

Previous TST - TL1 Trainees (July 2021 – June 2022)



Scholar: Kristi Dietert

Degree Sought: Ph.D.

Program: Cell Biology, Genetics, and Molecular Medicine (**CGM**) Discipline of the Integrated Biomedical Sciences (**IBMS**)

Research Interest: Neurobiology of Aging **Mentor:** Naomi Sayre, Ph.D., Assistant Professor, Department of Neurosurgery

Research Topic: *LRP1 as a modulator of CXCR4 in hippocampal neurogenesis and neurodegeneration*

Kristi Dietert attended Texas Lutheran University as a PACE (Pacesetter Awards for College Excellence) scholar and Honors Program member. She graduated cum laude with a double major in Molecular Biology and Chemistry. After working in both industry and academic research, she began her pursuit of a PhD in Integrated Biomedical Science (IBMS) at UT Health SA in the fall of 2017. Since then, she has discovered her true passion in research – making progress toward a better understanding of brain aging so that better therapeutics for devastating neurodegenerative diseases such as Alzheimer’s disease may be developed. She joined the laboratory of Dr. Naomi Sayre in the Department of Neurosurgery for the variety of approaches the lab uses to address scientific questions along with its clinical resources. Her research is specifically focused on elucidating the mechanisms governing adult neurogenesis both in the context of naïve brain aging and recovery after injury to better understand how these processes may be harnessed for novel therapeutic strategies. In addition to her research, she is dedicated to doing her part to contribute to the continued betterment of the institution and her program. She has served as her discipline’s representative and chair of the IBMS Student Council, is a WIDOM (women in science) member, and has been a student representative in the Graduate Student Association, IBMS program director search committee and during the THECB program review meetings.



Scholar: Valentina Garbarino, Ph.D.

Affiliation: Postdoctoral Research Fellow, Glenn Biggs Inst. for Alzheimer's and Neurodegenerative Diseases

Research Interest: Neurodegenerative disorders, Alzheimer's disease, Neurobiology of Aging, Senescence, Therapeutic Interventions **Mentors:** Sudha Seshadri, M.D.; Mitzi M. Gonzales Ph.D.

Research Topic: *Correlating blood markers of senescence, tau pathology and cognitive function in individuals with early Alzheimer's disease treated with senolytic therapy*

Valentina Garbarino graduated with her doctoral degree from the UT Health San Antonio Biomedical Sciences Program in the Physiology and Pharmacology discipline in 2018, supported by a NIA sponsored Biology of Aging T32 Training Grant. Her thesis work was completed under the mentorship of Lynette Daws, Ph.D. and Georgianna Gould Ph.D., and utilizing mouse models, focused on the developmental and behavioral outcomes of perinatal exposure to medications including Prozac and metformin. Upon graduation she was awarded the Armand J. Guarino Award for academic excellence in doctoral studies. Valentina joined the Glenn Biggs Institute for Alzheimer's and Neurodegenerative Diseases as a postdoctoral research fellow in 2019. Under the guidance of a carefully curated mentoring team, made up of experts in the field of neurodegenerative disease, her main research focus is identifying novel treatment mechanisms and therapeutic strategies for Alzheimer's disease and other related acquired cognitive impairments. Valentina began her postdoctoral training conducting preclinical studies to target senescent cells in the treatment of Alzheimer's disease pathology in mouse models of tauopathies, and is now contributing to the translation of these exciting studies into early pilot and phase II clinical trials exploring senolytic treatments for the progression of Alzheimer's disease.



Scholar: Clare Murray

Degree Sought: Ph.D.

Program: Molecular Immunology & Microbiology

Research Interest: Cancer Biology, Immunology **Mentor:** Tyler Curiel, M.D., MPH, Department of Medicine /Hematology & Medical Oncology

Research Topic: *Pharmacologic PD-L1 depletion improves tumor response to DNA damage repair inhibitors and aPD-L1 through reduced tumor intracellular PD-L1 signals and non-canonical immune effects*

Clare Murray is a fourth year student in the South Texas Medical Scientist Training Program (MSTP). She graduated with a Bachelors of Science in Chemical Engineering in 2018 from the University of Texas at Austin. During her undergraduate studies, Clare studied under Dr. Hal Alper to study the genetic engineering of the oleaginous yeast *Y. lipolytica* for the production of polyketides. As a summer intern, she worked with Dr. Dario Marchetti at the Houston Methodist Research Institute to study the role of circulating tumor cells in melanoma and triple negative breast cancer brain metastasis. After graduating, Clare matriculated into the South Texas MSTP program and completed the first two years of medical school. She is now in her second year as a graduate student in the department of Microbiology, Immunology, and Molecular Genetics under the mentorship of Dr. Tyler J. Curiel. Clare's research in Dr. Curiel's lab focuses on investigating tumor cell-intrinsic signals of PD-L1 and the potential to target these signals with novel PD-L1 depleting drugs. While tumor PD-L1 canonically signals to tumor infiltrating lymphocytes to evade anti-tumor immunity, PD-L1 also has tumor cell-intrinsic signals, including control of mTOR, autophagy, and tumor initiating (stem) cells. Clare's work during her time as a TL1 scholar will focus on repurposing novel FDA-approved drugs to deplete tumor PD-L1, thus disrupting these signals and sensitizing drug-resistant tumors to select therapies with rapid translational potential.



Scholar: Raphael Reyes

Degree Sought: Ph.D.

Program: IBMS - Microbiology, Immunology & Molecular Genetics

Research Interest: Malaria, Immunology **Mentor:** Evelien Bunnik, Ph.D., Assistant Professor, Department of Microbiology, Immunology & Molecular Genetics

Research Topic: *In-depth analysis of broadly protective immune responses against the malaria parasite variant surface antigens responsible for cerebral malaria*

Raphael Reyes is a third-year PhD candidate in the department of Microbiology, Immunology, and Molecular Genetics. He graduated with a Bachelor's of Science in Biology in 2017 from the University of California, Riverside. As an undergrad, Raphael studied the regulation of gene expression and chromatin structure in *Plasmodium falciparum*, the causative agent of malaria, in response to epigenetic drugs. After graduation, Raphael continued his research career at the University of Missouri-Columbia, where he was selected to participate in an NIH post baccalaureate research education program. In 2018, Raphael began his matriculation at UT Health San Antonio's Integrated Biomedical Sciences PhD program. His dissertation work is under the guidance and supervision of Dr. Evelien Bunnik. During the Translational Science Training TL1 Award, Raphael's research will focus on the identification and characterization of broadly protective immune responses against the malaria parasite antigen responsible for severe disease. Raphael's work will involve the use of donor samples from individuals naturally infected with *P. falciparum* to study malaria specific B cells and their respective antibodies contributing to disease protection. His findings will facilitate the development of a vaccine against severe malaria by identifying the exact antigen epitopes that need to be targeted.



Scholar: Angelica Riojas, Ph.D.

Affiliation: Postdoctoral Research Fellow in the Radiation and Imaging Institute

Research Interest: Complex disease, functional genetics, integrated omics, MRI/MRS Imaging

Mentor: Geoffrey Clarke, PhD

Research Topic: *Investigating the impact of maternal diet during pregnancy on their adult offspring's metabolism using a nonhuman primate model.*

Angelica joined Geoffrey Clarke's laboratory as a postdoctoral research fellow after obtaining her doctoral degree from the Molecular Medicine and Translational Science program at Wake Forest University. Prior to her doctoral degree, Angelica attended Texas State University for her masters in biochemistry and bachelor in biology. As a doctoral student, Angelica utilized a baboon model to identify renal gene expression underlying blood pressure in female primates. This work established the foundation for continued work with a nonhuman primate model of complex disease.

Angelica's current project aims to investigate the impact of maternal diet during pregnancy on their adult offspring's metabolism using a nonhuman primate model. Genetic network analysis will be performed on two key metabolic tissues: the liver and skeletal muscle. This project will relate gene expression from whole transcriptome sequencing with functional imaging via magnetic resonance spectroscopy in order to identify differences in underlying genetic mechanisms. Angelica hopes her research findings will lead to better and earlier metabolic disease interventions and possibly shift the outcomes for metabolic diseases in many individuals.



Scholar: Afaf Saliba

Degree Sought: Ph.D.

Program: IBMS - Cell Biology, Genetics, and Molecular Medicine

Research Interest: Metabolic disorders, Diabetes, Chronic Kidney Disease

Mentor: Kumar Sharma, MD, FAHA, FASN; Professor, Chief of the Division of Nephrology; Hillis Chair and Vice-Chair of Research at the Department of Medicine; Director of Center for Renal Precision Medicine

Research Topic: *MDM2 pathways related to amino acid metabolites clinically altered in diabetic kidney disease*

Afaf Saliba holds two bachelor's degrees and two master's degrees in Biology and Psychology. She won several chess competitions among Lebanese national universities. Afaf also earned multiple scholarships. After graduating from the American University of Beirut in 2017, she trained at Baylor College of Medicine at the Neurological Research Institute for a year. Then Afaf joined the Cellular and Integrative Physiology department as a visiting scientist at UT Health San Antonio. She finds her experience at UTHSCSA enriched with an inclusive culture.

Afaf is now a third-year Ph.D. candidate and seeks to become a successful and independent translational scientist in metabolic disorders. Her thesis project aims to decipher molecular and metabolic pathways in diabetic kidney disease based on large-scale data analysis of patients' samples. She is using mouse models in addition to the top-notch technology at the Center for Renal Precision Medicine. She is focusing on identifying appropriate therapeutics for diabetic nephropathy.

