# TEXAS STATE VITA

## I. Academic/Professional Background

A. Name and Title

Name: Dr. Blagoy Rangelov Title: Assistant Professor

B. Educational Background

| *Degree* | *Year* | *University* | *Major* | *Thesis/Dissertation* |
|---|---|---|---|---|
| PHD | 2012 | University of Toledo | Physics | High Mass X-ray Binaries in Nearby Star-forming Galaxies |

C. University Experience

| *Position* | *University* | *Comments* | *Dates* |
|---|---|---|---|
| Assistant Professor | Texas State University | | 2018 - Present |
| Lecturer | Texas State University | | 2016 - 2018 |
| Postdoctoral Scientist, Physics | The George Washington University. Washington, DC, United States | | 2013 - 2016 |
| Research Assistant | The University of Toledo | | 2008 - 2013 |
| Teaching Assistant | The University of Toledo | | 2006 - 2007 |

E. Other Professional Credentials (licensure, certification, etc.)

Online Teaching Certification, Texas State University. (September 2020 - Present).

Additional Comments: Successfully completing 8-hour *Teaching Online @ TxState* professional development course, which meets SACSCOC requirements for online instructors.

Scholarship and Teaching Excellence Program, Texas State University. (April 2019 - Present).

## II. TEACHING

A. Teaching Honors and Awards:

Award / Honor Recipient: COSE Awards for Excellence in Teaching.
2022 - June 2022

Award / Honor Nominee: Presidential Awards for Excellence in Teaching.
2022 - June 2022

2020 - June 2020

Award / Honor Recipient: Presidential Distinction Award for Excellence in Teaching.
2022 - August 2022

2020 - August 2020

Award / Honor Recipient: Alumni Association Teaching Award of Honor.
2020 - August 2020

Additional Comments: 2020 Alumni Association Teaching Award of Honor

B. Courses Taught:

Texas State University:

PHYS 1430 - MECHANICS

PHYS 3313 - ASTROPHYSICS

PHYS 3411 - ADV PHYS LAB

PHYS 4121 - UG RESEARCH

PHYS 4221 - UG RESEARCH

PHYS 4321 - UNDERGRAD RESEARCH

PHYS 5199B - THESIS

PHYS 5299B - THESIS

PHYS 5350F - ASTROPHYS

PHYS 5370 - PROB ADV PHYS

PHYS 5395 - FUND OF RESEAR

PHYS 5399A - THESIS

PHYS 5399B - THESIS

PHYS 5599B - THESIS

The George Washington University:

ASTR 1001 - Solar System

ASTR 1002 - Origins of the Cosmos

ASTR 2161 - Space Astrophysics

ASTR 8150 - Special Topics in Astrophysics

PHYS 1011 - General Physics I

PHYS 1021 - University Physics I

The University of Toledo:

ASTR 2010 - The Solar System

ASTR 2340 - New Frontiers in Astronomy

C. Directed Student Learning (i.e. theses, dissertations, exit committees, etc.):

Supervisor / Chair, Master's Thesis, "A Modular Satellite Ecosystem for Increasing Access to Space", Status: In Progress. (August 2023 - July 2024). Physics, Texas State University.
Student(s): Evan Jellison, Graduate, M.S.

Supervisor / Chair, Master's Thesis, "The Connection Between X-ray Binaries and Star Clusters", Status: In Progress. (August 2023 - July 2024). Physics, Texas State University.
Student(s): Mauro Guerrero, Graduate, M.S.

Supervisor / Chair, Master's Thesis, "The Nature of X-ray Source in the Andromeda Galaxy", Status: Completed. (August 2022 - July 2023). Physics, Texas State University.
Student(s): Erika Marentes, Graduate, M.S.

Supervisor / Chair, Master's Thesis, "Numerical Simulations of the Evolution of HMXBs ", Status: Completed. (August 2022 - July 2023). Physics, Texas State University.
Student(s): Lindsey Diehl, Graduate, M.S.

Member, Master's Thesis, "A Survey of Ro-vibrational CO Spectra from Protoplanetary Disks with ISHELL on the NASA IRTF Telescope", Status: Completed. (August 2022 - May 2023). Physics, Texas State University.
Student(s): Kirsten Abernathy, Graduate, M.S.

Supervisor / Chair, Master's Thesis, "The X-ray Source Population in the Star Cluster GLIMPSE-C01", Status: Completed. (May 2022 - December 2022). Physics, Texas State University.
Student(s): Erin Eastep, Graduate, M.S.

Supervisor / Chair, Master's Thesis, "Multi-wavelength Analysis of 13 Unknown Galactic Fermi Gamma-Ray Sources", Status: Completed. (September 2021 - August 2022). Physics, Texas State University.
Student(s): Brice Williams, Graduate, M.S.

Supervisor / Chair, Master's Thesis, "Optical Counterparts to X-ray Sources in Nearby Starburst Galaxies", Status: Completed. (September 2021 - August 2022). Physics, Texas State University.
Student(s): David Palmore, Graduate, M.S.

Member, Master's Thesis, "A multidimensional study of kinematics and excitation of molecular gas in planet-forming regions", Status: Completed. (September 2021 - August 2022). Physics, Texas State University.
Student(s): Jose Perez Chavez, Graduate, M.S.

Supervisor / Chair, Honor's Thesis, "Icarus I & II: Investigating Cosmic Showers Through Undergraduate Research Involvment", Status: Completed. (December 2021). Physics, Texas State University.
Student(s): Evan Jellison, Undergraduate, B.S.

Supervisor / Chair, Honor's Thesis, "X-ray Binary Formation in Low and High Metallicity Simulated Stellar Environments", Status: Completed. (December 2021). Physics, Texas State University.
Student(s): Kennedy Farrell, Undergraduate, B.S.

Member, Master's Thesis, "A Study of Protoplanetary Disk Evolution in Infrared CO Emission", Status: Completed. (August 2021). Physics, Texas State University.
Student(s): Michael Sanchez, Graduate, M.S.

Supervisor / Chair, Master's Thesis, "Numerical Simulations of High Velocity Stars Originating From Binary Systems", Status: Completed. (August 2021). Physics, Texas State University.
Student(s): Sudarshan Luitel, Graduate, M.S.

Supervisor / Chair, Honor's Thesis, "Reconstruccion de la densidad de masa superficial de anillos de Einstein - con lenstronomy", Status: Completed. (November 19, 2020). Physics, Universidad Autónoma de Ciudad Juárez.
Student(s): Daniela Ramirez Chavez, Undergraduate, B.S.

Supervisor / Chair, Master's Thesis, "Classification of Extragalactic X-Ray Sources Using Machine Learning Methods", Status: Completed. (September 2018 - August 2019). Physics, Texas State University.
Student(s): Mehrdad Rostami Osanloo, Graduate, M.S.

Supervisor / Chair, Honor's Thesis, "The Nature of the X-ray Binaries in the Whirlpool Galaxy", Status: Completed. (2018). Physics, Texas State University.
Student(s): Luis Bichon, Undergraduate, B.S.

D. Courses Prepared and Curriculum Development:

Advanced Physics Laboratory PHYS3411, First Time Course Preparation, Texas State University: January 2017 - May 2017.

Mechanics PHYS1430, First Time Course Preparation, Texas State University: August 2016 - December 2016.

Additional Comments: Prepared class material for PHYS1430 as first time course preparation.

Methods in Observational Astrophysics PHYS3418, New Course, Texas State University. Approved: August 2018 - December 2019.

Astrophysics PHYS3313, New Course, Texas State University. Taught: August 2017 - December 2017.

F. Other:

Guest Lecture, EE5331 Machine Learning for Engineering Applications. (November 6, 2019).

Additional Comments: Guest lecturing for EE5331 Machine Learning for Engineering Applications. Presenting applications of machine learning methods in astrophysics.

Guest Lecture, Astronomy PHYS1350. (October 24, 2019).

Additional Comments: Substituting for Astronomy PHYS1350 class.

Guest Lecture, Astronomy PHYS1340. (February 27, 2019).

Additional Comments: Substituting for Astronomy PHYS1340 class.

Guest Lecture. (2016).

Additional Comments: Substituting for Mechanics PHYS1430 and PHYS1325 classes.

Student Accomplishments:

Award:

Mentor, Recognition for Academic Excellence. Department of Physics Award Ceremony. Status: Completed. (April 27, 2022). Physics, Texas State University.
Student(s): David Palmore, Graduate, M.S.

Mentor, Award for Academic Achievement. Department of Physics Award Ceremony. Status: Completed. (April 27, 2022). Physics, Texas State University.
Student(s): Jacob McKee, Undergraduate, B.S.

Mentor, Recognition for Academic Excellence. Department of Physics Award Ceremony. Status: Completed. (April 27, 2022). Physics, Texas State University.
Student(s): Brice Williams, Graduate, M.S.

Mentor, Outstanding Learning Assistant. Department of Physics Award Ceremony. Status: Completed. (April 27, 2022). Physics, Texas State University.
Student(s): Kennedy Farrell, Undergraduate, B.S.

Mentor, Outstanding Graduating Physics Major. Department of Physics Award Ceremony. Status: Completed. (April 27, 2022). Physics, Texas State University.
Student(s): Kennedy Farrell, Undergraduate, B.S.

Mentor, Award for Academic Achievement. Department of Physics Award Ceremony. Status: Completed. (April 27, 2022). Physics, Texas State University.
Student(s): Ciana Pike, Undergraduate, B.S.

