TRANSACTIONS OF THE ILLINOIS STATE ACADEMY OF SCIENCE

SHORT PROGRAM SUPPLEMENT TO VOLUME 117



117TH ANNUAL MEETING APRIL 5, 2025

WITH ILLINOIS JUNIOR ACADEMY OF SCIENCE REGIONAL WINNERS

IN PERSON ALL-DAY EVENT HOSTED BY

SOUTHERN ILLINOIS UNIVERSITY EDWARDSVILLE

ILLINOIS STATE ACADEMY OF SCIENCE

FOUNDED 1907

AFFILIATED WITH THE ILLINOIS STATE MUSEUM SPRINGFIELD, IL

TABLE OF CONTENTS

MEETING SCHEDULE	3
ABBREVIATIONS USED IN PROGRAM	3
MESSAGE FROM THE VICE PRESIDENTS	4
CAMPUS MAP	5
ISAS ORAL PRESENTATIONS OVERVIEW	6
ISAS Poster Presentations Overview	
ILLINOIS JUNIOR ACADEMY OF SCIENCE POSTER PRESENTATIONS OVERVIEW	
KEYNOTE ADDRESS – ZHI-QING (ZQ) LIN, PH.D – 2:00PM SCIENCE EAST 3126	
ORAL PRESENTATIONS SCHEDULE – 9:00AM-11:45AM SCIENCE EAST	
Cell, Molecular, & Developmental Biology – Rm SE 2206	
Anthropology & Archeology	12
Cell, Molecular, & Developmental Biology	12
Chemistry & Biochemistry	
Computer ScienceEarth Science	
Engineering & Technology	
Environmental Science	
Health Science	
Microbiology	
Physics, Mathematics, & Astronomy	
Plant BiologySTEM Education	
Zoology	
ILLINOIS JUNIOR ACADEMY OF SCIENCE POSTER PRESENTATIONS SCHEDULE –3:15PM-5:1	
CENTER, ACTIVITY CENTER GYM ROOM 1420	
GETTING TO AND AROUND THE SIUE CAMPUS	
DIRECTIONS TO SIUE CAMPUS	
EDWARDSVILLE HOTEL INFORMATION	
CAMPUS PARKING AND EVENT LOCATIONS	20

117TH ISAS ANNUAL MEETING

April 5, 2025

Southern Illinois University Edwardsville Hosts: Dr. Tom Fowler and Dr. Amy Winn

MEETING SCHEDULE

SATURDAY, APRIL 5TH

MORNING EVENTS ARE IN SCIENCE EAST

■ 8:00am – 11:45am Science East Atrium – Check-in, On-Site Registration if Needed, Break Area

• 9:00am – 11:45am Oral Presentations, Rms 0214, 0222, 2206, 2214

ISAS LUNCHEON AT CRYSTAL GARDENS BANQUET HALL (OFF-SITE)

■ 12:00noon – 1:30pm 1230 University Drive (tickets required, carpooling recommended)

KEYNOTE ADDRESS IN SCIENCE EAST

■ 2:00pm – 3:00pm 3126 Science East

AFTERNOON EVENTS ARE IN STUDENT FITNESS CENTER

■ 3:00pm – 4:30pm Entry Area – Check-in, On-Site Registration if Needed, Break Area

■ 3:15pm – 5:10pm Poster Sessions, Activity Center Gym Room 1420

■ 5:10pm – 6:00pm Award Presentations, Activity Center Gym Room 1420

Future Meeting Sites

2026 - TBA

ISU

ABBREVIATIONS USED IN PROGRAM

Division Abbreviations		Participant	Abbreviations
Anthro & Archeo	Anthropology & Archeology	UG	Undergraduate Student
Cell Biology	Cell, Molecular, & Developmental Biology	Grad	Graduate Student
Chem & Biochem	Chemistry & Biochemistry	HS or JH	High School or Junior High
Physics, Math, & Astron	Physics, Mathematics, & Astronomy	None	Regular/Faculty Member

Participating School and Organization Abbreviations

Illinois State University

Adlai	Adlai Stevenson High School	Lewis	Lewis University
Aptakisic	Aptakisic Junior High School	Maryville	Maryville University
Bradley	Bradley University	Millikin	Millikin University
Dunlap	Dunlap High School	Oak Park	Oak Park and River Forest High School
EIU	Eastern Illinois University	Oakton	Oakton College
Governor French	Governor French Academy	Pharmacy	University of Health Sciences and Pharmacy
IC	Illinois College	SIUE	Southern Illinois University Edwardsville
IMSA	Illinois Math and Science Academy	WIU	Western Illinois University

MESSAGE FROM THE VICE PRESIDENTS

Welcome to Southern Illinois University Edwardsville (SIUE) for the 117th Annual Meeting of the Illinois State Academy of Science! It has been nearly a decade since the last time we hosted the ISAS Annual Meeting, and we are pleased that you are joining us to take in a day of presentations about science endeavors that have occurred around the region. The ISAS Annual Meeting is meant for us to educate and celebrate each other, be reunited with scientific colleagues we know, and make new connections with others. Please be an active participant! We challenge you to meet new people and expand your science network during your time here. The tradition of this organization is to provide a welcoming experience to new members of the scientific community by including many presentations from students to go along with those from the professional ranks. Through this forum, students and more senior scientists can inspire and be inspired by each other. In addition to the abstracts that will be available online in a Supplement to the *Transactions of the Illinois State Academy of Science* soon after the meeting, we encourage those with completed studies to consider submitting a full manuscript for peer review to that same journal.

While you are on the SIUE campus, feel free to explore. In addition to the locations of meeting events, points of interest include the Morris University Center, the Gardens at SIUE, and scattered installations of outdoor sculptures by student artists. Guest Wi-Fi access can be gained through the unencrypted 'Welcome to SIUE' network or (if your home institution uses it) through the inter-institution 'Eduroam' network.