In addition to being a proud TL1 scholar, she currently serves as the Cell Biology, Genetics, and Molecular Medicine (CGM) discipline students representative at the IBMS council. She also is a member of the American Society of Nephrology (ASN) and the Association for Clinical and Translational Science (ACTS). Afaf enjoys serving her community, and her motto is the UTHSCSA tag line: "We Make lives better".



Scholar: Noah Sanchez

Degree Sought: Ph.D.

Program: Radiological Sciences - Medical Physics

Research Interest: MRI, MRS, Metabolic Imaging

Mentor: Geoffrey Clarke, Ph.D.: Chief, MRI Division/ Professor, Department of Radiology

Research Topic: *Quantification of high-energy phosphorus metabolites, intramyocellular lipids, and extramyocellular lipids using ^{31}P MRS, ^1H MRS, and MRI methods in human skeletal muscle*

Noah Sanchez graduated from Rhodes College with a Bachelor's of Science degree in Physics. After his undergraduate studies, Noah worked as a medical physics assistant under medical physicists at Emory University's Winship Cancer Institute. Noah began his pursuit of a Ph.D. degree under Dr. Geoffrey Clarke at UT Health San Antonio in the Fall of 2020. His current focus is in using ^{31}P -Phosphorus and ^1H -Hydrogen MRS and MRI methods to quantify metabolites that can be used in the diagnosis of metabolic diseases and conditions such as Type II Diabetes Mellitus as well as assessing sarcopenia in aged individuals and individuals that have undergone certain breast cancer therapies. Noah aims to use the knowledge and skills from this training program to relate his results in his various studies of MR physics directly to patients who are in need of accurate, precise, and in-vivo metabolic assessments.

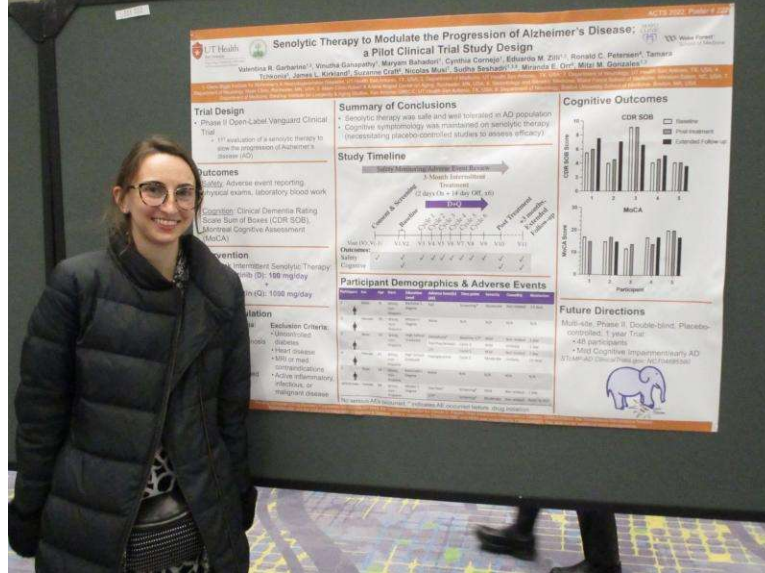
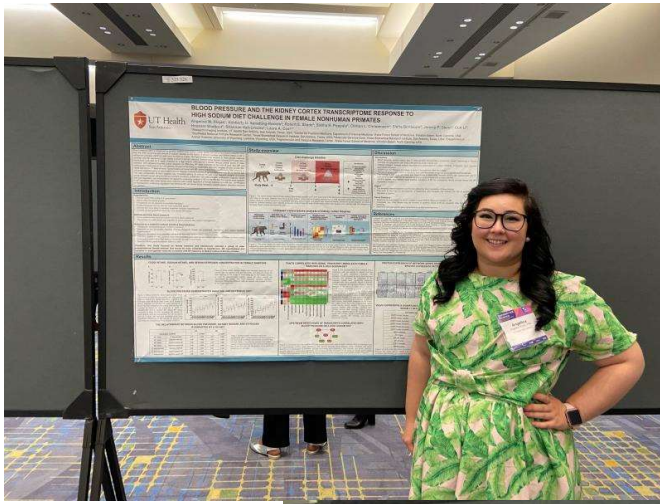
Awards and Acknowledgements

Our TL1 Trainees had a great time sharing their research and networking at this year's 2022 ACTS meeting!

Five of our TL1 Trainees were given the Wellcome Travel Award and invited to give an oral abstract presentation. This award gives \$500 to each Trainee for their travel expenses. Well done everyone!

1. Clare Murray, poster presentation, oral abstract presentation, Wellcome Travel Award
2. Kristi Dietert, poster presentation, oral abstract presentation, Wellcome Travel Award
3. Afaf Saliba, poster presentation, oral abstract presentation, Wellcome Travel Award
4. Noah Sanchez, poster presentation, oral abstract presentation, Wellcome Travel Award
5. Raphael Reyes, poster presentation, oral abstract presentation, Wellcome Travel Award





Congratulations to Translational Science TL1 Trainee Afaf Saliba for being selected as this year's ACTS Outstanding Trainee: Predoctoral Scholar Award!



Below is a link to the video that was shown at the award ceremonies!

[Link to Afaf's Video](#)

Previous TST - TL1 Trainees

(July 2020 – June 2021)



Scholar: Colton Baley

Degree Sought: Ph.D.

Program: Radiological Sciences - Medical Physics

Research Interest: Radiation Therapy, 4D Cone-Beam Computed Tomography

Mentor: Daniel Saenz, Ph.D.; Assistant Professor, Dept. of Radiation Oncology

Research Topic: Implementation of 4D cone-beam computed tomography for localization accuracy and normal tissue sparing in lung radiation therapy

Colton graduated from Texas A&M University in 2018, where he received a Bachelor of Science in Radiological Health Engineering with the accolade Summa Cum Laude. While at Texas A&M, Colton worked as a radiation safety technician at the Environmental Health and Safety Department, Radiological Safety program, and pursued research in a radiochemistry lab leading to his first authorship. After finishing his undergraduate degree at Texas A&M, Colton began his current pursuit of a PhD in medical physics in the Radiological Sciences program at UT Health San Antonio under his mentor Dr. Daniel Saenz. Colton's research focuses on using image guidance in stereotactic body radiation therapy to improve cancer patient outcomes. Specifically, he is invested in translating the application of four-dimensional cone beam computed tomography for pretreatment image guidance to better assess mobile tumor location during respiration in phantoms to lung cancer patients.



Scholar: Kunal Baxi, Ph.D.

Department: Greehey Children's Cancer Research Institute

Research Interest: Cancer Biology TP53

Mentor: Myron Ignatius, PhD; Assistant Professor, Dept. of Molecular Medicine

Research Topic: To characterize and assign function to mutant TP53 from sarcomas in the clinic

Kunal Baxi completed his PhD in Biology (Molecular Genetics) from the University of Saskatchewan, Canada in 2017. His research during his PhD focused on elucidating the connection between reproductive and organismal lifespan in the nematode *C. elegans*. In the summer of 2017, Kunal joined the laboratory of Dr. Myron Ignatius at UT Health San Antonio where he uses zebrafish as a model organism. Kunal's research seeks to address fundamental tenets of TP53 biology in Rhabdomyosarcoma (RMS), an aggressive neoplasm of skeletal muscle and it is the most common childhood soft tissue tumor. In RMS, inactivation of the TP53 tumor suppressor pathway is common. Kunal's research focuses on characterizing TP53 mutations from sarcoma patients in the clinic using a tp53-null zebrafish model in order to better understand how these mutations in tp53 affect RMS tumor biology such as initiation, proliferation and apoptosis. This approach would enable clinicians to be better informed about treatment options for patients.



Scholar: Victoria, Bry

Degree Sought Ph.D.

Program: Radiological Sciences-Medical Physics

Research Interest: Radiation Therapy, Stereotactic Radiosurgery, and Pediatric Radiotherapy

Mentor: Karl Rasmussen, Ph.D.; Assistant Professor, Department of Radiation Oncology

Research Topic: Clinical implementation of surface guided imaging for pediatric craniospinal irradiation

Victoria Bry graduated from Colorado College in May of 2016, where she earned her bachelor's degree in Physics. Victoria began her graduate studies in August of 2018 in the Radiological Sciences Program at UT Health San Antonio and is pursuing her Ph.D. in Medical Physics. Victoria is a co-author of a book chapter on her research area of optical surface guided radiation therapy (SGRT). Her current research under the mentorship of Dr. Karl Rasmussen involves the analysis of SGRT for pediatric radiotherapy. She expects to show that SGRT can improve treatment efficiency and accuracy in complex treatments, which is predicted to reduce the risk of treatment related toxicities. Victoria is the current student representative for UT Health San Antonio Radiological Sciences Committee on Graduate Studies. She is also a member of Linking Interprofessional Networks for Collaboration Student Council, Student Legacy Council, and WISDOM at UT Health San Antonio. In addition, she is a member the American Association of Physicists in Medicine (AAPM) and an Affiliate member of Mays MD Anderson Cancer Center.



Scholar: Kylie Meyer, Ph.D., MSc

Degree Sought: Ph.D.

