



COLLEGE OF  
SCIENCE & ENGINEERING 

and



JOHN V. ROACH  
HONORS COLLEGE



# Honors Research Forum

**26 March 2021**

**1- 5 PM**

# Program

<b>Biology</b>		<b>1:00</b>	<b>1:05</b>	<b>Welcome - Dr. Giri Akkaraju (Moderator)</b>		
	<b>Session 1</b>		<b>1:05</b>	<b>1:20</b>	Ali, Iman Jameela <i>Advisor: McGillivray, Shauna</i>	Mechanisms of Zinc Oxide Antibacterial Activity
			<b>1:20</b>	<b>1:35</b>	Alley, Carly J <i>Advisor: Chumley, Michael</i>	Effects of Potent Antioxidant Compounds on Pro-inflammatory Cytokine Production in BV2 Microglial Cells
			<b>1:35</b>	<b>1:50</b>	Boisvert, Brooke Elizabeth <i>Advisor: Boehm, Gary</i>	The Impact of Early-Life Stress on Inflammation and Epigenetics in Adulthood
			<b>1:50</b>	<b>2:05</b>	Hembrough, Michael Thomas <i>Advisor: Drenner, Ray</i>	Impact of Season on Methylmercury Contamination of Tetragnathid Spiders on the Trinity River
			<b>2:05</b>	<b>2:20</b>	Rolfe, Ian M <i>Advisor: Chumchal, Matt</i>	Tetragnathid Spiders as Sentinels for Mercury Contamination in the Trinity River
			<b>2:20</b>	<b>2:35</b>	Shorow, Andrew Paxton <i>Advisor: Chumchal, Matt</i>	The Effect of Distance from the Shoreline of the Trinity River on Methylmercury Contamination in Tetragnathids
			<b>2:35</b>	<b>2:50</b>	<b>Break</b>	
	<b>Session 2</b>		<b>2:50</b>	<b>3:05</b>	James, Jacob Jeffery <i>Advisor: Hale, Amanda</i>	Use of DNA Barcoding to Identify Unknown Bats
			<b>3:05</b>	<b>3:20</b>	Joyce, Jackson Thomas ("Jack") <i>Advisor: Hale, Amanda</i>	Assessing Genetic Diversity in Northern Yellow Bats Killed at Wind Energy Facilities
			<b>3:20</b>	<b>3:35</b>	CANCELLED	
			<b>3:35</b>	<b>3:50</b>	Martin, Davis Edward <i>Advisor: Stewart, Mikaela</i>	Assessing the Effects of Inherited Mutations on PALB2 Structure and Function
			<b>3:50</b>	<b>4:05</b>	Ajgaonkar, Ryan K <i>Advisor: Akkaraju, Giridhar</i>	An NGQD-Based Diagnostic for Pancreatic Cancer
			<b>4:05</b>	<b>4:20</b>	Lynn, Jake Michael <i>Advisor: Akkaraju, Giridhar</i>	Effect of Macrocyclic Molecules on Cell Survival and Radical Oxygen Species Production In FRDA and HT22 Cells

**To learn more about research in Biology, register before session:**

<https://tcu.zoom.us/j/91601636574?pwd=ZXFKa1JQSzh2dVVVQnQwRmU0aWFHZz09>

Password: GoFrogs!

