contact your college RC](#).

ORSP News & Updates

Research Services: Meet ORSP Senior Staff!

Dr. Walter Horton, Associate Vice President

Dr. Mike Blanda, Assistant Vice President

Pre-Award Support

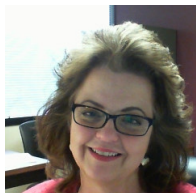
- Assist in proposal preparation and review
- Ensure compliance with guidelines and policies
- Provide guidance on budget preparation
- Facilitate internal routing and submission to sponsor

Director: Kay Beauchamp

sb45@txstate.edu

512-245-0306

[Pre-Award Support Services Staff](#)



Post-Award Support

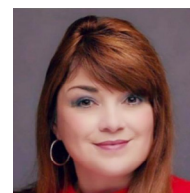
- Ensure successful project execution
- Explain key responsibilities and processes for projects
- Help with interpreting guidelines and compliance
- Ensure sponsor reporting requirements are met

Director: Marivel Alvarez

ma17@txstate.edu

512-245-2591

[Post-Award Support Services Staff](#)



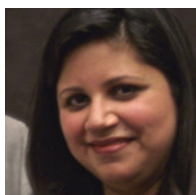
Strategic Research Initiatives (SRI)

- Match researchers with funding opportunities and agencies
- Facilitate strategic collaborations and partnerships
- Offer workshops and faculty development on grantsmanship
- Share faculty research stories through multiple venues

Director: Evy Gonzales

eg13@txstate.edu

512-245-2918



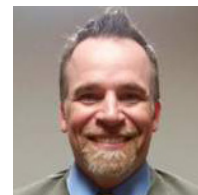
Research Integrity & Compliance (RIC)

- Guide users through the IRB and IACUC process
- Foster environment of compliance
- Provide support and training in regulatory requirements for conducting scientific research

Director: Sean Rubino

sdr98@txstate.edu

512-245-1701



Research Records & System Services (RRSS)

- Provide user support on research administration systems
- Manage ORSP website issues
- Provide technical support for ORSP workshops/conferences
- Create institutional data reports for selected grant proposals

Director: Dr. Yongxia Xia

ys11@txstate.edu

512-245-4402



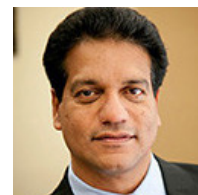
Technology Transfer & Contracts (TTC)

- Negotiate and review contracts such as nondisclosure, sponsored research and material transfer agreements
- Assist with invention disclosures and patent applications
- Manage technology transfer and licensing agreements

Director: Dr. Reddy Venumbaka

sv04@txstate.edu

512-245-2672



Methodology, Measurement & Statistical Analysis (MMSA)

- Offer consultations on proposal methodology and statistical analysis
- Provide mentoring on research design and statistical analysis
- Assist with data analysis for currently funded research projects
- Offer proposal evaluation based on federal and private funder requirements

Director: Dr. Larry Price

lprice@txstate.edu

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