Department: School of Nursing

Research Interest: Family caregiving relationships

Mentor: Carole White, Ph.D., RN; Professor, School of Nursing

Research Topic: The changing social lives of family caregivers and association with markers of depression and cardiovascular health

Kylie Meyer, PhD completed bachelor's training at Kalamazoo College in Anthropology/Sociology 2014, where she interned at an Area Agency on Aging and discovered a passion for addressing the needs of older adults and caregiving families. After completing master's-level training in Gerontology on a U.S. Fulbright at the University of Southampton, UK, she joined the Gerontology doctoral program at the University of Southern California. Dr. Meyer's career goal is to build targeted intervention programs to support the health and quality of life of caregiving families, especially those living with dementia. Dr. Meyer is now a post-doctoral researcher at the UT Health San Antonio School of Nursing's Caring for the Caregiver program, led by Dr. Carole White. Her current research is on spousal caregivers' relationships following a diagnosis of dementia, specifically how caregivers' relationships with care recipients, friends, and family members associate with health-related quality of life and chronic disease risk. Based within the Pearlin Stress Process Model, findings will be used to understand how social support serves as a modifiable risk factor and possible intervention target to prevent chronic disease among family caregivers, a population disproportionately at risk of mental and physical health morbidities. During the fellowship period, Dr. Meyer will learn how to manage a daily diary survey study examining day-to-day variation in social support among caregivers, as well as how to integrate objective health markers (salivary cortisol) into her research. Dr. Meyer is also co-PI on 3 funded research programs to deliver accessible online interventions to family caregivers.



Scholar: George Plasko

Degree Sought: Ph.D.

Program: Radiological Sciences

Research Interest: IBMS/Biology of Aging Discipline

Mentor: Feng Liu, PH., M.D.; Professor, Department of Pharmacology

Research Topic: Adipokine deficiency results in obesity-induced metabolic disease in females

George Plasko earned his bachelor's degree in Biomedical Engineering from the University of South Carolina, Columbia. George is currently pursuing a PhD in the Integrated Biomedical Sciences Doctoral Program in Biology of Aging Discipline. He joined Dr. Feng Liu's lab to learn from their extensive history of pharmacological research in obesity and diabetes. George began investigating a novel adipokine, tetranectin, that is elevated in obese and diabetic patient serum. By being a TST TL1 Trainee, George hopes to become an exceptional early career translational scientist in the metabolism field while laying a foundation for his long-term growth as a primary investigator.



Scholar: Raphael Reyes

Degree Sought: Ph.D.

Program: IBMS/Microbiology, Immunology and Molecular Genetics

Research Interest: Malaria, Immunology

Mentor: Evelien Bunnik, Ph.D.; Assistant Professor, Dept. of Microbiology Immunology & Molecular Genetics

Research Topic: In-depth analysis of broadly protective immune responses against the malaria parasite variant surface antigens responsible for cerebral malaria

Raphael Reyes is a third-year PhD candidate in the department of Microbiology, Immunology, and Molecular Genetics. He graduated with a Bachelor's of Science in Biology in 2017 from the University of California, Riverside. As an undergrad, Raphael studied the regulation of gene expression and chromatin structure in *Plasmodium falciparum*, the causative agent of malaria, in response to epigenetic drugs. After graduation, Raphael continued his research career at the University of Missouri-Columbia, where he was selected to participate in an NIH post baccalaureate research education program. In 2018, Raphael began his matriculation at UT Health San Antonio's Integrated Biomedical Sciences PhD program. His dissertation work is under the guidance and supervision of Dr. Evelien Bunnik. During the Translational Science Training TL1 Award, Raphael's research will focus on the identification and characterization of broadly protective immune responses against the malaria parasite antigen responsible for severe disease. Raphael's work will involve the use of donor samples from individuals naturally infected with *P. falciparum* to study malaria specific B cells and their respective antibodies contributing to disease protection. His findings will facilitate the development of a vaccine against severe malaria by identifying the exact antigen epitopes that need to be targeted.



Scholar: Travis Shute

Degree Sought: Ph.D.

Program: IBMS/Microbiology, Immunology and Molecular Genetics

Research Interest: Immunology, Vaccine Development, Tumor Immunotherapies

Mentor: Elizabeth Leadbetter, Ph.D.; Associate Professor, Dept. of Microbiology Immunology & Molecular Genetics

Research Topic: Glycolipid-loaded nanoparticles harness iNKT cells for tumor immunotherapy

Travis graduated from Elon University in North Carolina with a Bachelor's of Science degree in biology. It was during his time at Elon he developed an interest in scientific research as a career. Shortly after he graduated, he moved to Australia to pursue graduate work in marine biology at James Cook University. While finishing his studies at JCU he decided to return to the United States and apply his passion for research towards benefiting people by working on vaccines and treatments for human diseases. Travis began his studies at UT Health San Antonio in 2017 in the Integrated Biomedical Sciences PhD program. He quickly found a lab and a mentor, Dr. Elizabeth Leadbetter, in the Department of Microbiology, Immunology, and Molecular Genetics that was a great fit. His dissertation research is focused on activating natural killer T cells, by administering nanoparticles containing a glycolipid adjuvant and tumor associated antigen, to promote an anti-tumor response. By first testing the therapy in a B16 melanoma model, Travis can study the mechanistic effects of the therapy on tumor growth and the therapy's potential for combinational use with other clinically relevant cancer immunotherapies, such as checkpoint inhibitors. Travis intends to use the opportunities provided by the Translational Science Training TL1 Award to explore biomedical science fields away from the bench and gain a greater appreciation for research progresses past the initial pre-clinical stages.

(July 2019 – June 2020)



Scholar: Sadiya Ahmad

Degree Sought: Ph.D.

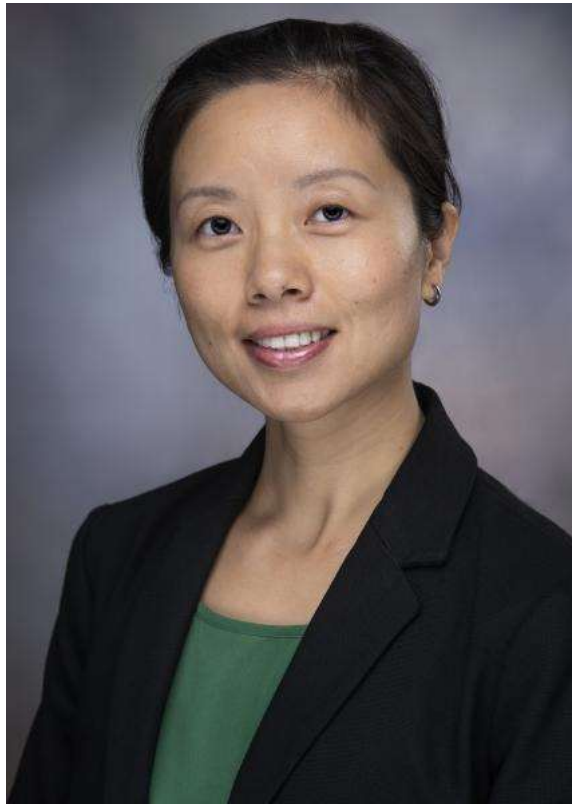
Program: IBMS/Cell, Genetics, and Molecular Medicine

Research Interest: Neuroscience, Cell Biology

Mentor: Naomi Sayre, Ph.D.; Assistant Professor, Department of Neurosurgery

Research Topic: Astrocyte Low-Density Lipoprotein Receptor Related Protein 1 and Recovery after Stroke

Sadiya graduated Summa Cum Laude from the University Texas Pan American, now known as the University of Texas Rio Grande Valley, with a Bachelors of Science degree. Sadiya's passion for community engagement began when she joined Teach For America. She taught Chemistry and Physics to an under-served population of high school students during her two-year commitment in the Rio Grande Valley. In an effort to combine her newfound love for teaching and zeal for science, she spent a year at the University of Houston (UH) in a Post-Baccalaureate program while working as a science tutor at the UH Learning Support Services. She joined the laboratory of Dr. Bradley McConnell and studied the role of scaffolding proteins on cardiac signaling and heart disease. Since her acceptance into the Integrated Biomedical Sciences PhD program, Sadiya has joined the laboratory of Dr. Naomi Sayre in the Department of Neurosurgery. The focus of her research is to understand the molecular mechanisms that affect repair and recovery post- stroke. She has a keen interest in studying astrocytes, the primary supporting cell in the brain, and the role they play in regulating homeostasis under normal and pathological conditions. Sadiya was awarded the Translational Science Training TL1 Award in 2017 and 2018, which allowed her to enhance the quality and scope of the doctoral research by experiencing additional interdisciplinary research training and mentorship in Translational Science. In 2018, Sadiya received the Presidential Ambassador of Graduate School of Biomedical Sciences Award. In addition to enhancing her scientific career, Sadiya has simultaneously dedicated time serving the San Antonio community. She has continued her role in Teach For America as an alumna where she attends meetings and workshops to promote and support educational equity throughout San Antonio. She has also been actively involved in community outreach events such as judging high school science fairs, volunteering with the American Heart Association, and shadowing at Reeves Rehabilitation Center at University Hospital.