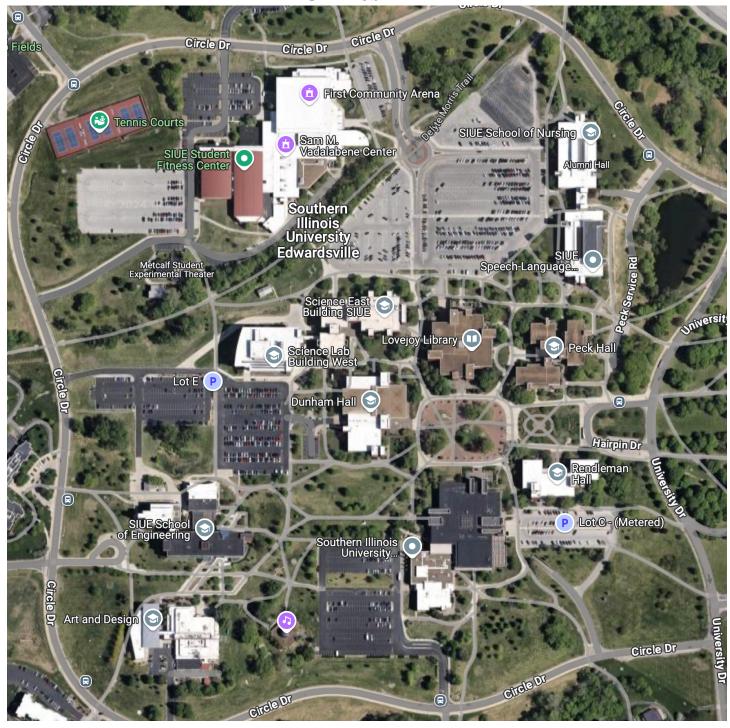
We gratefully acknowledge the contributions of many others to the success of this event. Our colleagues in the Department of Biological Sciences graciously agreed to host and be the SIUE sponsor of the meeting, and the administrators of other SIUE Departments and their associated Colleges supported faculty and student participation. The SIUE Information Technology Service staff provided preparation and technical assistance at the meeting, and Tracy Ziegler and the staff at the SIUE Student Fitness Center arranged for the poster venue. Emily Dawson coordinated participation of IJAS students, and the SIUE STEM Center provided poster printing assistance to the IJAS presenters. Jen Jost and Bradley University loaned and transported poster easels, and many student volunteers, seen and unseen by guests, assisted and contributed in a myriad of ways. We thank the ISAS executive officers and council members for their input and for taking on tasks as needed. As has been the case for many years, ISAS and its meetings are supported by two amazing and very dedicated people who really make it happen for the rest of us: Robyn Myers, Executive Secretary, and Tere North, Director of Communications and Program Planning. We truly cannot thank them enough for their contributions, and we hope you will join us in showing appreciation.

Welcome, and thanks for joining us!

VPs for the ISAS 2025 Annual Meeting, Drs. Amy Winn and Tom Fowler

SOUTHERN ILLINOIS UNIVERSITY **EDWARDSVILLE**

CAMPUS MAP



ISAS ORAL PRESENTATIONS OVERVIEW

SCIENCE EAST

	SE 0222	SE 2206	SE 0214	SE 2214
9:00 – 9:15	Danielle Lee	Yusiro Ismail	Chelsie Hadley	Jena Sellers
9.00 – 9.15	Environmental Sci	Cell Biology	Physics, Math, & Astronomy	Plant Biology
9:15 – 9:30	Chris Theodorakis	Chiemeka Emeribe	Angelica Strack	Toby McTamney
9.13 - 9.30	Environmental Sci	Cell Biology	Physics, Math, & Astronomy	Plant Biology
9:30 – 9:45	lyanuoluwa Fatunmbi	Emily Edwards	Gabriel Sojka	Kurt Schulz
9.30 - 9.43	Environmental Sci	Cell Biology	Physics, Math, & Astronomy	Plant Biology
9:45 – 10:00	Anna Berg	Shreya Sharma	Amy Aung	Zackary Woodall
9:45 - 10:00	Environmental Sci	Cell Biology	Physics, Math, & Astronomy	Plant Biology
10:00 – 10:15	Brianna Cook	BREAK	Marcus King	BREAK
10:00 – 10:15	Environmental Sci	BREAK	Physics, Math, & Astronomy	BREAK
10.15 10.20	BREAK	Jessica Sager	BREAK	Abhilash Polu
10:15 – 10:30	BREAK	Chem & Biochem	BREAK	Health Sciences
10:30 – 10:45	Harriet Barker	Samuel Bickford	Amritha Praveen	Luke Yin
10.50 - 10.45	Environmental Sci	Chem & Biochem	Computer Sci	Health Sciences
10:45 – 11:00	Emma Prott	Gwendowlyn Knapp	Jenna Mohammed	Jacob Black
10.45 – 11.00	Environmental Sci	STEM Education	Computer Sci	Health Sciences
11:00 – 11:15	Blake Rentz	Hailey Gula	Ren Goodfriend	Lucia Thompson
11:00 – 11:15	Environmental Sci	Zoology	Engineering & Technology	Health Sciences
11:15 – 11:30	Emily Beiler			Abigail Falkoff
11:15 – 11:30	Environmental Sci			Health Sciences
11.20 11.45	Lev Khoubaeva-Hummel			Bradley Coulter
11:30 – 11:45	Environmental Sci			Health Sciences
11:45 – 12:00	:45 – 12:00 Travel (Carpool) to Lunch @ Crystal Gardens Banquet Hall			