# Program

<b>Chemistry/Biochemistry</b>		<b>1:00</b>	<b>1:05</b>	<b>Welcome - Dean Phil Hartman (Moderator)</b>		
	<b>Session 1</b>		<b>1:05</b>	<b>1:20</b>	Segura, Carolina <i>Advisor: Montchamp, Jean-Luc</i>	Synthesizing a Vaccine for the Treatment of Addiction to the Fentanyl Opioid
			<b>1:20</b>	<b>1:35</b>	Veals, Diandria P <i>Advisor: Green, Kayla</i>	Synthesis of a 4-Iodo Substituted Pyridinophane for Fundamental Characteristic Analysis
			<b>1:35</b>	<b>1:50</b>	Edwards, Lauren Marie <i>Advisor: Dzyuba, Sergei</i>	Environment-sensitive Probes Based on Squaric Acid Scaffold
			<b>1:50</b>	<b>2:05</b>	Purvis, Margery Elayne ("Maggie") <i>Advisor: Sherman, Ben</i>	Sn3O4 @ TiO2 Core-shell Surfaces Prepared by Liquid Phase Deposition for Photoelectrochemical Cell Applications
			<b>2:05</b>	<b>2:20</b>	La, Nghi Nguyen Van <i>Advisor: Coffey, Jeff</i>	The Fabrication of New Light-Emitting Diodes Based on Perovskite/Porous Silicon-Containing Materials.
			<b>2:20</b>	<b>2:35</b>	Hoffer, Emily Claire <i>Advisor: Green, Kayla</i>	Serendipitous Inorganic Helix Formation From a pH-Responsive Inorganic Complex
			<b>2:35</b>	<b>2:50</b>	<b>Break</b>	
	<b>Session 2</b>		<b>2:50</b>	<b>3:05</b>	Sherman, Emily Rose <i>Advisor: Montchamp, Jean-Luc</i>	Practical Synthesis of Alkenyl Phosphorus Compounds
			<b>3:05</b>	<b>3:20</b>	Weresh, Henry ("Hank") <i>Advisor: Minter, David</i>	Synthesis of 1,1'-Dideaza-Quinine: A Proof of Concept
			<b>3:20</b>	<b>3:35</b>	Nguyen, Nam <i>Advisor: Green, Kayla</i>	Evaluation of the Therapeutic Efficacy of Small Pyridine-containing Molecules for Treatment of Neurodegenerative Diseases
			<b>3:35</b>	<b>3:50</b>	Sadagopan, Nishanth Strong ("Nishu") <i>Advisor: Green, Kayla</i>	Enhancing the Therapeutic Potential of Heterocyclic Ligands for Treating Alzheimer's Disease

To learn more about research in Chemistry/Biochemistry, register before session:

<https://tcu.zoom.us/j/97270448019?pwd=SjVSRUk2eU9hYURhdUNEU1R3REFrUT09>

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# Program

<b>Psychology</b>		<b>1:00</b>	<b>1:05</b>	<b>Welcome - Dr. Anna Petursdottir (Moderator)</b>		
	<b>Session 1</b>		<b>1:05</b>	<b>1:20</b>	Benson, Alexis Charlene ("Allie") <i>Advisor: Ekas, Naomi</i>	Employment Decisions in Mothers of Children with Autism Spectrum Disorder
			<b>1:20</b>	<b>1:35</b>	Curran, Rebecca Ann ("Becca") <i>Advisor: Hargis, Mary</i>	Investigating Metacognitive Biases: Connections Between Fluency Effects and Beliefs in Individualized Learning Styles
			<b>1:35</b>	<b>1:50</b>	Davis, Nathania G <i>Advisor: Centanni, Tracy</i>	Influence of Socioeconomic Status on Rhythm Perception in Children With and Without Dyslexia
			<b>1:50</b>	<b>2:05</b>	Hernandez, Christian J. <i>Advisor: Call, Casey</i>	The Trajectory of Trauma-Informed Principles Across Child Welfare Organizations
			<b>2:05</b>	<b>2:20</b>	Lindsey, Morgan Alexis <i>Advisor: Call, Casey</i>	Evaluation of Trauma Informed Classroom Teacher Training
			<b>2:20</b>	<b>2:35</b>	Nguyen, Quynh Dang Nhu <i>Advisor: Papini, Mauricio</i>	Effects of Neural Manipulation of the Nucleus Accumbens in Reward Loss
			<b>2:35</b>	<b>2:50</b>	<b>Break</b>	
	<b>Session 2</b>		<b>2:50</b>	<b>3:05</b>	Aydelott, Payton Brooke <i>Advisor: Tauber, Uma</i>	Self-testing During Concept Learning and Its Impact on Students' Study Order Choices
			<b>3:05</b>	<b>3:20</b>	Westerfield, Cullen James <i>Advisor: Petursdottir, Anna</i>	The Emergence of Derived Stimulus Relations using Exclusively Visual Mediation by Eliminating Verbal Mediation
			<b>3:20</b>	<b>3:35</b>	Gonzales, Keana Isabela <i>Advisor: Ekas, Naomi</i>	Ethnic Differences in Parents' Ability to Identify Internalizing Symptoms in their Children: Does Their Ability to Identify Symptoms in Others Matter?
			<b>3:35</b>	<b>3:50</b>	Juneau, Truley Alyse <i>Advisor: Tauber, Uma</i>	The Impact of Attorney's Presentation of Opening Statements on Juror Decisions
			<b>3:50</b>	<b>4:05</b>	Smith, Carson Jeffrey <i>Advisor: Petursdottir, Anna</i>	Foreign Language Vocabulary Instruction
			<b>4:05</b>	<b>4:20</b>	Yraguen, Malia F <i>Advisor: Centanni, Tracy</i>	The Role of Multi-scripturalism on Novel Orthography Learning
		<b>4:20</b>	<b>4:35</b>	Buchanan, Olivia Jade <i>Advisor: Ekas, Naomi</i>	Family Functioning and Parent Mental Health in Families of Color with Children with Autism Spectrum Disorder During the COVID-19 Pandemic and Racial	