Scholar: Yan Du, Ph.D, MPH, RN

Department: School of Nursing

Research Interest: Precision Health, Management of Diabetes and Comorbidities, Aging in Place, and Health Disparities

Mentor: Jing Wang, PhD, MPH, RN; Professor and Vice Dean for Research, School of Nursing

Research Topic: Response to an Individualized and Digital Enhanced Lifestyle Intervention in Diabetes Patients with and without Diabetic Kidney Disease: A Precision Health Approach

Yan Du received her bachelor's degree in Nursing. While working as a registered nurse, she witnessed many patients suffer from reduced quality of life and significantly shortened lifespans due to severe chronic conditions. This experience drives her to dedicate her life to prevention and management of chronic diseases. To fulfill this goal, in 2010, she began graduate school at Tulane University, and received her master's degree in Public Health, and Ph.D. in Aging Studies. She is now a postdoctoral fellow in the UT Health San Antonio School of Nursing. Centering on health technologies and individualized behavior intervention, her research focuses on translational research on health disparities, aging in place, and chronic diseases and aging (e.g., diabetes and its comorbidities), with a precision health approach integrating social environment, behaviors, and omics.



Scholar: Benjamin T. Enslow, M.D.

Department: Medicine

Research Interest: Mitochondrial Biology, Cell Signaling

Mentor: Madesh Muniswamy, MS, PhD; Long Endowed Professor in Medicine, Dept. of Medicine, Division of Nephrology

Research Topic: Control of Mitochondrial Shape Transition (MiST) through use of cytoskeletal drugs

In 2014, Benjamin Enslow completed a Bachelor of Science in Biochemistry with honors at Schreiner University in Kerrville, Texas, and earned his M.D. in 2019 from the Long School of Medicine at UT Health San Antonio. Benjamin's research interests center on defining and exploiting cellular signaling pathways in human disease states. He spent his first three years of medical school investigating the regulatory role of calmodulin and phosphoinositides in the operation of neuronal voltage-gated potassium channels, work which has translational implications for the treatment of epilepsy and traumatic brain injury. Benjamin spent his fourth year of medical school conducting bench work into microtubule dynamics and cancer pharmacology. During this period, he aided in the development of a novel high-throughput screening assay for classifying subtypes of triple negative breast cancer. Benjamin is currently a post-doctoral fellow in the laboratory of Dr. Madesh Muniswamy, in the Department of Medicine, Division of Nephrology, at UT Health San Antonio. His current work is focused on mitochondrial biology and calcium signaling pathways that underlie many physiologic and pathophysiologic conditions. Specifically, Benjamin is interested in therapeutics that alter the cytoskeletal architecture and influence mitochondrial function, with the goal to test the effectiveness of such therapies in protecting cells from ischemic-reperfusion injury during organ transplantation.



Scholar: Myrna Garcia

Degree Sought: M.D./Ph.D.

Program: Microbiology, Immunology and Molecular Genetics

Research Interest: Tumor Immunology

Mentor: Tyler J. Curiel, M.D., MPH, Professor, Department of Medicine

Research Topic: Improving cancer response to immune checkpoint blockade in aged hosts

Myrna Garcia graduated from the University of Houston in 2015 where she earned a Bachelor's of Science degree in Biology with a minor in Mexican-American Studies. After graduating, Myrna worked at Baylor College of Medicine performing research focused on improving education and access to nutritional foods in low socio-economic households. In 2016, Myrna matriculated into the UT Health San Antonio MSTP and began medical school where she held leadership positions in organizations such as The American Medical Women's Association and was also involved in the global health program through The Center for Medical Humanities and Ethics. Myrna is a rising 2nd year PhD student in the Microbiology, Immunology and Molecular Genetics track under the tutelage of Dr. Tyler Curiel. Her research focuses on improving efficacy of cancer immunotherapy agents such as immune checkpoint blockade in aged hosts.



Scholar: Cassandra Leonardo

Degree Sought: M.D./Ph.D.

Program: Radiological Sciences

Research Interest: Neuroimaging, Age-related Cognitive Disorders, Imaging Genetics

Mentor: Peter T. Fox, MD; Director, Research Imaging Institute

Research Topic: Genetic Influence over Age-related Functional Connectivity Changes within the Default Mode Network in a Mexican-American Extended Pedigree Cohort

Cassandra Leonardo graduated from New York University in 2012, where she earned a Bachelor of Science degree in Neural Science with a minor in Philosophy. Cassandra then worked as a Research Associate at the Laboratory of Neuro Imaging at the University of Southern California under the direction of Dr. Paul Thompson, where she was heavily involved in two of the world's largest neuroimaging studies including the Alzheimer's Disease Neuroimaging Initiative (ADNI) and the Enhancing Neuro Imaging Genetics Through Meta-Analysis (ENIGMA) Consortium. In 2014, Cassandra entered the MSTP program at the University of Texas Health Science Center to pursue a career as a physician-scientist. She is currently working in Dr. Peter Fox's lab investigating the extent of genetic influence over age-related functional connectivity changes within the default mode network in a Mexican-American extended pedigree cohort.



Scholar: Holly Parenica

Degree Sought: Ph.D.

Program: Radiological Sciences - Medical Physics

Research Interest: Monte Carlo Modeling, Dose Calculation Algorithms, Quality Assurance

Mentor: Sotirios Stathakis, Ph.D. Professor/Clinical and Associate Chief of Medical Physics Division

Research Topic: Clinical Implementation of Monte Carlo Modeling of the ELEKTA Versa HD with Agility Collimator Head

Holly Parenica graduated with a BS in Radiological Health Engineering from Texas A&M University in 2016 as an Undergraduate Research Scholar. She began her graduate studies in 2016 in the Radiological Sciences Program at UT Health San Antonio and is pursuing a Ph.D. in Medical Physics. Holly is performing her dissertation research under Dr. Sotirios Stathakis at the UT Health San Antonio MD Anderson Cancer Center. Her research interests include radiation dose calculation algorithms, adaptive radiotherapy, patient specific quality assurance, and advanced treatment planning techniques. She was awarded a position as a Pre-doctoral Fellow in the UTHSCSA Cancer Research Training Program supported by the Cancer Prevention and Research Institute of Texas from 2018-2019. In 2019 she was awarded the Translational Science Training TL1 Award. Holly served two years as the student representative for the Radiological Sciences Committee on Graduate Studies. She is an active member of the American Association of Physicists in Medicine where she currently serves as the secretary of the Student and Trainees Subcommittee.



Scholar: Grace Porter

Degree Sought: Ph.D.

Program: Integrated Biomedical Sciences/ Neuroscience

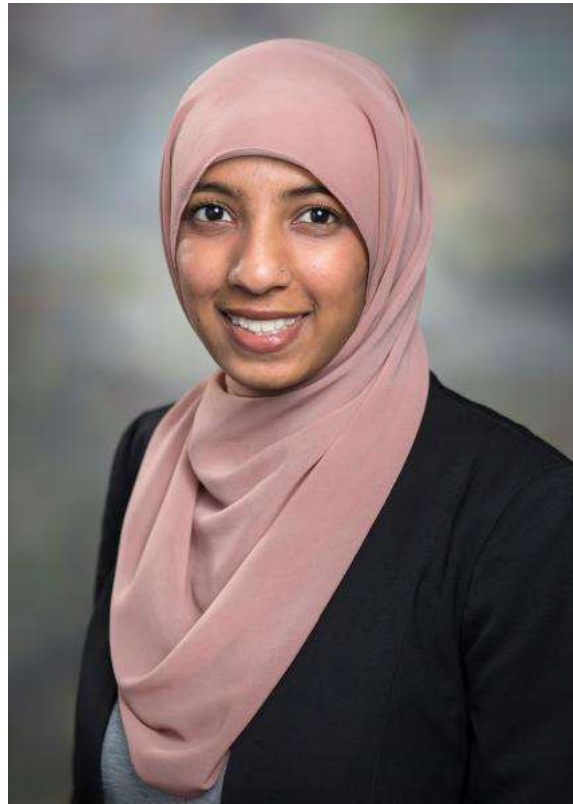
Research Interest: Role of BDNF-TrkB signaling in regulating microglia and neuroinflammation

Mentor: Jason O'Connor, Ph.D., Associate Professor with Tenure, Department of Pharmacology

Research Topic: The Role of BDNF-TrkB signaling in regulating inflammation-induced microglia activation and depressivelike behaviors in a mouse model

Grace graduated from Kent State University in 2014 with a Bachelor of Science in Psychology. She is currently pursuing her PhD in Neuroscience in the Integrated Biomedical Sciences program at UT Health San Antonio in the laboratory of Dr. Jason O'Connor. Her research project focuses on the role of brain-derived neurotrophic factor in mediating the behavioral and metabolic effects of neuroinflammation. In addition to performing her dissertation research, Grace has held student leadership positions as the Neuroscience Representative on the IBMS Student Council and as Treasurer and President of Women in Science: Development, Outreach, and Mentorship (WISDOM)

(July 2018 – June 2019)



Scholar: Sadiya Ahmad

Degree Sought: Ph.D.