ISAS POSTER PRESENTATIONS OVERVIEW

STUDENT FITNESS CENTER, ACTIVITY CENTER GYM ROOM 1420

	Group A [3:15pm – 4:	10pm]	– Odd Numbers	Group B [4:15pm – 5:10pm] – Even Numbers			
1	Kirsten Fisher	55	Amanda Tannehil	2	Bowen Li	56	Laura Tayon
_	Anthro & Archeo	33	Health Sciences		Computer Science	30	Zoology
3	Devin Boggs	57	Joseph Agyemang	4	Misbahuddin Mohammed	58	Robert Mense
	Anthro & Archeo	0,	Health Sciences		Computer Science		Health Sciences
5	Elyse Ibata	59		6	Elly Beck & Kaylee Shaw	60	Sanam Talwar
	Cell Biology		- " 1		Cell Biology		Health Sciences
7	Godfred Mensah	61	Tsilate Tadesse	8	Ali Daoud	62	Sahana Garapati
	Cell Biology		Health Sciences		Cell Biology		Health Sciences Colin McLeod-Demers
9	Melanie Buzzard	63	Amanda Ekstrand	10	Kennedy Spears	64	Health Sciences
	Cell Biology Jesus Gudino		Microbiology Matthew Skelley		Cell Biology Riley Mooney		Princess Akyea-Obesebea
11	Cell Biology	65	Microbiology	12	Cell Biology	66	Microbiology
	Mariela Garces		Ashley Olson		Ava Austin		Beamlak Hiltework
13	Chem & Biochem	67	Microbiology	14	Chemistry & Biochem	68	Microbiology
	Marissa Purfeerst		Olivia Viele		Caleb Whitaker		Yusra Amena
15	Chem & Biochem	69	Microbiology	16	Chemistry & Biochem	70	Microbiology
	Ty Ojanovac		Mary Olorunkosebi		Owen Beck		Zoey Lane
17	Chemistry & Biochem	71	Microbiology	18	Chemistry & Biochem	72	Microbiology
	Omnia Ahmed		Alyssa Culver		Hannah Eden		Diana Guzman
19	Chemistry & Biochem	73	Microbiology	20	Chemistry & Biochem	74	Microbiology
	Isabel Navas Rodriguez		Danielle Ashton		Remi Irwin	_	Emily Everett
21	Chemistry & Biochem	75	Microbiology	22	Chemistry & Biochem	76	Microbiology
	Jesús Gómez		Maciej Zalinski		Abigail Lewis		Allisha Ishaque
23	Chemistry & Biochem	77	Microbiology	24	Chemistry & Biochem	78	Microbiology
25	Conner Herkert	70	Philip Ambe Omiah	26	Maddy Kotler	00	Hansini Gamage Don
25	Chemistry & Biochem	79	Physics, Math, & Astronomy	26	Chemistry & Biochem	80	Microbiology
27	Samuel Hannig	0.4	Nathan Oliveira	20	MD. Imon Hossain	82	Octavio Ortiz
27	Chemistry & Biochem	81	Physics, Math, & Astronomy	28	Chemistry & Biochem		Microbiology
29	Md Mahmud Alam	83	Thu Thanh Minh Do	30	Marlena Gabriel	84	Blake Abernathy
25	Chemistry & Bio Chem	65	Physics, Math, & Astronomy	30	Chemistry & Biochem	04	Physics, Math, & Astronomy
31	Olalekan Ogunsola	85	Marissa Feldhake	32	Ayowole Owolabi	86	Gregory Wilson
31	Chemistry & Bio Chem	85	Physics, Math, & Astronomy	32	Chemistry & Biochem	80	Physics, Math, & Astronomy
33	Md. Motahar Kibriah	87	David Revelle	34	Prajakta Pohare	88	Sydnee Osgood
33	Engineering & Technology	0,	Plant Biology	5	Engineering & Technology	00	Physics, Math, & Astronomy
35	Cory Booher	89	Jacob Sutton	36	Boone Formhals	90	Yaksh Patel
	Engineering & Technology	03	Plant Biology	50	Engineering & Technology	30	Plant Biology
37	Rachel Kim	91	Leyla Zeynep Loga	38	Dennis Fofie Kwarkye	92	Jacob Blameuser
	Engineering & Technology		Plant Biology		Environmental Science	-	Plant Biology
39	Christopher Mueller	93	Kylie Pearman	40	Prakash Joshi	94	Michaela Barter
	Environmental Science		Plant Biology		Environmental Science		Plant Biology
41	Pragya Sharma	95	Riley Brown	42	Allissa Busch	96	Avril Enciso
	Environmental Science		Zoology		Environmental Science		Zoology
43	Jenisha Adhikari	97	Abigail Beddingfield	44	Sophia Borjon	98	Kirsten Fisher
	Environmental Science		Zoology Isabell Walker		Environmental Science		Zoology
45	Grace Witsken Environmental Science	99		46	Brenden Auerbach Environmental Science	100	Dylan Krohe
			Zoology				Zoology Aleyda McPherson
47	Garrett Vanfossan	101	Abby Heberling Zoology	48	Sam McNamee Environmental Science	102	Zoology
	Pichard Owney Angah		Michelle Le		Mohamed Saady		Hannah Bendler
49	Environmental Science	103	Zoology	50	Environmental Science	104	Zoology
	Viola Stangle		Mariam Sani		Mehedi Hasan		Zachary Renken
51	Environmental Science	105	Earth Science	52	Environmental Science	106	STEM Education
	Christopher O'Steen	4.5-	Claire lott		Confidence Ikpe		2.2 2300000
53	Environmental Science	107	Earth Science	54	Environmental Science		
		1					

ILLINOIS JUNIOR ACADEMY OF SCIENCE POSTER PRESENTATIONS OVERVIEW

STUDENT FITNESS CENTER, ACTIVITY CENTER GYM ROOM 1420

	Group A [3:15pm – 4:10pm] – Odd Numbers				Group B [4:15pm – 5:10pm] – Even Numbers			
1001	Yagnesh Lokesh (Agriculture)	9 th	Illinois STEM Society	1002	Ishika Mathur (Agriculture)	10 th	Adlai E. Stevenson High School	
1003	Sohum Mehta (Behavioral Science)	11 th	Illinois Math & Science Academy	1004	Diego Landeros (Biochemistry)	11 th	Lane Tech High School	
1005	Arnav Chaphalkar (Computer Science)	9 th	Adlai E. Stevenson High School	1006	Theodore Tikhomirov (Design Project)	11 th	Independent	
1007	Oluwanifemi Ngozi Ekemode (Earth Science)	9 th	Air Force Academy High School	1008	Anda Wattanakit (Electronics)	10 th	Richwoods High School	
1009	Navtej Bhatti (Electronics)	11 th	Glenwood High School	1010	Aditya Dara (Electronics)	8 th	Dunlap Area Research Group	
1011	Samarth Donapati (Environmental Science)	10 th	Adlai E. Stevenson High School	1012	Akshitha Sushil (Environmental Science)	11 th	Adlai E. Stevenson High School	
1013	Agrini Neekhra (Health Science)	11 th	Dunlap High School	1014	Amrutha Dara (Health Science)	11 th	Dunlap High School	
1015	Cyrus Darki (Health Science)	9 th	Hinsdale Academy	1016	Yamileth Gamez-Rocha (Health Science)	12 th	Carver Military Academy	
1017	Ishani Gupta (Health Science)	10 th	Adlai E. Stevenson High School	1018	Sohum Kodilkar & Ansh Mehta (Health Science)	9 th	Dunlap Area Research Program	
1019	Ishant Sharma (Health Science)	10 th	Illinois STEM Society	1020	Yuxin Shi (Health Science)	10 th	Walter Payton High School	
1021	Cynthia Chen (Mathematics)	10 th	Walter Payton College Prep	1022	Bogdan Felix Jones (Mathematics)	11 th	Walter Payton College Prep	
1023	Darius Jones (Mathematics)	9 th	Whitney M. Young Magnet High School	1024	Navya Shah (Molecular Biology)	10 th	Neuqua Valley High School	

KEYNOTE ADDRESS – ZHI-QING (ZQ) LIN, PH.D – 2:00PM SCIENCE EAST 3126

Selenium in the Environment and Human Health

Zhi-Qing (ZQ) Lin, Ph.D.

Professor and SIUE Distinguished Research Professor (2020), Department of Environmental Sciences & Department of Biological Sciences

Dr. Lin earned a Bachelor of Science (environmental biology) from Liaoning University, a Master of Science (pollution ecology) from the Chinese Academy of Sciences, and his Ph.D. (renewable resources) from McGill University (1996). He conducted post-doctoral research at UC Berkeley and joined the faculty of SIUE in 2002.



Dr. Lin has served as director of the SIUE Environmental Sciences program and as chair of the SIUE Department of Environmental Sciences, has held many offices and provided his expertise to scientific agencies and societies, and is the co-founder and current secretary of the *International Society for Selenium Research*. We are proud to recognize that Dr. Lin has a long association with ISAS and served as the division chair for Environmental Sciences from 2004-2006!

Dr. Z.Q. Lin with his students and colleagues have investigated trace element selenium along its path in the abiotic and biotic environment for more than 25 years. His prolific research informs both basic science knowledge and practical application. As you will hear, selenium can be in harmful excess or in deficiency, depending on geography and past environmental disturbances.

How can these conditions be assessed, remediated, or modified to alleviate potential harm or even provide benefits to human nutrition and the environment? Dr. Lin's research perspective on selenium may be best encapsulated by the terms 'biogeochemistry,' 'phytoremediation,' and 'biofortification.' In the process of exploring selenium in our environment, Dr. Lin has authored or co-authored over one hundred peer-reviewed articles and book chapters and been part of research funding of nearly 1 million US dollars, including grants from US NSF, NIH, EPA, and DOE. You can learn more about Dr. Lin's research and laboratory at www.siue.edu/~zhlin/.