Mentor, Recognition for Academic Excellence. Department of Physics Award Ceremony. Status: Completed. (April 27, 2022). Physics, Texas State University.

Student(s): Kennedy Farrell, Undergraduate, B.S.

Mentor, Recognition for Academic Excellence. Department of Physics Award Ceremony. Status: Completed. (April 27, 2022). Physics, Texas State University.
Student(s): Evan Jellison, Undergraduate, B.S.

Mentor, Outstanding Graduate Laboratory Instructor. Department of Physics Award Ceremony. Status: Completed. (April 27, 2022). Physics, Texas State University.
Student(s): Lindsey Diehl, Graduate, M.S.

Mentor, Recognition for Academic Excellence. Department of Physics Award Ceremony. Status: Completed. (April 27, 2022). Physics, Texas State University.
Student(s): Erin Eastep, Graduate, M.S.

Mentor, Recognition for Academic Excellence. Department of Physics Award Ceremony. Status: Completed. (April 27, 2022). Physics, Texas State University.
Student(s): Sudarshan Luitel, Graduate, M.S.

Mentor, Texas State Graduate Merit Fellowship. Texas State University. Status: Completed. (April 27, 2022). Physics, Texas State University.
Student(s): Evan Jellison, Graduate, M.S.

Mentor, Texas State Graduate Merit Fellowship. Texas State University. Status: Completed. (April 27, 2022). Physics, Texas State University.
Student(s): Erika Marentes, Graduate, M.S.

Supervisor, 3rd place. 15th Undergraduate Research Conference, San Marcos, TX. Status: Completed. (May 2021). Texas State University.
Student(s): Kennedy Farrell, Undergraduate.

Conference:

Supervisor, Participation. 41st Annual AMSAT Space Symposium, Irving, TX. Status: Completed. (October 2023). Physics, Texas State University.
Student(s): Evan Jellison, Graduate, M.S.

Supervisor, Participation. Small Satellite Conference, Logan, Utah. Status: Completed. (August 2021). Physics, Texas State University.
Student(s): Evan Jellison, Undergraduate, B.S.

Supervisor, Participation. Chandra Data Science. Status: Completed. (August 2021). Physics, Texas State University.
Student(s): Brice Williams, Graduate, M.S.

Supervisor, Participation. Chandra Data Science. Status: Completed. (August 2021). Physics, Texas State University.
Student(s): David Palmore, Graduate, M.S.

Supervisor, Participation. Small Satellite Conference, Logan, Utah. Status: Completed. (August 2019). Physics, Texas State University.
Student(s): Evan Jellison, Undergraduate, B.S.

Exhibition:

Supervisor. "Texas State University's First Low-Earth Orbiting Satellite," SXSW Conference & Festival, Austin, TX. Status: Completed. (March 2023). Texas State University.
Student(s): Evan Jellison, Undergraduate, B.S.
Kelly Stephenson, Undergraduate, B.S.

Additional Comments: Represented Texas State University at the SXSW Conference & Festival.

Supervisor. "Texas State University's First Low-Earth Orbiting Satellite," SXSW Conference & Festival, Austin, TX. Status: Completed. (March 2022). Texas State University.
Student(s): Evan Jellison, Undergraduate, B.S.
Kelly Stephenson, Undergraduate, B.S.

Additional Comments: Represented Texas State University at the SXSW Conference & Festival.

Supervisor. 2020 SXSW Innovation Lab Elimination Round. Status: Completed. (November 2019). Texas State University.
Student(s): Evan Jellison, Undergraduate, B.S.
Kelly Stephenson, Undergraduate, B.S.

Fellowship:

Supervisor, Undergraduate Research Fellowship. "Measuring The Decay of Muons in Earth’s Atmosphere." Status: Completed. (May 2022). Physics, Texas State University.
Student(s): Evan Jellison, Undergraduate.

Supervisor, Undergraduate Research Fellowship. "Computerizing the Texas State Observatory Telescope." Status: Completed. (November 2018). Physics.
Student(s): Kayley Green-Tooney, Undergraduate.

Supervisor, Undergraduate Research Fellowship. "Radio Communication with Satellites." Status: In Progress. (November 2018). Physics.
Student(s): Michael Sanchez, Undergraduate.

Finalist:

Supervisor, 2018 LBJ Outstanding Senior Student Award. Status: Completed. (2018). Texas State University.
Student(s): Luis Bichon, Undergraduate.

Grant:

Supervisor, $1,000 Travel Grant. American Astronomical Society Meeting, Honolulu, HI. Status: Completed. (January 2020). Physics, Texas State University.
Student(s): Selena Najar, Undergraduate, B.S.

Supervisor, $1,000 Griffin Outreach Grant. San Marcos, TX. Status: Completed. (December 2019). Physics, Texas State University.
Student(s): Kayley Green-Tooney, Undergraduate, B.S.

Additional Comments: The Astronomy Club (with president Kayley Green-Tooney) was awarded $1,000 through the Griffin Outreach Grant.

Supervisor, $500 Travel Grant. Small Satellite Conference, Logan, UT. Status: Completed. (August 2019). Physics, Texas State University.
Student(s): Evan Jellison, Undergraduate, B.S.

Supervisor, $1,000 Travel Grant. American Astronomical Society Meeting, Seattle, WA. Status: Completed. (January 2019). Physics, Texas State University.
Student(s): Michael Sanchez, Undergraduate, B.S.

Supervisor, $1,000 Travel Grant. American Astronomical Society Meeting, Washington, DC. Status: Completed. (2018). Physics, Texas State University.
Student(s): Kimberly Moreland, Undergraduate, B.S.

Internship:

Supervisor. Jacobs/NASA. Status: Completed. (August 2020).
Student(s): Kayley Green-Tooney, Undergraduate, B.S.

Additional Comments: Internship for Kayley Green-Tooney at Jacobs/NASA. Worked with the Orbital Debris Research and Science Operations team to acquire optical data remotely from NASA's Meter Class Autonomous Telescope.

Mission:

Supervisor, High-Altitude Balloon Launch. San Marcos, TX. Status: Completed. (July 2021).
Student(s): Evan Jellison, Undergraduate, Physics.
Kelly Stephenson, Undergraduate, Engineering.

Additional Comments: Launched a high-altitude balloon. The payload included sensors collecting atmospheric data. The balloon reached an altitude of 80,000 ft.

Supervisor, High-Altitude Balloon Launch. San Marcos, TX. Status: Completed. (April 11, 2021).
Student(s): Evan Jellison, Undergraduate, Physics.
Kelly Stephenson, Undergraduate, Engineering.

Additional Comments: Launched a high-altitude balloon. The payload included sensors collecting atmospheric data. The balloon reached an altitude of 60,000 ft.

Supervisor, High-Altitude Balloon Launch. San Marcos, TX. Status: Completed. (August 29, 2020).
Student(s): Evan Jellison, Undergraduate, Physics.
Kelly Stephenson, Undergraduate, Engineering.

Additional Comments: Launched a high-altitude balloon. The payload included sensors collecting atmospheric data. The balloon reached an altitude of 88,000 ft.

<a href="https://www.youtube.com/watch?v=KTuuVajvo_Q&feature=emb_logo">https://www.youtube.com/watch?v=KTuuVajvo_Q&feature=emb_logo</a>

Nominee :

Supervisor, LBJ Outstanding Senior Student Award. Texas State University. Status: Completed. (2022). Texas State University.
Student(s): Evan Jellison, Undergraduate.

Supervisor, LBJ Outstanding Senior Student Award. Texas State University. Status: Completed. (2022). Texas State University.
Student(s): Kennedy Farrell, Undergraduate.

Supervisor, COSE Outstanding Undergraduate Student Award. Texas State University. Status: Completed. (2022). Texas State University.
Student(s): Kennedy Farrell, Undergraduate.

Supervisor, Outstanding Senior Woman Award. Texas State University. Status: Completed. (October 2021). Texas State University.
Student(s): Kennedy Farrell, Undergraduate.

Presentation:

Supervisor, Poster Presentation. "Deep Chandra Observations of the Star Cluster GLIMPSE-C01," American Astronomical Society Meeting, Seattle, WA. Status: Completed. (January 2023). Physics, Texas State University.
Student(s): Erin Eastep, Graduate, M.S.

Supervisor, Poster Presentation. "The Nature of X-ray Sources in the Andromeda Galaxy," SACNAS National Diversity in STEM (NDiSTEM) Conference, San Juan, Puerto Rico. Status: Completed. (October 2022). Physics, Texas State University.
Student(s): Marentes Erika, Graduate, M.S.

Supervisor, Poster Presentation. "Optical Counterparts to X-ray Sources in Nearby Starburst Galaxies," American Astronomical Society Meeting, Pasadena, CA. Status: Completed. (June 2022). Physics, Texas State University.
Student(s): Palmore David, Graduate, M.S.

Supervisor, Poster Presentation. "Chandra Observations of Galactic GeV Gamma-ray Sources," American Astronomical Society Meeting, Pasadena, CA. Status: Completed. (June 2022). Physics, Texas State University.
Student(s): Williams Brice, Graduate, M.S.

Supervisor, Poster Presentation. "The X-ray Source Population of the Star Cluster NGC 3532," American Astronomical Society Meeting, Pasadena, CA. Status: Completed. (June 2022). Physics, Texas State University.
Student(s): Marentes Erika, Graduate, M.S.