Program: IBMS/Cell, Genetics, and Molecular Medicine

Research Interest: Neuroscience, Cell Biology

Mentor: Naomi Sayre, Ph.D.; Assistant Professor, Department of Neurosurgery

Research Topic: Astrocyte Low-Density Lipoprotein Receptor Related Protein 1 and Recovery after Stroke

Sadiya graduated Summa Cum Laude from the University Texas Pan American, now known as the University of Texas Rio Grande Valley, with a Bachelors of Science degree. Sadiya's passion for community engagement began when she joined Teach For America. She taught Chemistry and Physics to an under-served population of high school students during her two-year commitment in the Rio Grande Valley. In an effort to combine her newfound love for teaching and zeal for science, she spent a year at the University of Houston (UH) in a Post-Baccalaureate program while working as a science tutor at the UH Learning Support Services. She joined the laboratory of Dr. Bradley McConnell and studied the role of scaffolding proteins on cardiac signaling and heart disease. Since her acceptance into the Integrated Biomedical Sciences PhD program, Sadiya has joined the laboratory of Dr. Naomi Sayre in the Department of Neurosurgery. The focus of her research is to understand the molecular mechanisms that affect repair and recovery post- stroke. She has a keen interest in studying astrocytes, the primary supporting cell in the brain, and the role they play in regulating homeostasis under normal and pathological conditions. Sadiya was awarded the Translational Science Training TL1 Award in 2017, which allowed her to enhance the quality and scope of the doctoral research by experiencing additional interdisciplinary research training and mentorship in Translational Science. In addition to enhancing her scientific career, Sadiya has simultaneously dedicated time serving the San Antonio community. She has continued her role in Teach For America as an alumna and joined LEE, Leadership for Educational Equity. She attends meetings and workshops to promote and support educational equity throughout San Antonio. She has also been actively involved in community outreach events such as high school science fairs and "science night" at elementary schools. Every year, she leads a workshop for high school science teachers at the VBTA (Voelcker Biosciences Teacher Academy) Annual Conference. Most recently, she was received the Presidential Ambassador of Graduate School of Biomedical Sciences Award.



Scholar: Jennifer Donegan Ph.D.

Department: Pharmacology

Research Interest: Neuroscience, Schizophrenia

Mentor: Daniel J. Lodge, Ph.D; Associate Professor with Tenure, Department of Pharmacology

Research Topic: Contribution of hippocampal projections to discrete symptoms of schizophrenia

Jennifer Donegan graduated from Texas Christian University in 2006 with a BS in Psychology and Advertising. In 2008, she began graduate school at the University of Texas Health Science Center at San Antonio. Working in the laboratory of Dr. David Morilak, she studied the role of neuro-immune signaling in cognitive deficits associated with psychiatric disease. After graduating with a PhD in 2014, she joined Dr. Daniel Lodge's laboratory as a post-doctoral fellow. Currently, she is researching the role of neural circuits in the development of schizophrenia symptoms.



Scholar: Aparna Gorthi Ph.D.

Department: Cell Systems & Anatomy, Greehey Children's Cancer Research Institute

Research Interest: Systems Biology of Cancer, Integrative Cancer Research, Machine learning for Bioinformatics, DNA Damage Response and DNA Repair, Pediatric Cancers, Targeted therapy

Mentor: Yidong Chen, Ph.D., Professor/Co-Director of CTRC Next-Generation Sequencing Shared Resource

Research Topic: Using Deep Neural Networks to Predict Drug Response using Integrated Genome-wide Molecular Profiles of Pediatric Tumors

Aparna Gorthi received her PhD from the Department of Cellular and Structural Biology at the University of Texas Health San Antonio in 2015. Under the guidance of Dr. Alex Bishop, her doctoral work identified aberrant transcription, accumulation of R-loops and altered BRCA1 function in Ewing sarcoma. Prior to entering graduate school, Aparna worked in Philips Research Asia-Bangalore, India as a computational biologist evaluating epigenetic datasets and automating pregnancy risk assessment. Aparna has been highly successful in her research endeavors with several publications (including a first author publication in Nature) and winning several awards including the Susan Naylor award for excellence in postdoctoral studies and the Ann Hollocher and Elkes foundation travel scholarships. She has also been extremely competitive in securing both intramural and extramural funding including fellowships from CPRIT, the NIH and AACR. Aparna is currently pursuing postdoctoral training in computational biology in Dr. Yidong Chen's lab. Her research work is focused on developing machine learning frameworks to predict drug response of pediatric cancers based on molecular profiles.



Scholar: Eithan Kotkowski

Degree Sought: M.D./Ph.D.

Program: Radiology/Neuroscience Imaging

Research Interest: Metabolic Syndrome and Magnetic Resonance Imaging

Mentor: Peter T. Fox, M.D.; Director, Research Imaging Institute

Research Topic: Identifying a neural signature of metabolic syndrome using magnetic resonance imaging

Eithan Kotkowski graduated from the University of Texas at Austin in 2011 where he earned a Bachelor's of Science degree in Psychology with a minor in Neuroscience. After graduating from college, Eithan joined the Texas Teaching Fellows program and worked as a dual-language 2nd grade school teacher at LCPL Nicholas S. Perez Elementary in south Austin, TX. He matriculated to the UT Health San Antonio's MD/PhD program in the summer of 2013 where, aside from doing research, he has held leadership positions in school-wide interdisciplinary organizations such as the Friends of the P.I. Nixon library History of Medicine Society and Frontera de Salud. Eithan has also written the manual and currently teaches the Medical Spanish course affiliated with the Center for Medical Humanities and Ethics. As a 6th year MD/PhD student, Eithan is completing his final year of graduate school in the Radiological Science's Neuroscience Imaging track under the tutelage of Dr. Peter T. Fox at the Research Imaging Institute. His research focuses on using MRI techniques to identify neurobiological biomarkers in brains of individuals diagnosed with or at risk for type II diabetes, metabolic syndrome, and obesity to further characterize the genetic, neurological and cognitive challenges affecting this growing population.



Scholar: Liesl Lawrence

Degree Sought: Ph.D.

Program: Integrated Biomedical Sciences/Cell Biology, and Molecular Medicine

Research Interest: Cancer Biology

Mentor: Alexander J.R. Bishop, D. Phil, CSA/GCCRI

Research Topic: Transcription, R-loops, and RNA Splicing in Ewing Sarcoma

Liesl Lawrence graduated summa cum laude from The Master's University in 2014 with a Bachelor of Science degree in Cell and Molecular Biology. She is currently pursuing her PhD in Integrated Biomedical Sciences in the discipline of Cell Biology, Genetics, and Molecular Medicine at UT Health San Antonio. She is performing her dissertation research in the laboratory of Dr. Alexander Bishop at the Greehey Children's Cancer Research Institute. Her project is focused on understanding and targeting altered regulation of transcription and splicing in Ewing sarcoma. Liesl's long-term research goal is to study molecular mechanisms of pediatric cancer development with the goal of identifying new therapeutic targets.



Scholar: Ryan Reyes

Degree Sought: M.D./Ph.D.

Program: Graduate School of Biomedical Sciences/Infection, Inflammation, and Immunity

Research Interest: Tumor Immunology

Mentor: Tyler J. Curiel, M.D., MPH, Professor, Department of Medicine

Research Topic: Organ-specific effects of tumor PD-L1 in bladder cancer immunotherapy outcomes

Ryan Reyes graduated Magna cum Laude from the University of Arkansas-Monticello in 2014, where he earned Bachelor of Science degrees in both Biology and Chemistry. He then joined the NIH Post Baccalaureate Research Education Program at Yale University where he investigated the interactions of oncogene-specific targeted therapies and immunotherapies in lung cancer. Ryan is now pursuing MD and PhD degrees as a member of the South Texas Medical Scientist Training Program. He is currently training in the lab of Dr. Tyler Curiel and studies how distinct immune microenvironments influence tumor responsiveness to immunotherapy.



Scholar: Gabrille Zuniga

Degree Sought: M.D./Ph.D.

Program: Neuroscience

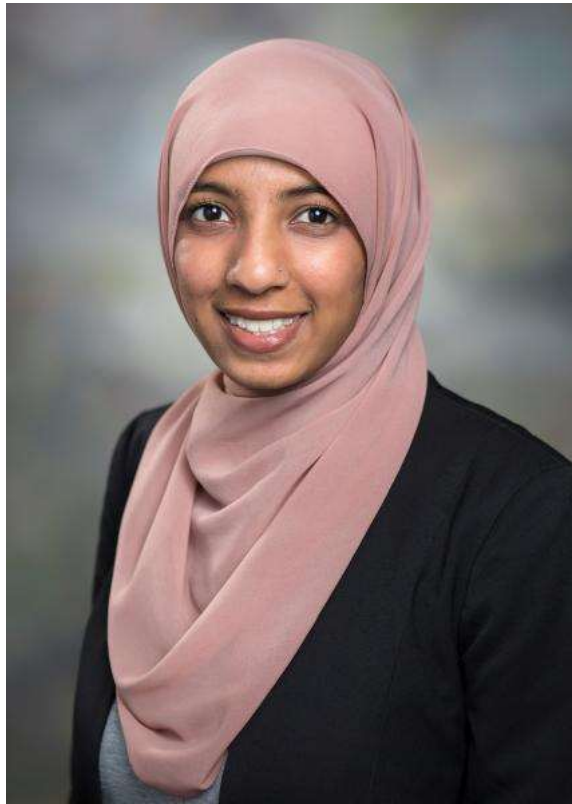
Research Interest: Alzheimer's disease, tauopathy, neurodegeneration

Mentor: Bess Frost, Ph.D., Assistant Professor, Barshop Institute for Longevity and Aging Studies

Research Topic: Deficits in nonsense-mediated RNA decay contribute to neurodegeneration in tauopathy

Gabbe Zuniga was a 2015 Dean's Honored graduate from the University of Texas at Austin, where she received a Bachelor of Science in Honors Biology. As a Dean's and Polymathic scholar at UT Austin, Gabbe completed two honors theses based on her work in Dr. Jon Pierce-Shimomura's lab investigating the therapeutic efficacy of sigma-2-receptor/progesterone receptor membrane component 1-targeted ligands to improve neurodegeneration in a *C. elegans* model of Alzheimer's disease. She then joined the MD/PhD program at the University of Texas Health Science Center to pursue a career as a physician-scientist. Gabbe finished her first two years of medical school and is currently pursuing a PhD in the Neuroscience track of the Integrated Biomedical Sciences program. She is working in Dr. Bess Frost's lab investigating the role of nonsense-mediated RNA decay in the context of neurodegenerative diseases using fly models.