ORAL PRESENTATIONS SCHEDULE – 9:00AM-11:45AM SCIENCE EAST

Time	Presenter	Title of Presentation
	Cell, Mol	ecular, & Developmental Biology – Rm SE 2206
9:00am 9:15am	Yusiro Ismail (WIU, Grad) Chiemeka Emeribe (WIU, Grad)	The Potency of Anti-Cancer Extracts of <i>Acmella</i> spp in Ovarian Cancer When Plant Defense Goes Silent: Jasmonates does not accumulate in the <i>ppi</i> 2 Mutant of <i>Arabidopsis</i>
	Emily Edwards (Millikin, UG) Shreya Sharma (EIU, Grad)	Late-Stage Immune Responses to Self-Antigens in Tadpoles: Potential as a Lupus Model Cellular Reprogramming of Rat Fibroblasts Using CRISPR Technology
		Chemistry & Biochemistry – Rm SE 2206
	Jessica Sager (SIUE, UG)	Temperature Dependence of Kinetic Isotope Effects of the Apparent Hydride Transfer Reactions from NADH Analogues to Tetracyanoethylene in Solution
10:30am	Samuel Bickford (SIUE, UG)	Reaction Monitoring and Catalyst Exploration for Tandem Ugi-Smiles Reactions
		Computer Science – Rm SE 0214 Finds Risk Assessment of Author Spectrum Risadem A Nevel Agree of Union Missolial
	Amritha Praveen (Adlai, HS)	Early Risk Assessment of Autism Spectrum Disorder: A Novel Approach Using Microbial Biomarkers and Ensemble Classification Models
10:45am J	Jenna Mohammed (ISU, UG)	The Role of Prompt Engineering in Enhancing Generative AI Performance
		Ingineering & Technology – Rm SE 0214 Evaluation of Muon Energies for Quantification of Single Event Upsets Within Aircraft
11:00am	Ren Goodfriend(Oak Park, HS)	Transistors With Specific Applications of United States Military Technology
		Environmental Science – Rm SE 0222
	Danielle Lee (SIUE)	Urban Biomonitoring – Comparing Local Biodiversity of Collinsville and Edwardsville
9:15am 9:30am	Chris Theodorakis (SIUE) Iyanuoluwa Fatunmbi (SIUE, Grad)	Acute and Chronic Toxicity of Metal Oxide Nanoparticles in Fathead Minnows Bridging Resolution Gap: A Machine Learning Approach to Estimating Land Surface Temperature Using Higher-Resolution Satellite Data
10:00am	•	Landscape of Fear in Mammals in Response to Anthropogenic Hunting Pressure Anthropogenic Invasion's Effect on Mammal Community Composition and Activity Impact of Urbanization on Macro-Moth Species Composition in Central Illinois
10:45am	Emma Prott (SIUE, UG)	The Sedimentological Impact of Immigration Infrastructure on River Dynamics: Rio Grande at Eagle Pass, Texas
	Blake Rentz (SIUE, Grad)	Comparative Life-History Parameters of DDT-Susceptible and -Resistant <i>Drosophila</i> melanogaster Strains
11:15am	Emily Beiler (SIUE, Grad)	Acute, Developmental, and Behavioral Toxicity of PFOS on Fruit Flies and Planarians
11:30am	Lev Khoubaeva-Hummel (Oak Park, HS)	Quantification of the Effects of Fluopyram on the Head Regeneration, Photophobic Behavior, Mobility, and Mortality Rates of <i>Girardia tigrina</i> with Implications for Ecotoxicological Safety
		Health Sciences – Rm SE 2214
10:15am	Abhilash Polu (IMSA, HS)	Qualitative Analysis of the Acceptability of Attention Training as a Potential Treatment for Individuals with Long-COVID Brain Fog
10:30am	Luke Yin (IMSA, HS)	Efficacy of Tomivosertib (MNK1/2 Inhibitor) in Mitigating RDEB Mice Pain
10:45am	Jacob Black (Oakton, UG)	Using a Randomized Natural Experiment to Estimate the Effects of the Evaluee's Gender, Physical Attractiveness, and Serial Position on the Evaluator's Memory and Accuracy
11:00am	Lucia Thompson (SIUE, Grad)	Methimazole-Induced Hypothyroidism Influences Growth, Circulating Ghrelin Levels, and Gut Microbiome Composition in Mice
11:15am	Abigail Falkoff (Oak Park, HS)	Ecdysone Used to Induce a Hyperandrogenism Phenotype in <i>Drosophila melanogaster</i> as a Basis for a Novel Invertebrate Polycystic Ovary Syndrome Model
11:30am	Bradley Coulter(SIUE, Grad)	Hormonal Havoc: Thyroid's Role in Bone and Gut Health
	•	es, Mathematics, & Astronomy – Rm SE 0214
9:00am	Chelsie Hadley (WIU, UG)	Automating Quantum Error Correction
	Angelica Strack (WIU, Grad)	Physical and Optical Properties of Neodymium (Nd ³⁺) Doped Bismuth Boro-Tellurite Glasses
9:30am	Gabriel Sojka (WIU, Grad)	Molecular Masers and Continuum Variability in the Orion Nebula

Time	Presenter	Title of Presentation
9:45am	Amy Aung (WIU, Grad)	Raman Spectroscopic Investigations of Structural Properties of Pr ³⁺ Doped Bismuth Boro-Tellurite Glasses
10:00am	Marcus King (Governor French, HS)	Water World Exoplanet Atmospheric and Spectral Data Analysis via Thermodynamic Modeling and Unsupervised Machine Learning
		Plant Biology – Rm SE 2214
9:00am	Jenna Sellers (IC, UG)	Viability Assessment of Orchid Seeds and Their Mycorrhizal Fungi in Prolonged Cool Storage for Conservation
9:15am	Toby McTamney (IC, UG)	The Status of Florida's Ghost Orchid (Dendrophylax lindenii) as of 2024
9:30am	Kurt Schulz (SIUE)	Invasion by <i>Lespedeza cuneata</i> Reconfigures Plant and Ground-Dwelling Insect Communities
9:45am	Zachary Woodall (SIUE, UG)	Determining the Effect of Falling Chloroplasts on the Gravitropic Response in <i>Arabidopsis thaliana</i>
		STEM Education – Rm SE 2206
10:45am	Gwendolyn Knapp (IC)	Incorporating Primary Literature into the Classroom Using <i>This Week in Microbiology</i> (TWiM) Podcasts
		Zoology – Rm SE 2206
11:00am	Hailey Gula (Millikin, UG)	Significance of Aspergillus as a Pathogen to Birds of Prey in Central Illinois