Supervisor, Poster Presentation. "Numerical Simulations of X-ray Binaries," American Astronomical Society Meeting, Pasadena, CA. Status: Completed. (June 2022). Physics, Texas State University.
Student(s): Farrell Kennedy, Undergraduate, B.S.

Supervisor, Thesis Presentation. "Icarus I & II: Investigating Cosmic Showers Through Undergraduate Research Involvment," Thesis Forum, San Marcos. Status: Completed. (April 2022). Physics, Texas State University.
Student(s): Jacob McKee, Undergraduate, B.S.

Supervisor, Thesis Presentation. "X-ray Binary Formation in Low and High Metallicity Simulated Stellar Environments," Thesis Forum, San Marcos. Status: Completed. (December 2021). Physics, Texas State University.
Student(s): Kennedy Farrell, Undergraduate, B.S.

Supervisor, Thesis Presentation. "Icarus I & II: Investigating Cosmic Showers Through Undergraduate Research Involvment," Thesis Forum, San Marcos. Status: Completed. (December 2021). Physics, Texas State University.
Student(s): Evan Jellison, Undergraduate, B.S.

Supervisor, Poster Presentation. "The X-ray Sources In The Star Cluster NGC 3532," American Astronomical Society Meeting, Seattle, WA. Status: Completed. (June 2021). Physics, Texas State University.
Student(s): Erika Marentes, Undergraduate, B.S.
Erin Eastep, Graduate, M.S.

Supervisor. 15th Undergraduate Research Conference, San Marcos, TX. Status: Completed. (May 2021). Texas State University.
Student(s): Sudarshan Luitel, Graduate.

Supervisor. 15th Undergraduate Research Conference, San Marcos, TX. Status: Completed. (May 2021). Texas State University.
Student(s): Marentes Erika, Undergraduate.

Supervisor, Poster Presentation. "The Nature of the X-Ray Source IGR J16293-4603," American Astronomical Society Meeting, Honolulu, HI. Status: Completed. (January 2020). Physics, Texas State University.
Student(s): Rose Najar, Undergraduate, B.S.

Supervisor, Poster Presentation. "Classification of Extragalactic X-Ray Sources Using Machine Learning Methods ," American Astronomical Society Meeting, Seattle, WA. Status: Completed. (January 2019). Physics, Texas State University.

Student(s): Mehrdad Rostami Osanloo, Graduate, M.S.

Supervisor, Poster Presentation. "The Nature of X-Ray Sources in NGC 1569," American Astronomical Society Meeting, Seattle, WA. Status: Completed. (January 2019). Physics, Texas State University.
Student(s): Michael Sanchez, Undergraduate, B.S.

Supervisor, Poster Presentation. "Conducting Research from Small University Observatories: Investigating Exoplanet Candidates," American Astronomical Society Meeting, Washington, DC. Status: Completed. (2018). Physics, Texas State University.
Student(s): Kimberly Moreland, Undergraduate, B.S.

Supervisor, Poster Presentation. "Optical Counterparts of X-ray Sources in the Whirlpool Galaxy," American Astronomical Society Meeting, Washington, DC. Status: Completed. (2018). Physics, Texas State University.
Student(s): Luis Bichon, Undergraduate, B.S.

Supervisor, Poster Presentation. "Protostar Evolution in the Orion Nebula Cluster (ONC)," American Astronomical Society Meeting, Washington, DC. (2018). Physics, Texas State University.
Student(s): Michael Sanchez, Undergraduate, B.S.

Supervisor, Poster Presentation. "Employing Machine-Learning Methods to Study Young Stellar Objects," American Astronomical Society Meeting, Washington, DC. Status: Completed. (2018). Physics, Texas State University.
Student(s): Nicholas Moore, Undergraduate, B.S.

Supervisor, Poster Presentation. WISE Conference, San Marcos, TX. Status: Completed. (2018). Physics, Texas State University.
Student(s): Kayley Green-Tooney, Undergraduate, B.S.

Supervisor, Talk. "Understanding Stellar Evolution Through Numerical Simulations of Binary Star Systems," 2018 Joint Fall Meeting of the Texas Section of the APS, Texas Section of the AAPT, and Zone 13 of the Society of Physics Students, Houston, TX. Status: Completed. (October 2018). Physics, Texas State University.
Student(s): Mitchell Ford, Undergraduate, B.S.

Supervisor, Talk. "Unveiling Exotic Sources in the Universe," 2018 Joint Fall Meeting of the Texas Section of the APS, Texas Section of the AAPT,

and Zone 13 of the Society of Physics Students, Houston, TX. Status: Completed. (October 2018). Physics, Texas State University.
Student(s): Kean Martinic, Undergraduate, B.S.

REU program:

Supervisor. HSI STEM Undergraduate Research Experience (SURE), San Marcos, TX. Status: Completed. (August 2021). Physics, Texas State University.
Student(s): Evan Jellison, Undergraduate, B.S.

Supervisor. HSI STEM Undergraduate Research Experience (SURE), San Marcos, TX. Status: Completed. (December 2020). Physics, Texas State University.
Student(s): Erika Marentes, Undergraduate, B.S.

Supervisor. HSI STEM Undergraduate Research Experience (SURE), San Marcos, TX. Status: Completed. (December 2020). Physics, Texas State University.
Student(s): Kennedy Farrell, Undergraduate, B.S.

Supervisor. University of Colorado Boulder, Boulder, CO. Status: Completed. (August 2020). Physics, Texas State University.
Student(s): Kennedy Farrell, Undergraduate, B.S.

Supervisor. HSI STEM Undergraduate Research Experience (SURE), San Marcos, TX. Status: Completed. (2018). Engineering, Texas State University.
Student(s): Keondre Parker, Undergraduate, B.S.

Supervisor. HSI STEM Undergraduate Research Experience (SURE), San Marcos, TX. Status: Completed. (August 2017). Physics, Texas State University.
Student(s): Clint Boldt, Undergraduate, B.S.

Supervisor. HSI STEM Undergraduate Research Experience (SURE), San Marcos, TX. Status: Completed. (August 2017). Physics, Texas State University.
Student(s): Luis Bichon, Undergraduate, B.S.

Supervisor. HSI STEM Undergraduate Research Experience (SURE), San Marcos, TX. Status: Completed. (August 2017). Physics, Texas State University.
Student(s): Michael Sanchez, Undergraduate, B.S.

Supervisor. HSI STEM Undergraduate Research Experience (SURE), San Marcos, TX. Status: Completed. (August 2017). Physics, Texas State University.
Student(s): Nicholas Moore, Undergraduate, B.S.

Scholarship:

Supervisor, Crawford Scholarship. Status: Completed. (2022).
Student(s): Kennedy Farrel, Undergraduate.

Supervisor, Crawford Scholarship. Status: Completed. (2021).
Student(s): Evan Jellison, Undergraduate.

Supervisor, Griffin Scholarship. Status: Completed. (2021).
Student(s): Kennedy Farrell, Undergraduate.

Supervisor, STEM Undergraduate Research Internship Stipend. "Measuring The Decay of Muons in Earth's Atmosphere." Status: Completed. (October 2019). Physics, Texas State University.
Student(s): Evan Jellison, Undergraduate.

Supervisor, STEM Undergraduate Research Internship Stipend. "Computerizing the Texas State Observatory Telescope." Status: In Progress. (October 2019). Physics.
Student(s): Kayley Green-Tooney, Undergraduate.

Supervisor, Griffin Family Endowed Scholarship. Status: Completed. (2018).
Student(s): Clint Boldt, Undergraduate.

Mentor. Houston-Louis Stokes STEM Pathways and Research Alliance (H-LSAMP), San Marcos, TX. Status: Completed. (2017). Physics, Texas State University.
Student(s): Andrew Alvarez, Undergraduate, B.S.

Mentor. DOW-MIT ACCESS, Massachusetts Institute of Technology, Cambridge MA. Status: Completed. (2017). Physics, Texas State University.
Student(s): Andrew Alvarez, Undergraduate, B.S.

Summer School:

Supervisor. Summer School in Statistics for Astronomers, The Pennsylvania State University, University Park, PA 16802. Status: Completed. (June 2021). Physics, Texas State University.
Student(s): Brice Williams, Graduate, M.S.

G. Teaching Professional Development Activities Attended

Workshop, "Scholarship & Teaching Excellence Program," Texas State University, San Marcos, TX, United States. (September 2018 - April 2019).

Workshop, "Mentor Training STEM Undergraduate Research Experience," Texas State University, San Marcos, TX, United States. (July 2017).

Workshop, "New Faculty Workshop," American Association of Physics Teachers, Collage Park, MD, United States. (June 2017).

Workshop, "STEM Faculty Learning Community," Texas State University, San Marcos, TX, United States. (May 2017).

Workshop, "AAPT Computational Workshop," American Association of Physics Teachers, San Antonio, TX, United States. (April 2017).

Conference Attendance, "International Learning Assistant Conference," Boulder, CO, United States. (October 22, 2016 - October 25, 2016).

**III. SCHOLARLY/CREATIVE**

A. Works in Print (including works accepted, forthcoming, in press):

1. Books:

d. Chapters in Books:

Refereed:

Kargaltsev, O., Rangelov, B., & Pavlov, G. (2013). Pulsar-wind Nebulae as a Dominant Population of Galactic VHE Sources. In *The Universe Evolution: Astrophysical and Nuclear Aspects*. NOVA Science Publisher.