(July 2017 – June 2018)



Scholar: Sadiya Ahmad

Degree Sought: Ph.D.

Program: IBMS/Cell, Genetics, and Molecular Medicine

Research Interest: Neuroscience, Cell Biology

Mentor: Naomi Sayre, Ph.D.; Assistant Professor, Department of Neurosurgery

Research Topic: Astrocyte Low-Density Lipoprotein Receptor Related Protein 1 and Recovery after Stroke

Sadiya Ahmad graduated summa cum laude from the University of Texas Pan American in 2012, where she earned her Bachelor's degree in Biology with a Minor in Chemistry. She joined Teach For America and taught high school chemistry and physics in the Rio Grande Valley for two years. Sadiya began her research career as a volunteer in a cardiovascular lab at the University of Houston completing a senior Honors Thesis, "The Role of Fortilin, an Anti-apoptotic protein, in cardiac contractility". She is now pursuing a PhD in the Cell, Genetics, Molecular Medicine track of the Integrated Biomedical Sciences program. Currently, she works under Dr. Naomi Sayre in the Department of Neurosurgery investigating the molecular mechanisms that contribute to cognitive decline after brain injury.



Scholar: Robert Cole Boggs

Degree Sought: Ph.D.

Program: UTHSA/Radiological Sciences/Medical Physics Imaging Diagnostics

Research Interest: Traumatic Brain Imaging & Magnetic Resonance Imaging

Mentor: Geoffrey D. Clarke, Ph.D; MRI Division Chief, Radiology

Research Topic: Establishing resting state functional MRI and magnetic resonance spectroscopy as biomarkers for traumatic brain injury

Robert Cole Boggs graduated from Austin Peay State University in 2013 with a Bachelor of Science in Physics. Robert then joined UT Health Science Center San Antonio's Medical Physics PhD program. He has been working in the Research Imaging Institute (RII) and Texas Biomedical Research Institute (TBRI) conducting research in multi-parametric quantitative MRI measurements to study neuroprotective treatments, predictive biomarkers, cerebral blood flow, cerebrovascular reactivity, and structural/functional deficits associated with traumatic brain injury (TBI). He has produced two publications and four poster presentations for conferences from his research. Currently, Robert is working at the RII focused on establishing functional and spectroscopy imaging modalities to use as biomarkers for TBI for his thesis.



Scholar: Rebecca Lynn Bricker

Degree Sought: Ph.D.

Program: IBMS/Cell, Genetics, and Molecular Medicine

Research Interest: Stem Cell Differentiation

Mentor: Tiziano Barberi, ScD PhD; Southwest Primate Research Center

Research Topic: Derivation of lens and olfactory placodes from human pluripotent stem cells

Rebecca Bricker graduated from Wright State University in 2010 with a Bachelor of Science in Biological Sciences. During her undergraduate studies, she was selected for the Southwest Ohio Council for Higher Education (SOCHE) internship, where she researched the optical and electrical properties of cholesteric liquid crystals. Her research contributed to seven co-author publications. She then joined a biomedical research lab her senior year where she studied caspase inhibition and cell death in leukemic T-cell lymphoblast line and received the Undergraduate Research Opportunities Scholarship and the merit-based Choose Ohio First Scholarship. She continued her studies, earning her Master of Science in Molecular Biology in 2012. Rebecca is currently enrolled in the Integrative Biomedical Science PhD program at UT Health Science Center San Antonio conducting her research under the supervision of Dr. Tiziano Barberi at Texas Biomedical Research Institute. She is studying human pluripotent stem cell (hPSC) differentiation and purification through cell sorting; specially working toward generating lens epithelial cells and olfactory neurons from hPSCs to understand the development of the ocular lens and nasal tissue. Her long-term goal is to become a translational scientist in the field of stem cell biology where she hopes to design cell-based therapies using hPSCs in order to treat deteriorated and diseased tissues.



Scholar: Michael Guderyon

Degree Sought: Ph.D.

Program: IBMS - Biology of Aging

Research Interest: Stem Cell Rejuvenation, Aging

Mentor: Senlin Li, M.D. Professor of Infectious Disease

Research Topic: Reversing Age-related Decline Using Non-cytotoxic Transplantation of Young Hematopoietic Stem Cells

Michael Guderyon graduated from the University of Louisiana at Lafayette in 2012 with a Bachelor of Science in both Microbiology and Chemistry. He then completed a Master of Science in Biochemistry and Molecular Biology from the University of Arkansas for Medical Sciences in 2015. His thesis research focused on helicase functions of the Hepatitis C virus. He is currently pursuing his PhD in the Integrative Biomedical Science program within the Biology of Aging track, while maintaining his service as a member of the Air Force Reserves. His research is focused on rejuvenating the hematopoietic system using novel pre-conditioning regimes.

(July 2016 – June 2017)



Scholar: Ahsan Choudary

Degree Sought: PhD

Program: UTHSCSA/UTSA/UT College of Pharmacy/UT School of Public Health Joint Program in Translational Science

Research Interest: Molecular epidemiology of chronic, metabolic diseases

Mentor: Laura Cox, Ph.D.; Scientist and Vice Chair, Department of Genetics, Texas Biomedical Research Institute

Research Topic: Investigation of volatile organic compounds in breath as predictors of heart abnormalities

Ahsan Choudary graduated from Texas Lutheran University in 1999 with a Bachelor of Science degree in molecular biology. From 2000 to 2009, he worked at UTHSCSA across several labs and departments doing diverse research in areas including neonatology, pancreatic and breast cancers, diabetes, and obesity, where he was co-author on multiple publications. Concurrently, he served in the state military and completed his Master of Public Health degree, with a concentration in epidemiology, from the UT School of Public Health. From 2009 to 2010, Ahsan did clinical research as a U.S. Air Force contractor at Wilford Hall Medical Center, and from 2010 to 2014, he did osteoarthritis and metabolic disease research in non-human primates at Texas Biomedical Research Institute. He began the Translational Science Ph.D. program in 2014 and was selected as a UTHSCSA Presidential Ambassador Scholar in 2016. Ahsan has strong interests in science policy development and public-private research collaborations and would like to help build the biotech industry in San Antonio.



Scholar: Trevi Ann Mancilla

Degree Sought: M.D./Ph.D.

Program: MGP/Physiology

Research Interest: Pathological mechanisms of cardiac fibrosis

Mentor: Greg Aune, MD, PhD; Greehey Children's Cancer Research Institute

Research Topic Characterization of the direct and indirect effects of doxorubicin on cardiac fibroblasts and fibrotic pathways.

Trevi graduated from Wellesley College in 2007, where she earned a bachelor's degree in biochemistry and religion. Trevi began her research career as a volunteer in the lab of Merry Lindsey, PhD at the UT Health Science Center San Antonio. She transitioned to the position of research assistant where she managed two separate projects, both resulting in first author papers. In the fall of 2012 she matriculated into the UTHSCSA MD/PhD program. Since beginning the graduate school in the fall of 2014, Trevi has won multiple travel awards to present her work at conferences. Trevi's long-term research goals will be influenced by her choice of medical specialty.



Scholar: Milos Marinkovic

Degree Sought: Ph.D.

Program: Joint Biomedical Engineering Program

Research Interest: Molecular epidemiology of chronic, metabolic diseases

Mentor: Xiao-Dong Chen, MD, PhD, Professor of Comprehensive Dentistry

Research Topic: Re-education of Adipose-derived Stem Cells for Enhancing Osteogenesis

Milos graduated from the University of Texas at Austin in 2011, where he earned a B.S. in Biochemistry with a Distinction in Undergraduate Research. Following graduation, he went on to research carbon nanostructures at a materials engineering firm. His interest in the interface of cellular biology and materials science led him to pursue a PhD in Biomedical Engineering at UTHSCSA. His thesis research focuses on the interaction of stem cells with tissue-specific extracellular matrices as well as synthetic microenvironments. At the time of starting the TST TL1 program, Milos produced several publications and patents related to both stem cell science and nanomaterials. He is also passionate about the potential of science to transform communities and co-founded a non-profit aimed at supporting the growth of biotechnology in San Antonio. In September 2016, Milos was awarded a Ruth L. Kirschstein National Research Service Award Individual Predoctoral Fellowship (NIH F31).



Scholar: Rafael Veraza Bravo

Degree Sought: Ph.D.