POSTER PRESENTATIONS SCHEDULE –3:15PM-5:10PM STUDENT FITNESS CENTER, ACTIVITY CENTER GYM ROOM 1420

Time	#	Presenter	Title of Presentation
			Anthropology & Archeology
3:15pm	1	Kirstien Fisher (Bradley, UG)	Gender Disparities in the Diagnostic Process of Chronic Illness among College-Aged Women in the US
3:15pm	3	Devin Boggs (IC, UG)	Does Mandible Development Influence Wisdom Tooth Impaction?
		Ce	ell, Molecular, & Developmental Biology
3:15pm	5	Elyse Ibata (SIUE, UG)	RNA-Seq Analysis of White vs. Green Sectors in <i>Arabidopsis geranylgeranyl</i> Diphosphate Synthase 11 Mutants
4:15pm	6	Elly Beck (Bradley, UG)	Characterizing the Effect of Carboplatin on the Aggression of Bulk Ovarian Cancer Cells and Ovarian Cancer Stem Cells
3:15pm	7	Godfred Mensah (WIU, Grad)	The Effect of Toc132/120 Mutation on the Expression of JAZ Repressor Genes
4:15pm	8	Ali Daoud (IC, UG)	Challenging Cornea-Lens Regeneration in the Mature Frog Cornea
3:15pm	9	UG)	Investigating Cardiotoxic Effects of Nab-Paclitaxel Compared to Regular Paclitaxel on Developing Zebrafish (<i>Danio rerio</i>)
4:15pm	10	Kennedy Spears (SIUE, UG)	The Scizophyllum Commune Mound Mutant in a wc-2 -Disrupted Background
3:15pm	11	Jesus Gudino (SIUE, UG)	Knockout of a Kynureninase-Coding Gene Does Not Lead to a Nicotinic Acid Requirement in <i>Schizophyllum</i> Commune
4:15pm	12	Riley Mooney (SIUE, UG)	Physiological and Behavioral Changes in <i>Drosophila melanogaste</i> r After Chronic Repeated Ethanol Exposure
			Chemistry & Biochemistry
3:15pm	13	Mariela Garces (WIU, UG)	Analysis of Oxamyl is Locally Purchased Produce Correlation of Kinetic Isotope Effects with Their Temperature Dependences of Hydride
4:15pm	14	Ava Austin (SIUE, Grad)	Transfer Reactions of NADH/NAD ⁺ Analogues in Solution
3:15pm	15	Marissa Purfeerst (Maryville, UG)	Using Dry ATR-FTIR Spectroscopy to Identify 1,4-Butanediol in Alcoholic Beverages
4:15pm	16	Caleb Whitaker (WIU, UG)	Nickel Telluride Synthesis
3:15pm		Ty Ojanovac(WIU, Grad)	Development of an Organometallic Chemistry Reaction for Use in a Senior Level Inorganic Laboratory
4:15pm	18	Owen Beck (WIU, UG)	Athabascaite Crystal Synthesis
3:15pm	19	Omnia Ahmed (SIUE, Grad)	Exploring Bacterial Replication and Survival Dynamics Under Different Oxidative Stress Conditions at the Single-Bacterium Level
4:15pm	20	Hannah Eden (WIU, UG)	The Flavonoid Content of the Acmella Plant
3:15pm	21	Isabel Navas Rodriguez (WIU, Grad)	Anticancer Activity of Nigerian Inorganic Complexes in Ovarian Cancer (SKOV3) Cells
4:15pm		Remi Irwin (WIU, Grad)	Exploration of FeS, Fe _{.8} S _{1.2} , and FeS ₂ by Solid State Synthesis
3:15pm 4:15pm		Jesús Gómez (SIUE, UG) Abigail Lewis (SIUE)	Dual Photosensitizer Polymeric Platforms with Optimized Antimicrobial Properties Exploration of Caffeic Acid as a Component in Ugi Reactions
3:15pm	25	Conner Herkert (SIUE, UG)	Temperature Dependence of Modified Ugi-Smiles Reactions with CPA Catalysts
4:15pm	26	Maddy Kotler (WIU, Grad)	Quantification of Cannabichromenic Acid among Seventeen Cannabinoids in Key Lime Pie Hemp Flowers by Liquid Chromatography Ultraviolet Detection
3:15pm	27	Samuel Hannig (IC, UG)	Extraction and Characterization of Chitin from Cicada Shells
4:15pm	28	MD. Imon Hossain (WIU, Grad)	Quantification of Cannabidiol in Bath Balm Using Ultrahigh Performance Liquid Chromatography with Ultraviolet Detection
3:15pm	29	Md Mahmud Alam (WIU, Grad)	Quantification of Cannabichromene in Hemp-Infused Face Cream Using Ultrahigh- Performance Liquid Chromatography with Ultraviolet Detection
4:15pm	30	Marlena Gabriel (WIU, Grad)	Application of Diorganylditellurides in Hiyama Coupling Reactions