2. Articles:

a. Refereed Journal Articles:

Rangelov, B., Yang, H., Williams, B., Hare, J., Kargaltsev, O., & Martinic, K. (2024). Chandra X-ray Observatory Observations of 13 Fermi LAT Sources. *The Astrophysical Journal*. Accepted / In Press. https://doi.org/10.3847/1538-4357/ad09da

Chen, S. G., Kargaltsev, O., Yang, H., Hare, J., Volkov, I., Rangelov, B., & Tomsick, J. (2023). Population of X-ray Sources in the Intermediate-Age Cluster NGC 3532: A Testbed for Machine-Learning Classification. *The Astrophysical Journal*. Published.

Yang, H., Hare, J., Kargaltsev, O., Volkov, I., Chen, S. G., & Rangelov, B. (2022). Classifying Unidentified X-ray Sources in the Chandra Source Catalog Using a Multi-wavelength Machine Learning Approach. *The Astrophysical Journal*, *941*. Published. https://doi.org/10.3847/1538-4357/ac952b

Rice, J. R., Rangelov, B., Prestwich, A. H., Chandar, R., Bichon, L., & Boldt, C. (2021). X-ray binaries in M51 I: catalog and statistics. *The Astrophysical Journal*, *922*. Published. https://doi.org/10.3847/1538-4357/ac22ac

Rangelov, B., Montmerle, T., Federman, S. R., Boisse, P., & Gabici, S. (2019). Runaway O-star Bow Shocks as Particle Accelerators? The Case of AE Aur revisited. *Astrophysical Journal*, *885*. Published. https://doi.org/10.3847/1538-4357/ab43e5

Guillot, S., Pavlov, G. G., Reyes, C., Reisenegger, A., Rodriguez, L. E., Rangelov, B., & Kargaltsev, O. (2019). Hubble Space Telescope Nondetection of PSR J2144-3933: The Coldest Known Neutron Star. *Astrophysical Journal*, *874*(2), 175. https://doi.org/10.3847/1538-4357/ab10da

Hare, J., Volov, I., Kargaltsev, O., Yoines, G., & Rangelov, B. (2019). XMM-Newton and Chandra Observations of the Unidentified Fermi-LAT Source 3FGL J1016.5-6034: A Young Pulsar with a Nebula? *Astrophysical Journal*, *875*(2), 107. https://doi.org/10.3847/1538-4357/ab10da

Johns Mulia, P., Chandar, R., & Rangelov, B. (2019). Does High-density or Mass Help Star Clusters Produce X-Ray Binaries in Star-forming Galaxies? *Astrophysical Journal*, *871*(1). https://doi.org/10.3847/1538-4357/aaf56a

Brightman, B., Balokovic, M., Koss, M., Alexander, D., Annuar, A., Earnshaw, H., … Zezas, A. (2018). A Long Hard-X-Ray Look at the Dual Active Galactic Nuclei of M51 with NuSTAR. *Astrophysical Journal*, *867*(2), 110.

Hare, J., Kargaltsev, O., & Rangelov, B. (2018). Chandra X-Ray Observatory and Hubble Space Telescope Observations of the Intermediate-age Cluster GLIMPSE-C01. *Astrophysical Journal*, *865*, 1.

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Pavlov, G. G., Rangelov, B., Kargaltsev, O., & Reisenegger, A. (2017). Old but still hot: Far-UV detection of PSR B0950+08. *Astrophysical Journal*, *850*, 79.

Kargaltsev, O., Pavlov, G. G., Klingler, N., & Rangelov, B. (2017). Pulsar Wind Nebulae Created by Fast-Moving Pulsars. *Journal of Plasma Physics*, *83*, 635830501.

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Sonbas, E., Rangelov, B., Kargaltsev, O., Dhuga, K., & Hare, J. (2016). X-ray Sources in the Dwarf Spheroidal Galaxy Draco. *Astrophysical Journal*, *821*, 54.

Rangelov, B., Pavlov, G. G., Kargaltsev, O., Durant, M., Bykov, A. M., & Krassilchtchikov, A. (2016). First Detection of a Pulsar Bow Shock Nebula in Far-UV: PSR J0437–4715. *The Astrophysical Journal*, *831*(2), 129. https://doi.org/10.3847/0004-637x/831/2/129http://dx.doi.org/10.3847/0004-637x/831/2/129

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Pavlov, G., Hare, J., Kargaltsev, O., Rangelov, B., & Durant, M. (2015). An Extended X-Ray Object Ejected from the PSR B1259-63/LS2883 Binary. *Astrophysical Journal*, *806*, 192.

Williams, B., Rangelov, B., Kargaltsev, O., & Pavlov, G. (2015). Magnesium-rich Ejecta in the SNR G284.3−1.8 Around the High-Mass Gamma-Ray Binary 1FGL J1018.6−5856. *Astrophysical Journal*, *808*, L19.

Kargaltsev, O., Rangelov, B., Hare, J., & Pavlov, G. (2014). Chandra Imaging of Gamma-Ray Binaries. *Astronomische Nachrichten*, *335*, 301.

Rangelov, B., Posselt, B., Kargaltsev, O., Pavlov, G., & Hare, J. (2014). Multi-Wavelength Study of HESS J1809−193: Suzaku and Chandra Observations of the North-East Extension. *Astrophysical Journal*, *796*, 34.

Garofali, K., Converse, J. M., Chandar, R., & Rangelov, B. (2012). N-body Simulations of Low Mass Star Clusters. *Astrophysical Journal*, *755*, 49.

Rangelov, B., Chandar, R., Prestwich, A. H., & Whitmore, B. C. (2012). X-ray Binaries and Star Clusters in the Antennae: Optical Cluster Counterparts. *Astrophysical Journal*, *758*, 99.

Rangelov, B., Prestwich, A. H., & Chandar, R. (2011). The Connection Between X-ray Binaries and Star Clusters in NGC 4449. *Astrophysical Journal*, *741*, 86.

b. Non-refereed Articles:

Luitel, S., & Rangelov, B. (2022). Numerical Simulation of Compact Objects in Binary Systems Post-Supernova. *Research Notes of the AAS*, *6*. Published. https://doi.org/10.3847/2515-5172/ac4992

Hare, J., Yang, H. G., Kargaltsev, O., Rangelov, B., Pike, S., & Tomsick, J. E. (2021). Chandra Observations of MAXI J1848-015 prior to its outburst and a possible NIR counterpart. *The Astronomer's Telegram*, (14499).

Kargaltsev, O., Rangelov, B., & Pavlov, G. G. (2013). Gamma-ray and X-ray Properties of Pulsar Wind Nebulae and Unidentified Galactic TeV Sources. Published.

B. Works Not in Print:

2. Invited Talks, Lectures, and Presentations:

Rangelov, B., Alkek Library Open Theater, "Exploring Solar Eclipses: From Ancient Myths to Modern Science," Texas State University. (October 2023).

Rangelov, B., "X-ray Exploration in the Age of AI: The Future of Astrophysical Source Classification," Texas State University. (October 2023).

Farrell, K., Rangelov, B., American Astronomical Society Meeting, "Numerical Simulations of X-ray Binaries," American Astronomical Society, Pasadena, CA, United States. (June 2022).

Palmore, D., Rangelov, B., Chandar, R., Prestwitch, A., American Astronomical Society Meeting, "Optical Counterparts to X-ray Sources in Nearby Starburst Galaxies," American Astronomical Society, Pasadena, CA, United States. (June 2022).

Williams, B., Rangelov, B., Kargaltsev, O., Hare, J., American Astronomical Society Meeting, "The X-ray Sources In The Star Cluster Chandra Observations of Galactic GeV Gamma-ray Sources," American Astronomical Society, Pasadena, CA, United States. (June 2022).

Marentes, E., Eastep, E., Rangelov, B., American Astronomical Society Meeting, "The X-ray Sources In The Star Cluster NGC 3532," American Astronomical Society, Pasadena, CA, United States. (June 2022).

Rangelov, B., "Compact Stars Speeding Through the Galaxy," Texas Lutheran University. (February 18, 2020).

Rangelov, B., "Machine-Learning Methods in Astrophysics: Unveiling the X-ray Universe," Texas State University, Computer Science Department, San Marcos, TX, United States. (October 4, 2019).

Rangelov, B., "Investigating the High Energy Universe with Multi-wavelength Data and Machine-Learning Method," Southwestern University, Georgetown, TX, United States. (March 6, 2019).

Rangelov, B., Building Astronomy in Texas Symposium 2019, "Unveiling X-ray Source Populations with Multiwavelength Data and Machine-Learning," University of Texas at Dallas, Dallas, TX, United States. (January 27, 2019).

Rangelov, B., Department of Physics Colloquium, "Compact Stars Speeding Through the Galaxy," Texas State University. (2018).

Rangelov, B., STEM Undergraduate Research Experience, "The Peer Review Process," Texas State University, San Marcos, TX, United States. (2017).

Rangelov, B., Department of Physics Colloquium, "Unveiling the Most Exotic Sources in the Universe," Texas State University. (October 5, 2016).

Rangelov, B., IAU General Assembly, "The far-UV bow shock of the nearest millisecond pulsar J0437−4715," Honolulu, HI. (2015).

Rangelov, B., NewCompStar Conference, "The supernova remnant G284.3−1.8 and the X-ray binary 1FGL J1018.6−5856," Budapest, Hungary. (2015).

Rangelov, B., "Unveiling X-ray Source Populations with Multiwavelength Data and Machine-Learning," Harvard-Smithsonian Center for Astrophysics, Cambridge, MA. (2015).