Program: UTHSCSA/UTSA/UT College of Pharmacy/UT School of Public Health Joint Program in Translational Science

Research Interest: Preventing brain damage after stroke

Mentor: Mark Shapiro, Ph.D., Professor of Physiology

Research Topic: Novel Therapeutics in Prevention and Treatment of Traumatic Brain

Rafa J Veraza, originally from Mexico City, has spent most of his early career working with non-profit organizations and international organizations such as the World Health Organization, UNICEF, Rotary International, and Caritas Internationalis. He is a graduate from the Honors College at the University of Texas at San Antonio with a degree in Biology where he focused on Neurobiology studies. He was the recipient of a Rotary International Ambassadorial Scholarship to represent Rotary International in Botswana and Southern Africa after his undergraduate degree. While in Botswana he worked with the World Health Organization and Baylor College of Medicine on several HIV public health projects. After completing one year in Botswana he was the recipient of an NIH Fogarty Fellowship to study his Masters in Public Health at Emory University. After his studies, his devotion for serving others led him to participate as a consultant for UNICEF and the World Health Organization to work with the Global Polio Eradication Initiative in Angola. Rafa currently resides in San Antonio with his wife Lisa, he is pursuing a PhD in Translational Science at the Health Science Center focused on novel therapeutics for the treatment and prevention of brain damage and stroke related illness. In his spare time, he is passionate about entrepreneurship, helping translate discoveries from the lab into patients quicker and help grow the biotech industry in San Antonio, TX.

(July 2015 – June 2016)



Scholar: Travis J. Block

Degree Sought: Ph.D.

Program: Joint Biomedical Engineering Program

Research Interest: Stem Cells and Regenerative Medicine

Mentor: Xiao-Dong Chen. MD, PhD, Professor of Comprehensive Dentistry

Research Topic: Rescuing the regenerative potential of human mesenchymal stem cell populations from elderly donors

Travis graduated from the University of Rochester in 2012, where he earned a Bachelor's Degree in Biomedical Engineering. While at the University of Rochester, he teamed with four peers to create and commercialize adaptive cycling equipment for individuals with physical limitations in conjunction with a project for his Biomedical Engineering degree. This experience ultimately lead him to the University of Texas Health Science Center at San Antonio to become involved in regenerative medicine research. At entry into the TST TL1 program, Travis had authored several publications, including two manuscripts and over a dozen abstracts. He had also earned several awards, including three 1st place scholarship awards at various competitions and the Student of Da Vinci Award from the National Medical Student Society. His doctoral research aims to better understand and address the age-related decline in the quality and quantity of stem cells in the elderly to find a mechanism to rejuvenate regenerative capabilities. Following postdoctoral training, his long-term goal is to become an independent investigator and leverage his engineering and scientific knowledge to improve healthcare.



Scholar: Elizabeth Ann Fucich

Degree Sought: Ph.D

Program: IMGP/Neuroscience Track

Research Interest: Stress-related neuropsychiatric disorders

Mentor: David Morilak, PhD, Professor, Department of Pharmacology

Research Topic: Medial prefrontal cortical mechanisms of behavioral therapy

Elizabeth graduated from the University of Southern Mississippi in 2012 with a Bachelor of Science degree in Biochemistry. Interested in how behavior is explained at the molecular level, she conducted her honors thesis research in stress and drug abuse at the University of Southern Mississippi's Behavioral Neuroscience Laboratory. Her research experience fueled her passion to improve quality of life through translational neuroscience, with a focus on the study of stress-related psychiatric illness. Since joining the UT Health Science Center, Elizabeth has presented her work at national conferences as well as state and local meetings, has submitted a co-authored manuscript, and is preparing to submit a first-author manuscript. Prior to becoming a TST TL1 Scholar, she received the IMGP Dean's Excellence Award and was supported by a NIH Neuroscience Early-Stage Training Grant (T32NS082145). Elizabeth also serves as the President of the Graduate Student Association at the Health Science Center. Her ultimate goal is to be an independent scientist and contribute to the advancement of mental health by developing better treatments for mood and anxiety disorders.



Scholar: Mariam Ishaque

Degree Sought: MD./PhD.

Program: Radiological Sciences/Neuroscience Imaging

Research Interest: Neurodevelopmental disorders and Neuroimaging

Mentor: Peter Fox, MD; Director, Research Imaging Institute

Research Topic: Autism spectrum disorders/structural and functional connectivity analysis in autism spectrum disorders using MRI

Mariam graduated from Southern Methodist University in 2011, where she earned Bachelor's degrees in Physics and Spanish. She joined the UT Health Science Center in 2011 as a medical student, and after some exposure to research, applied and was accepted into the MD/PhD program, entering into the Radiological Sciences graduate program, Neuroscience Imaging track. Mariam's curiosity of fundamental sciences and humanitarian work began at an early age, manifesting and ultimately steering her into the study of medicine and research, with an emphasis on cognitive neuroscience. Since beginning her studies at the UT Health Science Center, Mariam has produced several publications, including three abstracts and two articles (in progress) as first author. She also serves as a student representative for the Health Science Center's Liaison Committee on Medical Education, Student Council Class Representative for the MD/PhD program, and Student Government Association for the Health Science Center Graduate School. Her overall career focus is to lead research that will reduce the burdens of neurological disease.



Scholar: Huynh Nga "Nancy" Nguyen

Degree Sought: Ph.D.

Program: IMGP/Biochemistry

Research Interest: Nutrition in cardiovascular disease and diabetes

Mentor: Reto Asmis, Ph.D.. Professor and Senior Associate Dean: Graduate School of Biomedical Sciences

Research Topics: Mechanism of action of ursolic acid metabolite A in protecting monocytes from metabolic stress-induced dysfunction

Nancy graduated in 2010 from Trinity University with a Bachelor of Science in Biology and Bachelor of Art degree in Art History. She also attended the University of the Incarnate Word and graduated in 2012 with a Master of Science degree in Nutrition Science. Before joining the laboratory of Dr. Reto Asmis at the UT Health Science Center, Nancy was studying the translational benefits of nutrition-based research in reducing childhood obesity. She has also worked with the Texas Education Agency on BIENESTAR, a program providing healthy meals to elementary school children. Working with BIENESTAR allowed Nancy to begin translational science research in obesity and diabetes. At the time of selection into the TST TL1 Program, Nancy had produced two publications and three abstracts, two as first author, and received various academic and professional honors including Finalist for the Emerging Leaders in Nutrition Science Award at the 2015 Experimental Biology Meeting. Her research aim is to explore the mechanism of action of Ursolic Acid Metabolite A, a phytochemical that is a potential therapeutic agent for atherosclerosis. Nancy's goal is to become an independent researcher and mentor young scientists.

(July 2014 – June 2015)



Scholar: Deana Apple

Degree Sought: Ph.D.

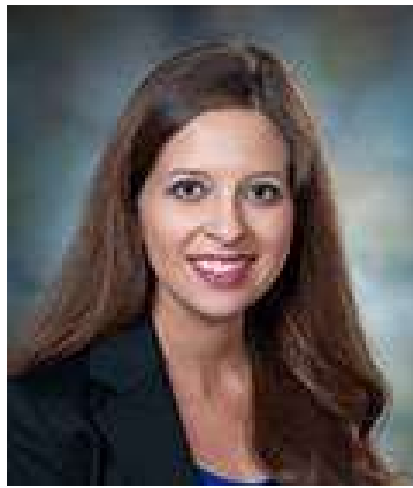
Program: IBMS/Neuroscience

Research Interest: Neuroscience, aging, and neurodegenerative disease

Mentor: Erzsebet Kokovay, Ph.D., Assistant Professor, Department of Cellular & Structural Biology

Research Topic: Calorie restriction as an anti-aging mechanism: focus on neural stem cells in the subventricular zone

Deana graduated from Centenary College of Louisiana in 2008, where she earned a Bachelor's Degree in Neuroscience. She then entered the UT Health Science Center at San Antonio in 2010 as a PhD student to continue her study of Neuroscience, and she was one of five students in her incoming class to receive the Graduate Dean's Excellence Award. At entry into the TST TL1 program, Deana had authored several publications, including two manuscripts and eight abstracts, and she was the recipient of two first place poster awards and two travel awards. Her own personal experiences have inspired her to pursue a career in a field of research that could create a better understanding of the effects of aging on the brain. Toward the long term goal of improving quality of life in an aging population, Deana's current research focuses on investigating the effects of calorie restriction on neural stem cells in the aged subventricular zone (SVZ) of the murine brain. Following postdoctoral training, her long-term goal is to become an independent investigator in the field of neuroscience and aging.



Scholar: Bianca Gonzales Cerqueira

Degree Sought: Ph.D.