	Time	#	Presenter	Title of Presentation
	3:15pm	31	Olalekan Ogunsola (WIU, Grad)	Potency Testing of Synthetic THC Isomers-Based Products by Liquid Chromatograph Ultraviolet Detection: Quantification of Cannabidiol in a Delta8-THC Focused Blends –
	4:15pm	32	Ayowole Owolabi (WIU, Grad)	Soothe Oil Potency Testing of Synthetic THC Isomers-Based Products by Liquid Chromatograph Ultraviolent Detection: Quantification of Delta 9-THC in a Delta 8-THC Fortified Hemp Oil Tincture
				Computer Science
	4:15pm 4:15pm	2	Bowen Li (Aptakisic, JH) Misbahuddin Mohammed	Machine Learning Models for Tennis Serves Analysis and Modeling of Respiratory Disease and the Influence of Socioeconomic
	шорш		(Bradley, Grad)	Factors in Central Illinois
	3·15nm	105	Mariam Sani (SIIIE Grad)	Earth Science Science-Interested Undergraduates' Perceptions of the Geosciences as a Career
	_		Claire Iott (SIUE, Grad)	Where Have Spring and Fall Gone? Changes in Temperate Transition Season Days
				Engineering & Technology
Ī	3:15pm	33	Md. Motohar Kibriah (WIU, Grad)	Advancing Aviation Safety: The Possibility of an Emergency Evacuation Detachable Airplane Cabin
	4:15pm	34	Prajakta Pohare (ISU, Grad)	Enhancing Inventory Control to Prevent Expired Goods Using Six Sigma
	3:15pm	35	•	From Concept to Completion
	4:15pm	36	Boone Formhals (WIU, Grad)	Mapping Engineering Excel Functions to VBA Across Versions: A Proof-of-Concept
	3:15pm	37	Rachel Kim (Dunlap, HS)	How is AI Impacting Students' Learning?
			Donnia Enfin Vyvanlava	Environmental Science Assessing the Impact of Increased Levonorgestrel Exposure on Surface Water Pathogen
	4:15pm	38	Dennis Fofie Kwarkye (SIUE, Grad)	Detection
	3:15pm	39	Christopher Mueller (SIUE, UG)	Selenium Accumulation and GSH-Px Activity in Different Cultivars of Garlic (<i>Allium sativum</i>)
	4:15pm	40	Prakash Joshi (SIUE, Grad)	Molecular Interaction of Selenium and Mercury in Edible Tissues of Shellfish
	3:15pm	41	Pragya Sharma (SIUE, Grad)	Greenhouse Gas Inventories for Small Cities: A Case Study of Webster Groves, Missouri
	4:15pm	42	Allisa Busch (Bradley, UG)	How is Urbanization Affecting the Morphology of Macromoths in the Family Erebidae in Central Illinois?
	3:15pm	43	Jenisha Adjikari (SIUE, Grad)	Impact of Agricultural Practices and Nutrient Runoff on Water Quality in the Indian Creek-Cahokia Creek Watershed
	4:15pm	44	Sophia Borjon (Bradley, UG)	Effect of Urbanization on Katydid Vocalization Events
	3:15pm	45		Best Fit Model of Ant Abundance in Edwardsville, IL
	4:15pm	46	Brenden Auerbach (SIUE, UG)	Exploring the Potential Application of Natural Organic Matter Capped Silver Nanoparticles in Antimicrobial Photodynamic Therapy
	3:15pm	47	Garrett Vanfossan (SIUE, UG)	Analysis of Stress Responses in DDT-Susceptible and -Resistant Strains of <i>Drosophila melanogaster</i>
	4:15pm	48	Sam McNamee (SIUE, UG)	County-Level Water Use Efficiency and Demand Projection in Illinois
	3:15pm	49	Richard Owusu Ansah (SIUE, Grad)	Determination of Antibiotic-Resistant Genes in <i>Pseudomonas</i> and <i>Salmonella</i> Species
	4:15pm	50	Mohamed Saady (SIUE, UG)	Analysis of Chill Coma Recovery and Geotactic Behavior in DDT-Susceptible and – Resistant Strains of <i>Drosophila melanogaster</i>
	3:15pm	51	Viola Stangle (SIUE, UG)	Synthesis and Characterization of NOM-Induced Silver Nanoparticle for Potential Contaminant Degradation Studies
	4:15pm	52	Mehedi Hasan (SIUE, Grad)	Monitoring Microplastics in United States River Waters: A Review of Distribution, Sources, and Environmental Consequences
	3:15pm	53	Christopher O'Steen (SIUE, Grad)	Hot Spot and Directional Distribution Analysis of Alaskan Wildland Fires, 1980-2020
	4:15pm	54	Confidence Ikpe (SIUE, Grad)	Fecal Indicator Bacteria Monitoring and Microbial Source Tracking in Horseshoe Lake

Time	#	Presenter	Title of Presentation
			Health Science
3:15pm	55	Amanda Tannehil (SIUE, Grad)	Antimicrobial Properties of Agmatine and Epigallocatechin Gallate (EGCG): An In-Vitro Investigation
3:15pm	57	Joseph Agyemang (SIUE, Grad)	Illegal Mining: An Environmental Enemy and a Public Health Threat in Ghana
4:15pm 3:15pm	58 59		The Effect of Additives of Bacterial Growth
4:15pm	60	Sanam Talwar (SIUE, Grad)	Chronic Inflammation in the Dental Pulp of Marfan Syndrome Mouse Model Fbn1 C1041G+/-
3:15pm	61	Tsilate Tadesse (IC, UG)	Does Dual-Task Walking Affect Cognitive Performance in Individuals With and Without Concussion 'Negatively Or Positively'?
4:15pm	62	Sahana Garapati (IMSA, HS)	The Role of Genistein Modeling Estrogen in the Blood Brain Barrier as a Treatment for Alzheimer's Disease
4:15pm	64	Colin McLeod-Demers (IC, UG)	Impact of Physical Activity Intensity on Academic Achievement in Middle School Students in Illinois
		(,)	Microbiology
1:00pm	63	Amanda Ekstrand (SIUE), UG)	Sticking Together: Characterizing Locust Olfactory Responses to Bacterial Volatile Signals
2:30pm	65	Matthew Skelley (EIU, UG)	Impact of Media Composition on Culturing Acidophiles
3:15pm	66	Princess Akyea-Obesebea (IC, UG)	Surveying the Environment for Antimicrobial Resistance
3:15pm	67	Ashley Olson (IC, UG)	Playing in Dirt: The Search for New Antibiotics
4:15pm	68	Beamlak Hiltework (IC, UG)	Antimicrobial Screening of Orchid Mycorrhizal Fungi as a potential Source of New Antibiotics
3:15pm		Olivia Viele (EIU, UG)	Impact of Sulfate on Growth of an Acidophilic Archaeon
4:15pm 3:15pm	70 71	Yusra Amena (SIUE, UG) Mary Olorunkosebi (WIU,	Single-Cell Imaging Reveals Phage-Induced Bacterial Heterogeneity in Membrane Lysis Comparative Study of the Biodegradation Potential of Foreign and Indigenous Bacteria in
_		Grad)	Pharmaceutical Effluent
4:15pm 3:15pm	72	Zoey Lane (SIUE, UG) Alyssa Culver (SIUE, Grad)	Real-Time Imaging of Bacterial Predation Highlights Variability in Prey Survival Times Gut Warfare: Investigating Type VI Secretion System-Mediated Competition in Termite- Associated <i>Serratia</i>
4:15pm	74	Diana Guzman (Bradley, UG)	Investigating Regulatory Factors Influencing bcp Gene Expression in <i>Bacillus subtilis</i> Using Transposon Mutagenesis
3:15pm	75	Danielle Ashton (Bradley, UG)	Investigating Factors that Promote Expression of bcp in <i>Bacillus subtilis</i>
4:15pm	76	Emily Everett (Bradley, UG)	Impact of Mosquitocidal Fungal Entomopathogens on the Mosquito Microbiome
3:15pm	77	Maciej Zalinski (Lewis, UG)	Investigation of Antimicrobial Molecules in Osage Orange (Maclura pomifera) Extracts
4:15pm	78	Allisha Ishaque (WIU, Grad)	Degradation of the Toxic Chemical P-Nitrophenol by Environmental Water Samples
4:15pm	80	Hasini Gamage Don (EIU, Grad)	Oligotrophic Bacterial Carbon Compound Utilization Mechanisms
4:15pm	82	Octavio Ortiz (Lewis, UG)	Microbial Activity of Rhizosphere in Soils Amended with Biochar Produced from Different Species of Invasive Plants
			Physics, Mathematics, & Astronomy
3:15pm	79	Philip Ambe Omiah (WIU, Grad)	Spectroscopic Analysis of Rare Earth Ions (Pr ³⁺ and Dy ³⁺) Co-Doped Bismuth Boro-Tellurite Glasses
3:15pm	81	Nathan Oliveira (SIUE, UG)	Studying the Formation of Persistent Holographic Grating in Tellurium Barium Glass
3:15pm	83	Thu Thanh Minh Do (SIUE, UG)	Tunable Polarization-Entangled Photon Pairs for Testing Bell's Inequalities and Demonstrating Quantum Nonlocality
4:15pm	84	Blake Abernathy (SIUE, UG)	Laser Induced Persistent Change in the Index of Refraction in Praseodymium-Doped Zinc-Tellurite Glass Using the X-Scan Technique