Rangelov, B., "COSPAR Scientific Assembly," Moscow, Russia. (2014).

Rangelov, B., Physics of Neutron Stars, "The far-UV bow shock of the nearest millisecond pulsar J0437−4715," St. Petersburg, Russia. (2014).

Rangelov, B., TeV Particle Astrophysics Conference, "Multi-Wavelength Study of HESS J1809−193: Suzaku and Chandra Observations of the North-East Extension," Irvine, CA. (2013).

Rangelov, B., TeV Particle Astrophysics Conference, "Pulsar-wind Nebulae as a Dominant Population of Galactic VHE Sources," Irvine, CA. (2013).

Rangelov, B., 5th Bulgarian- Serbian Conference, "Preliminary Report on Low-Dispersion Eclipse Spectroscopy During TSE 2006," Sofia, Bulgaria. (2006).

4. Workshops:

Rangelov, B., "Future Space-based Gamma-ray Observatories," NASA Goddard Space Flight Center. (2015).

5. Other Works not in Print:

a. Works "submitted" or "under review":

Journal Articles:

Farrell, K., & Rangelov, B. (Submitted / Under Review). Numerical Simulations of High Mass X-ray Binaries. *Research Notes of the AAS*. (October 2023)

Marentes, E., & Rangelov, B. (Submitted / Under Review). The Nature of X-ray Sources in Andromeda Galaxy. *Research Notes of the AAS*. (October 2023)

b. Works "in progress":

Journal Articles:

Rangelov, B., Kargaltsev, O., & Hare, J. (In Preparation; Not Yet Submitted). Deep Chandra Observations of the Galactic Star Cluster GLIMPSE-C01. *Research Notes of the AAS*.

Palmore, D., Rangelov, B., Chandar, R., & Prestwich, A. H. (In Preparation; Not Yet Submitted). Optical Counterparts to X-Ray Sources in Nearby Starburst Galaxies.

Rice, J. R., Rangelov, B., Prestwich, A. H., Chandar, R., Bichon, L., & Boldt, C. (In Preparation; Not Yet Submitted). X-ray binaries in M51 II: Optical Counterparts and Cluster Origins. *The Astrophysical Journal*.

c. Other Works Not in Print:

Posters:

Hare, J., Kargaltsev, O., Younes, G., Volkov, I., Rangelov, B., American Astronomical Society Meeting, "Chandra observations of the pulsar candidate 4FGL J1015.5-6030," AAS High Energy Astrophysics Division, New York, NY, United States. (April 2022).

Chen, S., Kargaltsev, O., Yang, H., Hare, J., Tomsick, J., Rangelov, B., American Astronomical Society Meeting, "X-ray Source Populations in NGC 3532 and Other Intermediate Age Star Clusters," AAS High Energy Astrophysics Division, New York, NY, United States. (April 2022).

Chen, S., Kargaltsev, O., Rangelov, B., American Astronomical Society Meeting, "Multiwavelength Study Of X-ray Sources In Two Intermediate Age Clusters," American Astronomical Society, Seattle, WA, United States. (June 2021).

Marentes, E., Eastep, E., Rangelov, B., American Astronomical Society Meeting, "The X-ray Sources In The Star Cluster NGC 3532," American Astronomical Society, Seattle, WA, United States. (June 2021).

Sanchez, M. A. (Presenter), Mayorga-Luna, R., Rangelov, B., 11th Annual International Research Conference for Graduate Students, "Preliminary Double-Cross Antenna System for Future CubeSat Communication," San MArcos, TX, United States. (November 5, 2019).

Additional Comments: The poster received maximum points and was graded "Excellent!" by faculty judges.

Rostami Osanloo, M., Rangelov, B., Kargaltsev, O., Hare, J., American Astronomical Society Meeting, "Classification of Extragalactic X-Ray Sources Using Machine Learning Methods," American Astronomical Society, Seattle, WA. (January 2019).

Sanchez, M., Rangelov, B., American Astronomical Society Meeting, "The Nature of X-Ray Sources in the Starburst Galaxy NGC1569," American Astronomical Society, Seattle, WA, United States. (January 2019).

Rangelov, B., COSPAR 2018 42nd Assembly, "Are runaway O-star bow shocks capable of accelerating cosmic rays?," Pasadena, CA. (2018).

Rangelov, B., AAS 223, #153.22, "Gamma-ray and X-ray Properties of Pulsar Wind Nebulae and Unidentified Galactic TeV Source," Washington, DC. (2014).

Rangelov, B., X-ray Binaries: Celebrating 50 Years Since the Discovery of Sco X-1, "High Mass X-ray Binaries in Nearby Star-forming Galaxies," Boston, MA. (2012).

Rangelov, B., AAS 218, #410.15, "The Connection Between X-ray Binaries and Star Clusters in the Antennae," Boston, MA. (2011).

Rangelov, B., AAS 213, #445.06, "High Mass X-Ray Binaries in Nearby Starburst Galaxies," Long Beach, CA. (2009).

C. Scholarly / Creative Grants and Contracts:

1. Funded External Grants and Contracts:

Lewis, Karen A, Whitten, Steven T (Co-Principal), Hough, Loren (Co-Principal), Hodby, Eleanor (Co-Principal), Theodoropoulou, Nikoleta (Supporting), Close, Eleanor W (Supporting), Rangelov, Blagoy (Supporting), Islam, Tanzima Z (Supporting), Betancourt, Tania (Supporting), Berry, Joe (Supporting), Finklestein, Noah (Supporting), MacGregor, Meredith (Supporting), Brown, Jed (Supporting), Eaves, Joel (Supporting). Creating Equitable Pathways to STEM Graduate Education, Sloan Foundation, Private / Foundation / Corporate, $249,299.00. (Submitted: September 2, 2022, Funded: January 2023 - Present). Grant.
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Sloan_Grant 19553 TXSU_FE-1.pdf

Marentes, Erika (Principal), Rangelov, Blagoy (Co-Principal), Kargaltsev, Oleg (Co-Principal). The nature of the UV bow shock nebula around PSR J0437-4715, European Southern Observatory/Very Large Telescope. (Submitted: August 2023, Funded: January 2024 - 2025). Grant.

Additional Comments: This is an observing proposal/grant that does not come with funding, just data. The PI of this proposal is an M.S. student

Kargaltsev, Oleg (Principal), Rangelov, Blagoy (Co-Principal), Hare, Jeremy (Co-Principal), Pavlov, George (Co-Principal), Mignani, Roberto (Co-Principal), Poselt, Bettina (Co-Principal). The legacy UV survey of 28 pulsars, Hubble Space Telescope/NASA, $24,882.00. (Submitted: 2022, Funded: 2023 - 2025). Grant.

Rangelov, Blagoy (Principal). Multi-wavelength Classification of X-ray sources in Spiral Galaxies, NASA Astrophysics Data Analysis Program, $286,110.00. (Submitted: 2021, Funded: June 15, 2022 - June 14, 2025). Grant.

Kargaltsev, Oleg (Principal), Rangelov, Blagoy (Co-Principal), Hare, Jeremy (Co-Principal), Pavlov, George (Co-Principal), Mignani, Roberto (Co-Principal), Poselt, Bettina (Co-Principal), Tomsick, John (Co-Principal), Bodaghee, Arash (Co-Principal), Eikenberry, Steven (Co-Principal), Fornasini, Francesca (Co-Principal). Galactic Archeology: Mining Globular Clusters for Massive Star Remains with Machine Learning, Hubble Space Telescope/NASA. (Submitted: April 7, 2021, Funded: January 2022 - December 2024). Grant.

Rangelov, Blagoy (Principal), Kargaltsev, Oleg (Co-Principal), Pavlov, George (Co-Principal), Hare, Jeremy (Co-Principal). Survey of Gamma-ray Pulsars, Chandra X-ray Center/NASA, $92,910.00. (Submitted: April 1, 2020, Funded: 2021 - 2023). Grant.

Hare, Jeremy (Principal), Rangelov, Blagoy (Co-Principal), Kargaltsev, Oleg (Co-Principal), Pavlov, George (Co-Principal). High-resolution Imaging and Timing of 3FGL J1016.5-6034, Chandra X-ray Center/NASA, $54,860.00. (Submitted: April 2019, Funded: 2020 - 2022). Grant.

Kargaltsev, Oleg (Principal), Rangelov, Blagoy (Co-Principal), Hare, Jeremy (Co-Principal), Pavlov, George (Co-Principal). X-ray content of Galactic Fermi LAT 4FGL sources, Chandra X-ray Center/NASA, $60,000.00. (Submitted: April 2019, Funded: 2020 - 2022). Grant.

Rangelov, Blagoy (Principal), Kargaltsev, Oleg (Co-Principal), Pavlov, George (Co-Principal), Hare, Jeremy (Co-Principal). The Intermediate-age Cluster GLIMPSE-C01, Chandra X-ray Center/NASA, $80,370.00. (Submitted: April 2018, Funded: July 2019 - July 2022). Grant.

Hare, Jeremy (Principal), Rangelov, Blagoy (Co-Principal), Kargaltsev, O (Co-Principal). Spectral and Timing study of the gamma-ray pulsar candidate 3FGL J1016.5-6034, XMM-Newton/NASA, $0.00. (Submitted: November 2018, Funded: 2019 - 2020). Grant.

Additional Comments: This is observing grant without funding.

Rangelov, Blagoy (Principal). Multi-wavelength classification of X-ray sources in M33, Chandra X-ray Center/NASA, $67,996.00. (Submitted: 2017, Funded: January 1, 2018 - December 31, 2020). Grant.