To learn more about research in Psychology, register before session:

<https://tcu.zoom.us/j/96641269235?pwd=OTFJT2EwdHRKejlrMIZuMDVURU0ZLUT09>

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# Program

<b>Nutrition / Math / Physics / Environmental Science</b>		<b>1:00</b>	<b>1:05</b>	<b>Welcome - Associate Dean Dick Rinewalt (Moderator)</b>		
	<b>Session 1</b>		<b>1:05</b>	<b>1:20</b>	Spears, Olivia Rose Moran <i>Advisor: Willis, Jada</i>	Registered Dietitians' Recommendations for Nutrition? Education and Interprofessional Education in Medical School Curriculum
			<b>1:20</b>	<b>1:35</b>	Whitcher, Madyson Maya ("Mady") <i>Advisor: VanBeber, Anne</i>	The Use of a Culinary Medicine Course to Improve Nutrition Knowledge, Attitudes, and Behaviors of Teachers in the K-12 Setting
			<b>1:35</b>	<b>1:50</b>	Balters, Jason Travis <i>Advisor: VanBeber, Anne</i>	Determination of Caffeine Use and its Effects on University Students
			<b>1:50</b>	<b>2:05</b>	Burgess, Alexandra Claire ("Alex") <i>Advisor: VanBeber, Anne</i>	University Students' Knowledge and Attitudes of a Whole-Foods, Plant-Based Diet
			<b>2:05</b>	<b>2:20</b>	Nagel, Lauren Elizabeth <i>Advisor: Tomlin, Drew</i>	Optimal Strategies for 'The Settlers of Catan'
			<b>2:20</b>	<b>2:35</b>	Lyle, Veronica Jane <i>Advisor: Naumov, Anton</i>	pH-based Cancer Detection by Graphene Quantum Dots
		<b>2:35</b>	<b>2:50</b>	<b>Break</b>		
	<b>Session 2</b>		<b>2:50</b>	<b>3:05</b>	Lawton, Katherine Nicole ("Katie") <i>Advisor: Bennett, Victoria</i>	Premature Detachment of Radio-Transmitters Used on Bats

To learn more about research in Nutrition, Math, Physics, and Environmental Sci., register before session:

<https://tcu.zoom.us/j/91231512957?pwd=NWVYemtweWRMY21VT0ZCL1c5eEdidz09>

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# Program

## Acknowledgements

**Production Assistance:** Charles Dewar, Andrea Stafford

**Moderators:** Dean Phil Hartman, Assoc. Dean Dick Rinewalt, Dr. Giri Akkaraju, and Dr. Anna Petursdottir

**Judges:** William Bennett, Jeff Bond, Manuela Dal Forno, George Fassett, Bogi Huddleston, Robert Payne, Randi Proffitt Levya, Chris Sawyer, Wendi Sierra, Raymond Smilor, Juan Carlos Sola-Corbacho, Dan Williams

**Student volunteers (Projectionists, IT support):** Rachel Alenius, Katie Clare, Vuong Do, Halia Eastburn, Carmella Kilburn, John Rutledge, Tom Stevens, and Ishor Thapa

**CSE Honors Research Forum Committee:** Dr. Naomi Ekas, Dr. John Horner, Dr. Dennis Ledis, and Dr. Youngha Ryu