Time	#	Presenter	Title of Presentation
3:15pm	85	Marissa Feldhake (SIUE, UG)	Investigating the Thermo-Optical Coefficient of Telluride Glass with Different Concentrations of Praseodymium
4:15pm	86	Gregory Wilson (SIUE, UG)	Electro-Physical Properties of a Nematic Liquid Crystal Dispersed with Silver Nanoparticles
4:15pm	88	Sydnee Osgood (WIU, UG)	Variations in Refractive Index and Sm-Fluorescence in Barium Bismuth Borate Glasses
			Plant Biology
3:15pm	87	David Revelle (SIUE, UG)	Assembly of an Inducible Gernaylgeranyl Diphosphate Synthase 11 (GGPPS11) Construct to Better Understand Variegation in the ggpps11-1 Mutant
3:15pm	89	Jacob Sutton (SIUE, UG)	Comparing Interior and Exterior Forest Amur Honeysuckle Growth Metrics
4:15pm	90	Yaksh Patel (SIUE, UG)	Using Machine Learning to Track and Quantify Circumnutation in <i>Arabidopsis thaliana</i> Inflorescence Stems
3:15pm	91	Leyla Zeynep Loga (SIUE, UG)	The Effect of Hypoxia on <i>Arabidopsis</i> Knockouts of Genes Showing Altered Expression During Spaceflight
4:15pm	92	Jacob Blameuser (SIUE, UG)	Analysis of Biomass in Arabidopsis thaliana Berberine Bridge Enzyme-Like Mutants
3:15pm	93	Kylie Pearman (SIUE, UG)	Comparison of Root and Surrounding Soil Microbiome of the Invasive Orchid <i>Epipactis helleborine</i> with the Threatened <i>Platanthera leucophaea</i>
4:15pm	94	Michaela Barter (SIUE, UG)	Microbiome Analysis of Roots and Soil Surrounding Platanthera leucophaea
			STEM Education
4:15pm	106	Hunter Hansen (SIUE, Grad)	Geographic Thinking in Interdisciplinary Research: Examining Conceptualization, Experience, and Communication Among Watershed Scholars
			Zoology
4:15pm		Laura Tayon (SIUE, UG)	The Effect of Incubation Temperature on Salamander Survival and Fitness
3:15pm		Riley Brown (SIUE, UG) Avril Enciso (Bradley,	Lyme Disease in Field Mice in the Edwardsville Area
4:15pm	96	UG)	Influence of CO ₂ on Parasitic Infection of the American Bullfrog (Rana catesbeiana)
3:15pm	97	Abigail Beddingfield (IC, UG)	Examining the Response of Bats to the Playback of Conspecific and Heterospecific Distress Calls
4:15pm	98	Kirsten Fisher (Bradley, UG)	A Comparative Study of Lab vs. Field Based Aerial Exposure on Zebra Mussel Survival
3:15pm	99	Isabelle Walker (SIUE, Grad)	Behavioral Flexibility in Tool Use of Aphaenogaster rudis
4:15pm	100	•	Adaptive Tool Use in Response to Resource Viscosity: A Study of Aphaenogaster rudis
3:15pm		Abby Heberling (Millikin, UG)	West Nile Virus in Birds of Prey: Minor Pest or Major Problem?
4:15pm	102	Aleyda McPherson (Millikin, UG)	Tradeoffs in Reproduction, Body Condition, and Immune Defense in Breeding and Non-Breeding Northern Cardinals (<i>Cardinalis cardinalis</i>)
3:15pm	103	Michelle Le (Pharmacy)	An Examination of the Trailing Ability of Neonate Snakes: Preliminary Findings
4:15pm	104	Hannah Bendler (SIUE, UG)	Canopy Cover Influences on Arthropod Abundance in Giant Cane Patches

ILLINOIS JUNIOR ACADEMY OF SCIENCE POSTER PRESENTATIONS SCHEDULE –3:15pm-5:10pm STUDENT FITNESS CENTER, ACTIVITY CENTER GYM ROOM 1420

Agriculture

3:15pm 1001 Yagnesh Lokesh (9th) Seasonal Variations in Antibiotic Resistance: A

[Illinois STEM Society] Comparative Study of Soil Microbial Resistance in

Summer and Winter

4:15pm 1002 Ishika Mathur (10th) Machine Learning for Drought & Crop Yield

[Adlai E. Stevenson High School] Prediction In Geographic Regions

Behavioral Science

3:15pm 1003 Sohum Mehta (11th) Novel Interactions of Lexical Frequency and Visual

[Lane Tech High School] Stimuli during Word Retrieval

Biochemistry

4:15pm 1004 Diego Landeros (11th) Nitroisoxazole GPX4 Inhibitor Conjugate

[Illinois Math & Science Academy]

Computer Science

3:15pm 1005 Arnav Chaphalkar (9th) Computer Vision-Powered Motion Analysis for

[Adlai E. Stevenson High School] Objective Fencing Refereeing

Design Project

4:15pm 1006 Theodore Tikhomirov (11th) Improving EMS in Underserved Areas with Drones

[Independent]

Earth Science

3:15pm 1007 Oluwanifemi Ngozi Ekemode (9th) Ozone Guard

[Air Force Academy High School]

Electronics

4:15pm 1008 Anda Wattanakit (10th) Harvesting Rotational Energy from a Moving Wheel

[Richwoods High School] for a Self-Guided Mobility Aid (Glide)

3:15pm 1009 Navtej Bhatti (11th) High-Frequency BLDC Feedforward Control and

[Glenwood High School] Optimization for Motion Control

4:15pm 1010 Aditya Dara (8th) Analysis of Sensor Technologies for Enhanced Self-

[Dunlap Area Research Group] Driving Car Performance

Environmental Science

4:15pm 1011 Samarth Donapati (10th) Leveraging Machine Learning Models to Forecast

[Adlai E. Stevenson High School] Atmospheric PM2.5

Concentrations

4:15pm 1012 Akshitha Sushil 11th) The Usage of Metal Organic Frameworks to Harvest [Adlai E. Stevenson High School] Water, with factors of Passive Radiative Cooling & Relative Humidity **Health Science 3:15pm 1013 Agrini Neekhra** (11th) A Unique Triage Approach to Management of Febrile [Dunlap High School] Neutropenia in Pediatric Oncology Patients for Efficient Patient Stabilization and Antibiotic Administration **4:15pm 1014 Amrutha Dara** (11th) Capsule Composion and Dissoluon: Analyzing the [Dunlap High School] Efficiency of Various Capsule Types in Drug Delivery 3:15pm 1015 Cyrus Darki (9th) Exploring The Obesity Paradox: Impact of Obesity on [Hinsdale Academy] Mortality and Inflammatory Markers in Acute Pulmonary Embolism BioBone: Creating the Future of Bone Grafting 4:15pm 1016 Yamileth Gamez-Rocha (12th) [Carver Military Academy] 3:15pm 1017 Ishani Gupta (10th) The Effect of Herbal Supplements S-adenosyl [Adlai E. Stevenson High School] methionine and St. John's Wort on Antibiotic Potency in Escherichia coli **4:15pm 1018 Sohum Kodilkar & Ansh Mehta** (9th) What is Your Snoring Telling You? [Dunlap Area Research Program] **3:15pm 1019 Ishant Sharma** (10th) Computer Model to Detect Cases of Skin Cancer [Illinois STEM Society] 4:15pm 1020 Yuxin Shi (10th) HT1 and AKU Biological Meta-Analysis [Walter Payton High School] **Mathematics 3:15pm 1021 Cynthia Chen** (10th) Inversion to Gaskets [Walter Payton College Prep] 4:15pm 1022 Bogdan Felix Jones (11th) **Twisted Prime Pairs** [Walter Payton College Prep] **3:15pm 1023 Darius Jones** (9th) Gaps Between Primes [Whitney M. Young Magnet High School]