Rangelov, Blagoy (Principal). Revealing pulsars hidden in the 3nd Fermi Catalog, Chandra X-ray Center/NASA, $55,152.00. (Submitted: 2017, Funded: January 1, 2018 - December 31, 2020). Grant.

Rangelov, Blagoy (Principal), Montmerle, Thierry (Co-Principal), Boisse, Patrick (Co-Principal), Federman, Steven (Co-Principal). Are runaway O-star bow shocks able to accelerate cosmic rays?, Chandra X-ray Center/NASA, $60,913.00. (Submitted: 2016, Funded: January 1, 2017 - December 31, 2019). Grant.

Rangelov, Blagoy (Principal), Percent Contribution: 0%, Green-Tooney, Kayley (Other), Percent Contribution: 100%. Internship, Jacobs, Private / Foundation / Corporate, $9,992.40. (Funded: June 3, 2019 - August 16, 2019). Contract.

Additional Comments: Internship for Kayley Green-Tooney at Jacobs. Collaborate with the Orbital Debris Research and Science Operations team to acquire optical data remotely from NASA's Meter Class Autonomous Telescope.

Rangelov, Blagoy (Co-Principal). A Deep broadband study of the diverse population of X-ray sources in M51 with Chandra and NuSTAR. (Submitted: 2016, Funded: 2016). Grant.

Kargaltsev, O (Principal), Rangelov, Blagoy (Co-Principal). Sleuthing for compact objects accreting from the interstellar medium, XMM-Newton AO-15/NASA. (Funded: 2015). Grant.

Rangelov, Blagoy (Co-Principal), Kargaltsev, O (Principal). Snap-shot Survey of Fermi Pulsar Candidates. (Funded: 2015). Grant.

Rangelov, Blagoy (Principal). Swift Cycle 12, Revealing pulsars hidden in the 3rd Fermi Catalog, $45,000.00. (Funded: 2015). Grant.

Rangelov, Blagoy (Principal). The intermediate-age cluster GLIMPSE-C01, $30,000.00. (Funded: 2015). Grant.

Rangelov, Blagoy. AAS Travel Grant, XXIX IAU General Assembly, Hawaii, $1,200.00. (Funded: August 2015). Grant.

Rangelov, Blagoy (Principal). Chandra Cycle 16, Snap-shot survey of unidentified Fermi sources, $50,000.00. (Funded: 2014). Grant.

Rangelov, Blagoy (Principal). Revealing pulsars hidden in the 2nd Fermi Catalogue, $42,000.00. (Funded: 2013). Grant.

Rangelov, Blagoy (Principal). The Nature of LS 5039. (Funded: 2013). Grant.

Rangelov, Blagoy (Principal). Diffuse X-ray Emission From Massive Star Clusters in the Antennae, $40,000.00. (Funded: 2012). Grant.

Blair, W (Principal), Rangelov, Blagoy (Co-Principal). Stellar Life and Death in M83: A Hubble- Chandra Perspective. (Funded: 2011). Grant.

Rangelov, Blagoy (Co-Principal), Chandar, R (Principal). Structural Properties of Star Clusters in M33. (Funded: 2009). Grant.

Rangelov, Blagoy (Co-Principal), Chandar, R (Principal). The Nature of Optical Counterparts to X-ray Binaries in M101. (Funded: 2008). Grant.

2. Submitted, but not Funded, External Grants and Contracts:

Palmore, David Christian, Rangelov, Blagoy (Co-Principal), Kargaltsev, Oleg (Co-Principal). Particle acceleration in runaway massive star bow shocks, Chandra X-ray Center/NASA. (Submitted: March 2022). Grant.

Marentes, Erika (Principal), Rangelov, Blagoy (Co-Principal), Kargaltsev, Oleg (Co-Principal). The nature of the UV bow shock nebula around PSR J0437-4715, European Southern Observatory/Very Large Telescope. (Submitted: March 2022). Grant.

Lewis, Karen A, Whitten, Steven T (Co-Principal), Hough, Loren (Co-Principal), Hodby, Eleanor (Co-Principal), Theodoropoulou, Nikoleta (Supporting), Close, Eleanor W (Supporting), Rangelov, Blagoy (Supporting), Islam, Tanzima Z (Supporting), Betancourt, Tania (Supporting), Berry, Joe (Supporting), Finklestein, Noah (Supporting), MacGregor, Meredith (Supporting), Brown, Jed (Supporting), Eaves, Joel (Supporting). Creating Equitable Pathways to STEM Graduate Education, Sloan Foundation, Private / Foundation / Corporate, $414,792.00. (Submitted: June 1, 2021). Grant.

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Additional Comments: $249,521 requested from Sloan, $165,271 cost-share

**$414,792 total project cost**

CU subaward: $71,742 Sloan funds, $83,742 in CU cost-share (total $155,484)

Kargaltsev, Oleg (Principal), Rangelov, Blagoy (Co-Principal), Hare, Jeremy (Co-Principal), Pavlov, George (Co-Principal), Mignani, Roberto (Co-Principal), Poselt, Bettina (Co-Principal). A legacy UV survey of pulsars, Hubble Space Telescope/NASA. (Submitted: April 7, 2021). Grant.

Klingler, Noel (Principal), Rangelov, Blagoy (Co-Principal), Kargaltsev, Oleg (Co-Principal). Resolving The First Bow Shock Pulsar Wind Nebula in Near-Infrared, Hubble Space Telescope/NASA. (Submitted: April 7, 2021). Grant.

Palmore, David Christian, Rangelov, Blagoy (Co-Principal), Kargaltsev, Oleg (Co-Principal), Hare, Jeremy (Co-Principal). Particle acceleration in runaway massive star bow shocks, Chandra X-ray Center/NASA. (Submitted: March 15, 2021). Grant.

Kargaltsev, Oleg (Principal), Rangelov, Blagoy (Co-Principal), Kouveliotou, Chrissa (Co-Principal), Tomsick, John (Co-Principal), Kroupa, Pavel (Co-Principal), Eikenberry, Steven (Co-Principal). From Birth to Death: Evolution of stars in X-ray selected open clusters, NASA/James Webb Space Telescope. (Submitted: November 24, 2020). Grant.

Rangelov, Blagoy (Principal), Kargaltsev, Oleg (Co-Principal), Hare, James (Co-Principal). The intermediate-age cluster GLIMPSE-C01, NASA/James Webb Space Telescope. (Submitted: November 24, 2020). Grant.

Rangelov, Blagoy (Principal), Kargaltsev, Oleg (Co-Principal), Pavlov, George (Co-Principal), Hare, Jeremy (Co-Principal). Searching for Pulsars in the 8th-year Fermi Gamma-ray Catalog, XMM-Newton/European Space Agency. (Submitted: October 9, 2020). Grant.

Rangelov, Blagoy (Principal), Kargaltsev, Oleg (Co-Principal), Pavlov, George (Co-Principal). Chandra Imaging of Coma Berenices Dwarf, Chandra X-ray Center/NASA. (Submitted: April 1, 2020). Grant.

Kargaltsev, Oleg (Principal), Rangelov, Blagoy (Co-Principal), Hare, Jeremy (Co-Principal), Pavlov, George (Co-Principal), Mignani, Roberto (Co-Principal), Poselt, Bettina (Co-Principal), Tomsick, John (Co-Principal), Bodaghee, Arash (Co-Principal), Eikenberry, Steven (Co-Principal), Fornasini, Francesca (Co-Principal). Evolution of stellar populations in X-ray selected clusters, Hubble Space Telescope/NASA. (Submitted: March 7, 2020). Grant.

Klingler, Noel (Principal), Rangelov, Blagoy (Co-Principal), Kargaltsev, Oleg (Co-Principal). The First Bow Shock Pulsar Wind Nebula Detection in Infrared, Hubble Space Telescope/NASA. (Submitted: March 7, 2020). Grant.

Kargaltsev, Oleg (Principal), Rangelov, Blagoy (Co-Principal), Hare, Jeremy (Co-Principal), Pavlov, George (Co-Principal), Mignani, Roberto (Co-Principal), Poselt, Bettina (Co-Principal). The legacy UV survey of 100 pulsars, Hubble Space Telescope/NASA. (Submitted: March 7, 2020). Grant.

Rangelov, Blagoy (Principal), Kargaltsev, Oleg (Co-Principal). The nature of the UV bow shock nebula around PSR J0437-4715, Hubble Space Telescope/NASA. (Submitted: March 7, 2020). Grant.

Rangelov, Blagoy (Principal), Kargaltsev, Oleg (Co-Principal), Pavlov, George (Co-Principal), Reisenegger, Andreas (Co-Principal), Guillot, Sebastien. The

thermal evolution of the old solitary millisecond pulsar PSR J2124-3358, Hubble Space Telescope/NASA. (Submitted: March 7, 2020). Grant.

Rangelov, Blagoy (Principal), Percent Contribution: 50%, Haakenson, Hilary (Co-Principal), Percent Contribution: 30%, Edberg, Donald (Co-Principal), Percent Contribution: 20%. Collaborative Research: GP-UP: Increasing the Participation of Underrepresented Groups in STEM by Engaging Students in Geosciences, National Science Foundation, $330,000.00. (Submitted: February 13, 2020). Grant.

Rangelov, Blagoy (Principal). Career: Multi-wavelength Classification of Extragalactic X-ray sources Using Machine Learning Methods, National Science Foundation, $691,277.00. (Submitted: July 2019). Grant.