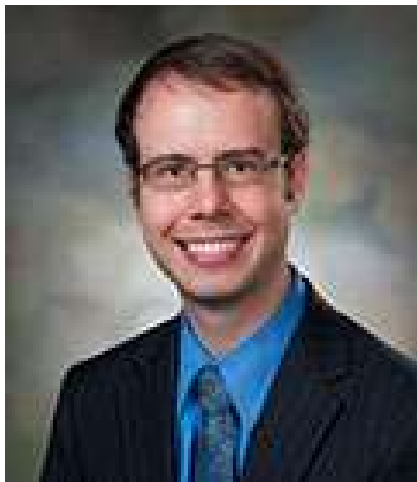
Program: UTHSCSA-UTSA Joint Biomedical Engineering Program

Research Interest: Application of MRI to study stroke and chronic intermittent hypoxia

Mentor: Timothy Duong, Ph.D., Stanley I. Glickman, MD, Chair in Ophthalmic Research and Professor, Department of Ophthalmology and Radiology, and Glenn Toney, Ph.D., Professor, Department of Physiology

Research Topic: MRI of transient ischemia in rats exposed to chronic intermittent hypoxia

Bianca graduated from the University of Maryland at College Park in 2008 with a Bachelor of Science degree in Physiology and Neurobiology. She graduated from the Gemstone honors program that included a collaborative research project on alcohol use in undergraduate students. Additionally, Bianca worked as a Student Researcher at Walter Reed Army Institute of Research in Silver Spring, MD, where she investigated experimental blood additive solutions. After graduation she worked as a Molecular Biologist at QualTex Laboratories, testing blood for infectious pathogens. Since joining the UTHSCSA-UTSA Joint Biomedical Engineering Program in 2011, she has authored five abstracts, four as first author, and four abstracts for poster presentations, all of which earned travel awards. Bianca is a Valero Research Scholar and a NACME/Alfred P. Sloan Foundation Research Fellow. Her current research aims to investigate effects of chronic intermittent hypoxia in rats, a model for the hypoxemias of sleep apnea, on transient cerebral ischemia. Bianca's ultimate goal is to work with a team of clinicians and scientists to develop methods to minimize ischemic brain injuries in animals and humans.



Scholar: Justin Michael Drerup

Degree Sought: M.D./Ph.D.

Program: IBMS/Cell and Molecular Biology

Research Interest: Cancer Immunology

Mentor: Tyler Curiel, MD, MPH, Daisy M. Skinner President's Chair in Cancer Immunology Research and Professor, Department of Medicine

Research Topic: Defining regulatory T cell depletion agent mechanisms to help optimize cancer immunotherapy

Justin graduated from the University of Texas at Dallas in 2010, where he earned a Bachelor of Science degree in Biochemistry. He joined the UT Health Science Center in 2011 as a student in the MD/PhD program, and he completed the first two years of medical school before entering the IBMS/Cell and Molecular Medicine Track in the Graduate School of Biomedical Sciences. Justin was first introduced to medicine after observing physicians in a clinical environment while volunteering at a local hospital, and he had the opportunity to develop an interest in biomedical science while studying the molecular basis of neurological and psychiatric disorders as an undergraduate fellow at UT Southwestern Medical School in Dallas in 2009. Since beginning his studies at the UT Health Science Center, Justin has broadened his research interests from neuroscience to cancer. Justin has produced several publications, including two journal articles and six abstracts for poster sessions. His overall career focus is to investigate new therapies for cancer and to become a skilled and independently-funded physician-scientist in medical oncology.



Scholar: Stacey Stahl

Degree Sought: Ph.D.

Program: IBMS/Microbiology and Immunology

Research Interest: Drug and Vaccine Development

Mentor: Philip T. LoVerde, Ph.D., Professor, Departments of Biochemistry and Pathology

Research Topic: Characterization of schistosome sulfotransferase and its interactions with anti-schistosomal drugs

Stacey graduated in 2009 from the University of Rochester with a Bachelor of Science degree in Microbiology with Distinction in Research. Before joining the laboratory of Dr. Philip LoVerde at the UT Health Science Center, Stacey worked in a variety of laboratories where she learned techniques in evolutionary biology with Dr. Jack Werren, basic biochemistry with Dr. Timothy Machonkin, microbiology with Dr. Wolfgang Haas, and stem cell biology with Dr. Catherine Ovitt. At the time of selection into the TST TL1 Program, Stacey had produced two publications, both as first author, and was the recipient of a scholarship from the Center for Excellence in Infectious Genomics (CEIG) in 2011. Her research interests include reengineering the drug oxamniquine for use against the three major human schistosome parasite species. Stacey's goal is to become an independent investigator studying vaccine and drug development for neglected tropical diseases.

2014 Scholars (January – December 2014)



Scholar: Vinh Dao

Degree Sought: M.D./PhD

Program: IBMS/Microbiology & Immunology

Research Interest: Tumor Immunology

Mentor: Tyler Curiel, M.D., M.P.H., Daisy M. Skinner President's Chair in Cancer Immunology Research and Professor, Department of Medicine/Hematology and Medical Oncology

Research Topic: Oral rapamycin (eRapa) prevents carcinogen-induced dermal carcinogenesis through immune mechanisms

Vinh graduated from the University of California Berkeley in 2006, where he earned a Bachelor's Degree in Molecular and Cell Biology with an Immunology emphasis. From 2006-2010, Vinh worked under the mentorship of Dr. Lawrence Fong at the University of California San Francisco, where he gained first-hand experience in clinical trials of novel immune-enhancing therapies being conducted on patients with prostate cancer. This experience sparked his interest in tumor immunology, the science of understanding how the immune system interacts with cancer cells, and the development of therapies that use the patient's own immune system to fight disease. With this research interest, Vinh entered the UT Health Science Center at San Antonio in 2010 as a MD/PhD student to study medicine and tumor immunology. At entry into the TST TL1 program, Vinh had authored three research publications and six abstracts and received a grant from the American Federation for Aging Research. Vinh's current research under the mentorship of Dr. Tyler Curiel, focuses on understanding how the drug rapamycin modulates the immune system to prevent cancer. Following predoctoral research training, Vinh will complete his medical school education. His long-term goal is to become an independent physician-scientist in oncology to advance clinical care and novel treatments for cancer patients.



Scholar: Norberto Gonzalez Juarbe

Degree Sought: Ph.D.

Program: IBMS/Microbiology and Immunology

Research Interest: Bacterial pneumonia and host immunological response

Mentor: Molly A. Bergman, Ph.D., Assistant Professor, Department of Microbiology and Immunology

Research Topic: *Serratia marcescens* hemorrhagic pneumonia / A small animal model of *Serratia marcescens* nosocomial pneumonia: Importance of the bacterial hemolysin/cytolysin and its mechanisms of action

Norberto graduated from the University of Puerto Rico at Arecibo in 2010 with a Bachelor's degree in Microbiology. While in undergraduate studies, he worked closely in an academic research environment to study astrobiology, a field that combines astronomy and biology. From that experience, he was able to attend the International Year of Astronomy (IYA) as a selected National Aeronautics and Space Administration (NASA) student ambassador, as well as to participate as a NASA ambassador at the United Nations Education, Scientific and Cultural Organization (UNESCO) in Paris. He also attended the Society of Toxicology conference and visited two NASA centers where he was able to present his research. After a personal experience with a family member, Norberto decided to further his graduate studies and entered the UT Health Science Center in 2011 as a doctoral student in the IMGP program's Microbiology and Immunology track. Since joining the UT Health Science Center he has authored two publications and presented his research at a number of meetings. Norberto's current research involves the study of host-pathogen interactions and the virulence mechanisms of bacteria, in preparation for a career as an independent translational investigator.



Scholar: Heather Hambright

Degree Sought: Ph.D.

Program: IBMS/Cancer Biology

Research Interest: Oxidative stress signaling; melanoma; strategies for overcoming chemotherapeutic resistance

Mentor: Rita Ghosh, Ph.D., Associate Professor, Department of Urology and Pharmacology

Research Topic: Targeting pro-survival p62 as an anti-melanoma strategy

Heather graduated from UT Austin in 2007 where she earned a Bachelor of Arts Degree in Geography and Biology. She joined the UT Health Science Center in 2011 as a student in the IMGP program, focusing on Cancer Biology. Before furthering her graduate studies, she was introduced to molecular aspects of cancer research as a Research Assistant in Dr. Pratap Kumar's laboratory in the UTHSCSA Department of Urology. After developing her own interest in oxidative damage signaling in melanoma, she sought to design and implement her own research to positively impact cancer patients' health. Since beginning her studies at the UT Health Science Center, Heather has transitioned to Dr. Rita Ghosh's laboratory, where she studies chemoprevention in a melanoma model. Heather has produced six research articles, two as first author, and nine abstracts, three as first author. She has presented her research in a number of professional venues, both as a research assistant and as a graduate student. Her current research focus is to investigate the differential role of autophagy protein p62 in normal melanocytes and malignant melanoma cells. Her career goal is to become an established translational scientist.



Scholar: Justin Long

Degree Sought: Ph.D.

Program: UTHSCSA-UTSA Joint Biomedical Engineering Program

Research Interest: Neuroimaging and Traumatic Brain Injury (TBI)

Mentor: Timothy Q. Duong, Ph.D., Professor, Department of Ophthalmology, Radiology, and Physiology

Research Topic: Multimodal MRI characterization of TBI lesion progression and neuroprotective effects of methylene blue

Justin graduated in 2005 from the University of Texas at San Antonio with a Bachelor of Science degree in Mechanical Engineering. Before joining the UT Health Science Center, Justin worked extensively with KCI Medical in research and development, starting as an undergraduate intern, followed by a position as a Co-op student until he finished his degree, and finally as a full member of the research staff. After six years with KCI Medical, Justin was inspired to continue his education to further his knowledge about the use of diagnostic imaging techniques to investigate traumatic brain injury (TBI), combining his skills in science and engineering. His research interests include the application of novel imaging techniques to more effectively diagnose, predict outcomes, and examine the efficacy of new treatments following TBI. At the time of selection into the TST TL1 Program, Justin had produced several publications, two as first author, 19 conference papers, including one international talk, numerous poster presentations, and 21 issued U.S. patents. Justin's goal is to become a leading investigator in industry where he can apply his years of product development experience, along with the research techniques acquired at UTHSCSA, to pursue new therapies and treatments to improve the quality of life of others.