Molecular Biology

4:15pm 1024 Navya Shah (10th) Somatic Mutations as Biomarkers for Autoimmune [Neuqua Valley High School Disease Diagnosis & Prognosis

GETTING TO AND AROUND THE SIUE CAMPUS

DIRECTIONS TO SIUE CAMPUS



From I-55 north of campus: Take I-55 South to Illinois 143 West (Exit 23) straight at the light onto Governor's Parkway. Take Governor's Parkway across town to campus, entering on E. University Dr. Turn left on N. University Drive and then right on Circle Dr., which will take you around to Lot A.

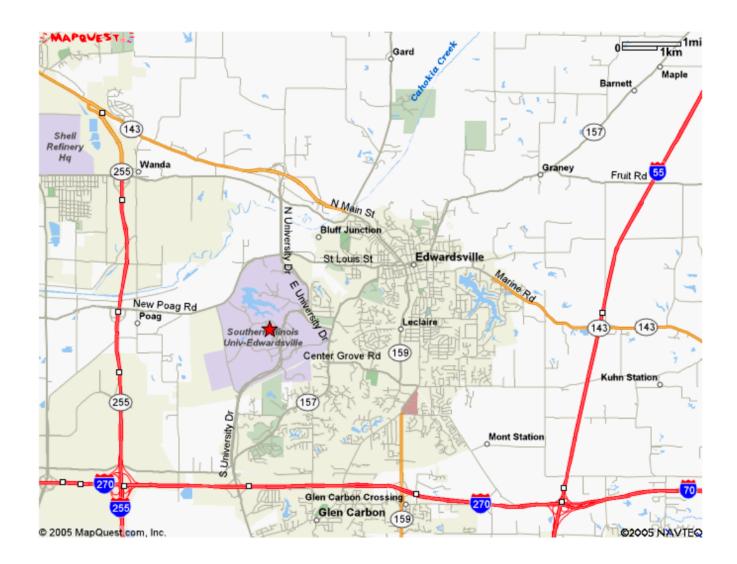
From I-55 south of campus: Take I-55 North to I-255 North (Chicago) to I-270 East. Use the I-270 directions below for the final directions to campus.



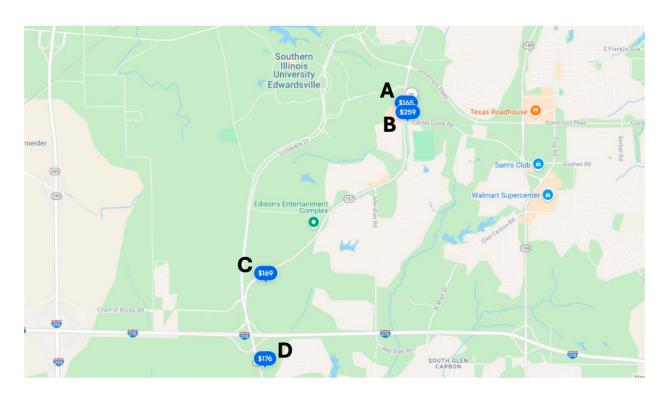
From I-255: Take exit 3 for New Poag Rd east toward campus. Turn right on NW University Drive and then left on Circle Dr and proceed to Lot A.

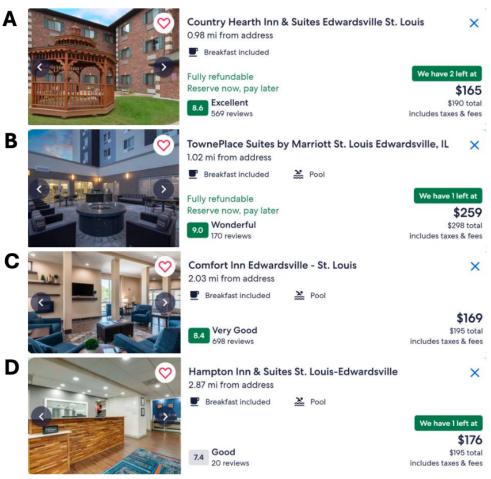


From I-270: Take the Illinois 157 North exit. Once you're on Illinois 157 North, going straight at the stop light (instead of following 157 to the right) will bring you straight to the campus core on S. University Dr. Turn left on Circle Dr. and follow that around to Lot A.



EDWARDSVILLE HOTEL INFORMATION



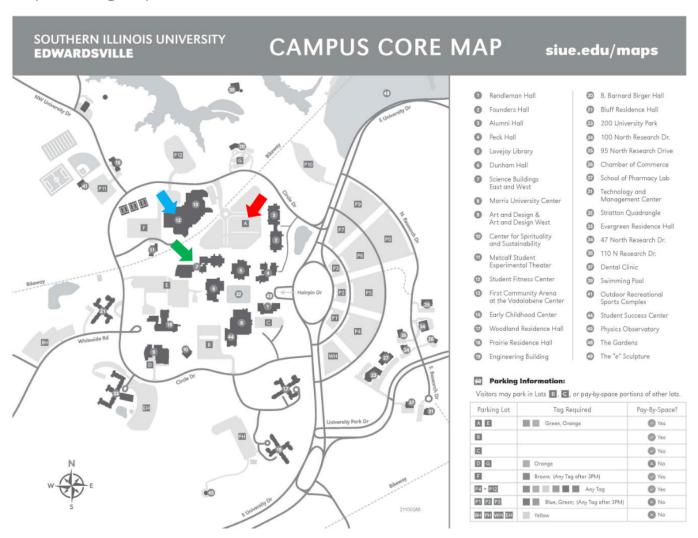


CAMPUS PARKING AND EVENT LOCATIONS

We recommend parking in the southwest corner of Lot A. Parking is free on the day of the event.

Registration, oral presentations, and keynote will be in **Science East** (building 7).

The poster session will be in the **Student Fitness Center** (building 12).



Directions to lunch at **GC Cuisine & Crystal Garden** (off campus at 1230 University Drive): From campus Lot A, take Circle Dr. east to N. University Dr. Go north on N. University Dr. and take a right on Lewis Dr. After crossing highway 157, the road will curve to the right and Crystal Garden will be on your right.