Kargaltsev, Oleg (Principal), Rangelov, Blagoy (Co-Principal), Hare, Jeremy (Co-Principal), Pavlov, George (Co-Principal), Mignani, Roberto (Co-Principal), Poselt, Bettina (Co-Principal), Tomsick, John (Co-Principal), Bodaghee, Arash (Co-Principal), Eikenberry, Steven (Co-Principal), Fornasini, Francesca (Co-Principal). Evolution of stellar populations in X-ray selected clusters, Hubble Space Telescope/NASA. (Submitted: April 5, 2019). Grant.

Kargaltsev, Oleg (Principal), Rangelov, Blagoy (Co-Principal), Hare, Jeremy (Co-Principal), Pavlov, George (Co-Principal), Mignani, Roberto (Co-Principal), Poselt, Bettina (Co-Principal). Legacy survey of neutron stars in far-UV, Hubble Space Telescope/NASA. (Submitted: April 5, 2019). Grant.

Kargaltsev, Oleg (Principal), Rangelov, Blagoy (Co-Principal), Pavlov, George (Co-Principal). Measuring the Temperature of a 17 Myr old Neutron Star, Hubble Space Telescope/NASA. (Submitted: April 5, 2019). Grant.

Pavlov, George (Principal), Rangelov, Blagoy (Co-Principal), Kargaltsev, Oleg (Co-Principal), Hare, Jeremy (Co-Principal), Mignani, Roberto (Co-Principal), Poselt, Bettina (Co-Principal), Reisenegger, Andreas (Co-Principal), Bykov, Andrey (Co-Principal). Pulsars and their bow shocks in far-UV, Hubble Space Telescope/NASA. (Submitted: April 5, 2019). Grant.

Klingler, Noel (Principal), Rangelov, Blagoy (Co-Principal), Kargaltsev, Oleg (Co-Principal). The First Bow Shock Pulsar Wind Nebula Detection in Infrared, Hubble Space Telescope/NASA. (Submitted: April 5, 2019). Grant.

Rangelov, Blagoy (Principal), Hare, Jeremy (Co-Principal), Kargaltsev, Oleg (Co-Principal), Pavlov, George (Co-Principal). The intermediate-age cluster

NGC 3532, Hubble Space Telescope/NASA. (Submitted: April 5, 2019). Grant.

Rangelov, Blagoy (Principal), Kargaltsev, Oleg (Co-Principal). The nature of the UV bow shock nebula around PSR J0437-4715, Hubble Space Telescope/NASA. (Submitted: April 5, 2019). Grant.

Hare, Jeremy (Principal), Rangelov, Blagoy (Co-Principal), Kargaltsev, Oleg (Co-Principal), Pavlov, George (Co-Principal), Younes, George (Co-Principal), Tomsick, John (Co-Principal). Mining Gamma-ray Catalogs in Search of New X-ray Binaries, NuStar/NASA. (Submitted: March 29, 2019). Grant.

Hare, Jeremy (Principal), Rangelov, Blagoy (Co-Principal), Kargaltsev, Oleg (Co-Principal), Pavlov, George (Co-Principal), Younes, George (Co-Principal), Tomsick, John (Co-Principal). High Resolution Imaging and Timing of 3FGL J1016.5-6034, Chandra X-ray Center/NASA. (Submitted: March 14, 2019). Grant.

Rangelov, Blagoy (Principal), Kargaltsev, Oleg (Co-Principal), Pavlov, George (Co-Principal), Hare, Jeremy (Co-Principal). Survey of Gamma-ray Pulsars, Chandra X-ray Center/NASA. (Submitted: March 14, 2019). Grant.

Kargaltsev, Oleg (Principal), Rangelov, Blagoy (Co-Principal), Pavlov, George (Co-Principal), Hare, Jeremy (Co-Principal). X-ray content of Galactic Fermi LAT 4FGL source fields, Chandra X-ray Center/NASA. (Submitted: March 14, 2019). Grant.

3. Funded Internal Grants and Contracts:

Gomez Ortega, Juan (Principal), Rangelov, Blagoy (Co-Principal). Microcomputers and Peripherals to Support Experimental Curriculum in Upper Division Courses, Texas State University, $32,511.70. (Submitted: January 2023, Funded: August 2023 - July 31, 2024). Grant.

Jellison, Evan (Principal), Rangelov, Blagoy (Supporting). Undergraduate Research Fellowship, Texas State University, $1,000.00. (Submitted: February 2021, Funded: June 2021 - May 2022). Sponsored Research.

Rangelov, Blagoy (Principal). Startup Funds, Texas State University, $171,000.00. (Funded: September 2018 - August 2021). Sponsored Research.

Green-Tooney, Kayley (Principal), Rangelov, Blagoy (Supporting). Undergraduate Research Fellowship, Texas State University, $1,000.00. (Submitted: October 2018, Funded: January 2019 - May 2020). Sponsored Research.

Rangelov, Blagoy (Principal). Faculty Startup Library Grant, Texas State University, $1,000.00. (Submitted: October 2018, Funded: January 1, 2019 - December 31, 2019). Grant.

Sanchez, Michael (Principal), Rangelov, Blagoy (Supporting). Undergraduate Research Fellowship, Texas State University, $1,000.00. (Submitted: October 2018, Funded: January 2019 - December 2019). Sponsored Research.

Rangelov, Blagoy. Mentor STEM Undergraduate Research Experience, Texas State University, $2,500.00. (Funded: June 2018 - July 2018). Contract.

Rangelov, Blagoy. Mentor STEM Undergraduate Research Experience, Texas State University, $2,500.00. (Funded: June 2017 - July 2017). Contract.

4. Submitted, but not Funded, Internal Grants and Contracts:

Rangelov, Blagoy (Principal). Empowering Underrepresented Students through Space Technology: A Hands-on Approach to STEM Education, Research Enhancement Program, Texas State University, $8,000.00. (Submitted: October 2023). Sponsored Research.

D. Scholarly / Creative Fellowships, Awards, Honors:

Award / Honor Nominee: Presidential Awards for Excellence in Scholarship.
2021

Fellowship Recipient: Predoctoral Fellowship, Harvard-Smithsonian Center for Astrophysics.
2008 - 2009

Award / Honor Recipient: Stipend Enhancement Award, The University of Toledo.
2006 - 2009

Award / Honor Recipient: Stipend Award for Academic Excellence, Sofia University, Bulgaria.
2002 - 2006

Award / Honor Recipient: 1st place National Science Competition, Bulgaria.

2001

E. Scholarly / Creative Professional Development Activities Attended:

Workshop, "Best Practices for an Inclusive Faculty Search Process," Texas State University, San Marcos, TX, United States. (April 2, 2019).

Workshop, "Finale and First Year Review," Texas State University, San Marcos, TX, United States. (March 29, 2019).

Workshop, "Annual Evaluation and Digital Measures," Texas State University, San Marcos, TX, United States. (November 16, 2018).

Workshop, "Tenure and Promotion and Career Development," Texas State University, San Marcos, TX, United States. (October 19, 2018).

Workshop, "Research Enhancement Program (REP) and Beyond," Texas State University, San Marcos, TX, United States. (September 14, 2018).

Conference Attendance, "Future Space-based Gamma-ray Observatories," NASA, Greenbelt, MD, United States. (2015).

Workshop, "Alma Data Reduction Workshop," Space Telescope Science Institute, Baltimore, MD, United States. (2014).

F. Media Recognition:

Internet, Texas State Newsroom. (October 2023).

Additional Comments:
https://news.txst.edu/featured-faculty/2023/coming-eclipses-promise-celestial-spectacle.html

Internet, Texas State Newsroom. (October 27, 2020).

Additional Comments:
https://news.txstate.edu/student-achievements/2020/icarus-i.html

Internet, Texas State Newsroom. (April 19, 2019).

Additional Comments:
https://news.txstate.edu/research-and-innovation/2019/Rangelov-explains-groundbreaking-black-hole-image.html

Internet. (2018).

Additional Comments: Interview.
https://texasstateobservatory.wordpress.com/interview/

Internet, AAS NOVA. (January 2017).

Additional Comments: A Too-Hot Pulsar Speeding Through the Galaxy

Internet, AstroBites. (January 2017).

Internet, Chandra X-ray Center Press Release. (2016).

Internet, Hubble Space Telescope News Release. (2014).

Newspaper, University Star. (October 27, 2020).

Additional Comments:
https://www.universitystar.com/life_and_arts/icarus-1-students-work-to-launch-texas-states-first-low-earth-orbiting-satellite/article_72e7b33e-18a4-11eb-bf9a-27e0aa2dc6d5.html?mc_cid=749e8d53bb

Newspaper, University Star. (August 2017).

Additional Comments:
http://star.txstate.edu/2017/08/astroclub-to-travel-across-stateliness-to-experience-solar-eclipse/

Radio, KTSW 89.9 - The Other Side of Radio. (2016).

## IV. SERVICE

A. Institutional

1. University:

University Mentor, Society for Space Exploration. (August 2020 - Present).

Additional Comments: Faculty Advisor to the Society for Space Exploration.

Organizer, Weekly Public Observing. (2016 - Present).

Additional Comments: Conducting public observing every Wednesday. Averaging ~25 visitors per evening.

University Mentor, Astronomy Club. (2016 - Present).

Additional Comments: Founder and Advisor to the Astronomy Club. Participating in weekly meetings to discuss Astronomy news, club projects, outreach activities, etc.

Member, New Faculty Workshop. (August 2019).

Additional Comments: Facilitating round table discussions.

2. College:

University Mentor, Creating Equitable Pathways to STEM Graduate Education. (January 2023 - December 2024).

Additional Comments: Mentoring students in the Creating Equitable Pathways to STEM Graduate Education program.

University Mentor, Houston-Louis Stokes Alliance for Minority Participation Scholars Program (H-LSAMP). (January 2023 - December 2023).

Additional Comments: H-LSAMP Mentor at the College of Science and Engineering.

University Mentor, Houston-Louis Stokes Alliance for Minority Participation Scholars Program (H-LSAMP). (August 2017 - December 2017).

Additional Comments: H-LSAMP Mentor at the College of Science and Engineering.

3. Department/School:

Chair, Graduate Admission Committee. (August 2021 - Present).

Member, Faculty Search Committee. (June 2022 - May 2023).

Member, Faculty Awards Committee. (August 2019 - 2022).

Member, Graduate Admission Committee. (March 2019 - July 2021).

Member, Curriculum Development Committee. (2016 - 2019).

Member, Faculty Search Committee. (November 2018 - May 2019).

Member, Scientific Instrument Tech Search Committee. (2018).

B. Professional:

Reviewer / Referee, The Monthly Notices of the Royal Astronomical Society. (August 2022 - 2023).

Reviewer / Referee, The Monthly Notices of the Royal Astronomical Society. (February 2023 - November 2023).

Reviewer / Referee, NASA FINESST ASTRO22, United States. (February 2023 - May 2023).

Reviewer / Referee, Chandra Users Committee, Chandra X-ray Center, Cambridge, MA, United States. (September 2019 - August 2022).

Additional Comments: The Users Committee represents the larger astronomical community. The Committee ensures a broad-based community input to Chandra X-ray Center (CXC) functions and provides the general user with a formal mechanism for influencing the CXC. It ensures that the CXC, the general users, and NASA regularly meet together to discuss CXC operations and the needs of users.

Reviewer / Referee, The Astrophysical Journal. (March 2021 - March 2022).

Chair, Chandra X-ray Observatory, Chandra X-ray Center, Cambridge, MA, United States. (June 2021).

Reviewer / Referee, The Monthly Notices of the Royal Astronomical Society. (March 2020 - December 2020).

Reviewer / Referee, NSF Division of Astronomical Sciences, United States. (April 16, 2020 - April 17, 2020).

Reviewer / Referee, Nature Astronomy. (January 2019 - August 2019).

Reviewer / Referee, NASA NuSTAR Cycle 5, Baltimore, MD, United States. (May 28, 2019 - May 31, 2019).

Reviewer / Referee, The Astrophysical Journal. (October 2018 - May 2019).

Reviewer / Referee, Chandra X-ray Observatory, Chandra X-ray Center, Cambridge, MA, United States. (February 24, 2019 - February 26, 2019).

Additional Comments: Chandra Cool Attitude Targets reviewer

Co-Chair, Chandra X-ray Observatory, Chandra X-ray Center, Cambridge, MA, United States. (2018).

Reviewer / Referee, The Astrophysical Journal. (August 2016 - February 2017).

Conference Co-Organizer, DC/MD/VA Astrophysics Summer Meeting, The George Washington University, Washington, DC. (2016).

Peer-Review Panelist, Hubble Space Telescope, Space Telescope Science Institute, Baltimore, MD. (2016).

Peer-Review Panelist, Fermi Gamma-Ray Space Telescope, Fermi Science Support Center, NASA GSFC, Greenbelt, MD. (2014 - 2015).

Conference Co-Organizer, DC/MD/VA Astrophysics Summer Meeting, The George Washington University, Washington, DC. (2014).

Peer-Review Panelist, Chandra X-ray Observatory, Chandra X-ray Center, Cambridge, MA. (2014).

Facilitator, Chandra X-ray Observatory, Chandra X-ray Center, Cambridge, MA. (2008).

C. Community:

Organizer, Planetarium, Texas State University. (2017 - Present).

Additional Comments: Designed and built a portable PVC-pipe Planetarium for Texas State University, which is used every year for outreach purposes.

Organizer, Public Observing, Texas State University Observatory. (September 2016 - Present).

Organizer, Anmular Solar Eclipse. (October 2023).

Additional Comments: Viewing of the Total Lunar Eclipse on Jan 21, 2019

Organizer, Bobcat Day. (October 2023).

Additional Comments: The Observatory hosted over 200 people for public observing during the Family Weekend event.

Organizer, Family Weekend. (October 2023).

Additional Comments: The Observatory hosted over 200 people for public observing during the Family Weekend event.

Organizer, Bobcats Back. (September 2023).

Additional Comments: In addition to a booth, the Astronomy lab set up our portable PVC-pipe planetarium for the event.

Organizer, Girl Scout Troop 43105. (2022).

Additional Comments: The Observatory hosted scouts group (~20 participants), Girl Scout Troop 43105, for public observing during.

Organizer, Family Weekend. (October 2022).

Additional Comments: The Observatory hosted over 200 people for public observing during the Family Weekend event.

Organizer, Week of Welcome. (August 2022).

Additional Comments: In addition to a booth, the Astronomy lab set up our portable PVC-pipe planetarium for the event.

Organizer, BSA troop 112. (November 2021).

Additional Comments: The Observatory hosted scouts group (~20 participants), BSA troop 112, for public observing during.

Organizer, Family Weekend. (October 7, 2021 - October 8, 2021).

Additional Comments: The Observatory hosted over 200 people for public observing during the Family Weekend event.

Organizer, Bobcat Preview. (August 19, 2021).

Additional Comments: The Observatory hosted hundreds of new students for public observing during the Bobcat Preview event.

Coach, USA Astronomy and Astrophysics Olympiad. (2015 - 2020).

Additional Comments: Test writer and coach.

Organizer, School science demonstrations. (February 4, 2020).

Additional Comments: Astronomy demonstrations for 4-8th graders (20 students).

Organizer, Orionids Meteor Shower, San Marcos, TX. (October 21, 2019).

Additional Comments: Organized viewing of the Leonids Meteor Shower at the Observatory.

Member, Blue Hole Star Party, Wimberley, TX. (October 5, 2019).

Organizer, School science demonstrations. (February 20, 2019).

Additional Comments: Astronomy demonstrations for 4th graders (20 students).

Organizer, Total Lunar Eclipse. (January 21, 2019).

Additional Comments: Viewing of the Total Lunar Eclipse on Jan 21, 2019

Organizer, IDEA school science demonstrations. (November 14, 2018).

Additional Comments: Texas State University 8th grade field trip (73 students).

Organizer, Family Weekend. (October 5, 2018 - October 6, 2018).

Additional Comments: The Observatory hosted over 200 people for public observing during the Family Weekend event.

Organizer, Hernandez Elementary science demonstrations. (January 2018).

Additional Comments: Texas State University fifth grade field trip (~100 people).

Organizer, Family Weekend. (2017).

Additional Comments: The Observatory hosted over 150 people for public observing during the Family Weekend event.

Organizer, KAPC school visit. (2017).

Additional Comments: Visiting Katherine Anne Porter Charter High School in Wimberley, TX (groups of ~25 people)

Organizer, Total Solar Eclipse Trip. (August 2017).

Additional Comments: Organized observing trip to Marshall, MO (12 students)

Organizer, Hernandez Elementary science demonstrations. (January 2017).

Additional Comments: Texas State University fifth grade field trip (~100 people).

Organizer, Family Weekend. (2016).

Additional Comments: The Observatory hosted over 200 people for public observing during the Family Weekend event.

Organizer, Public Observing for Earth Science class. (November 29, 2016).
Additional Comments: Hosted public observing for Earth Science class.

Organizer, Leonids Meteor Shower. (November 16, 2016).
Additional Comments: Organized viewing of the Leonids Meteor Shower at the Observatory.

Planetarium Assistant (Volunteer). (1996 - 2001).

Public Observing Assistant (Volunteer). (1994 - 2001).

D. Organization Memberships:

American Physical Society (APS). (September 2019 - Present).

International Astronomical Union (IAU). (2018 - Present).

American Astronomical Society member. (2008 - Present).

Sigma Pi Sigma National Physics Honor Society. (2007 - Present).

Society of Physics Students. (2007 - Present).

E. Service Honors and Awards:

Award / Honor Nominee: Mariel M. Muir Excellence in Mentoring Awards.
2020

Award / Honor Recipient: People's Choice Award.
2020 - March 6, 2020

Additional Comments: The Astronomy Clubs received the People's Choice Award at the WISE conference.
2019 - March 8, 2019

Additional Comments: The Astronomy Clubs received the People's Choice Award at the WISE conference.
2018

Additional Comments: The Astronomy Clubs received the People's Choice Award at the WISE conference.

2017

Additional Comments: The Astronomy Clubs received the People's Choice Award at the WISE conference.

Award / Honor Nominee: Presidential Awards for Excellence in Service.
2019

Award / Honor Nominee: Robert S. Hyer Award.
2019

Award / Honor Recipient: Excellence in Service.
March 2019 - September 2019

Additional Comments: 2019 College Achievement Award for Excellence in Service

G. Service Professional Development Activities Attended:

Workshop, "Graduate Advising 101: Using The Graduate College’s RFI Form for Program Recruiting," Texas State University, San Marcos, TX, United States. (October 2023).