

FALL

**UNDERGRADUATE
RESEARCH**

EXPO

NOVEMBER 14-21, 2022

Purdue University

West Lafayette, Indiana

FALL UNDERGRADUATE RESEARCH EXPO

SCHEDULE OF EVENTS

NOVEMBER 14, 2022 | PMU BALLROOMS

10:00AM-11:30AM Morning Poster Session

1:00PM-2:30PM Afternoon Poster Session

NOVEMBER 16, 2022 | STEW 214

9:30AM-12:00PM Morning Research Talks

1:15PM-3:45PM Afternoon Research Talks

NOVEMBER 14-21, 2022 | ONLINE

Virtual posters and research talks

*Virtual presentations are available on the Fall Expo website at
purdue.edu/undergrad-research/conferences/fall*

We encourage participants and visitors to provide feedback to all presenters. To submit feedback to the presenters, please scan this QR code with your device's camera!



POSTER SYMPOSIUM

Posters sorted by last name of first author within each session. Spelling of names and titles as submitted.

MORNING POSTER SESSION | 10:00AM-11:30AM

- | | | | |
|-----|---|-----|--|
| 100 | <i>Olukunle Akinleye, Wyatt Alexander, Philip Voronin</i>
Mentors: Katherine Fowee Gasaway, Alina Alexeenko, Steven Pugia, Jesus Meza Galvan | 115 | <i>Raul Castro</i>
Mentors: Chris Rochet, Sehong Min |
| 101 | <i>Sierra Allen</i>
Mentors: Sang Woo | 116 | <i>Isabel Cava, Megan Morley, Dinah Waheed</i>
Mentors: Andrea DeMaria, Fatimah Lawal, Risa Cromer |
| 102 | <i>Gabriel Alminauskas, Collin Campbell, Runlin Wang</i>
Mentors: Luke Cohen, Andrew Weiner | 117 | <i>Pou Hei Chan, Wei Teng Sin, Lei Chon Weng</i>
Mentors: Byung-Cheol Min, Pou Ut Chan |
| 103 | <i>Aidan Anastario, Manav Bhasin, Chi-Jui Lin, Dheepa Hari, Jun Lim, Xinyi Zhang</i>
Mentors: Nan Kong, Nicole Adams | 118 | <i>Meredith Chasse, Grace Gochnauer</i>
Mentors: Jill Newton, Signe Kastberg |
| 104 | <i>FNU Archie, Harry Lee, Jacob Montrose</i>
Mentors: Garam Kim, Eduardo Barocio | 119 | <i>Ian Chen</i>
Mentors: Yang Yang |
| 105 | <i>Lynley Arnholt, Alec Pannunzio, Gloria Cheng, Colleen Cole, Katharine Czech, Summer Fateley, Jackie Freeman, Emily Rastovski, Lucas Pedersen, Julie Wasyliv</i>
Mentors: Laura Moffat | 120 | <i>Madison Chin</i>
Mentors: Amanda Seidl, Erica Hill |
| 106 | <i>Rohan Aryan, Rahul Saproo</i>
Mentors: Seema Mattoo, Sherlene Brown | 121 | <i>Ronnie Cutler</i>
Mentors: Hugo Samayoa Oviedo, Julia Laskin |
| 107 | <i>Elliot Basem, Alexander Suppiah, Daniel Qi, Nachiketh Yellapragada</i>
Mentors: Eric Williamson | 122 | <i>Marissa Davide, Azza Sumait</i>
Mentors: John Peterson, Sutton Hathorn |
| 108 | <i>Grace Beehler</i>
Mentors: Kameron Moding, Elizabeth Kielb | 123 | <i>Maggie Dong</i>
Mentors: Katie Jarriel |
| 109 | <i>Ancy Biju</i>
Mentors: Yujie Shan | 124 | <i>Samantha Dreussi, Jinrae Kim</i>
Mentors: Cole Nelson, Mark Johnson |
| 110 | <i>Elliot Bissman</i>
Mentors: Rebecca Ciez, Kelsey Bischoh | 125 | <i>Adrien Dubois, Aarohi Panzade, Jasper Koliba, Rosemary Ajish</i>
Mentors: David Purpura, Avery Closser |
| 111 | <i>Oliver Boettger, Niels Van Ritbergen, Lorenzo Cacciapuoti, Wilson Wong, Alexander Beal</i>
Mentors: Mark Johnson, Cole Nelson | 126 | <i>Molly Dye, Emilie Chadwell</i>
Mentors: Zada Anderson, Mitchell Sanchez, Thomas Everett, Bradley Duerstock |
| 112 | <i>Vladimir Bovkis</i>
Mentors: Qian Wang | 127 | <i>Garret Eatinger, Pedro Pinto</i>
Mentors: Matthew Swabey, Jaeun Kim |
| 113 | <i>Sean Brown</i>
Mentors: Rabern Simmons | 128 | <i>Sarah Eckrote</i>
Mentors: Lavanya Reddivari, Vignesh Nathan |
| 114 | <i>Gina Canino-Quiñones</i>
Mentors: Kristine Marceau, Amy Loviska | 129 | <i>Joseph Eisenberg</i>
Mentors: Gang Shao |
| | | 130 | <i>Aya Elhag</i>
Mentors: Sandeep Ravala, John Tesmer |
| | | 131 | <i>Any Emerson</i>
Mentors: Jake Hosen, Ken Chong, Zaven Arra |
| | | 132 | <i>Rebecca Eyrick</i>
Mentors: Ellen Wells |

- 133 *James Fazioli*
Mentors: Jonathan Pasternak, Erin Ison, Margaret Mulligan, Ryan Cabot
- 134 *Mia Fleisher-de Kozan*
Mentors: Aaron Bowman, Anke Tukker, Jennifer Schmitz
- 135 *Kallie Fox*
Mentors: David McElhattan
- 136 *Yang Fu*
Mentors: Nicholas Gallina, Arun Bhunia
- 137 *Brooklynn Fugate, Jessica Kofman, Luke Lenz, Thomas Greer*
Mentors: Alejandro Benítez De la Riva
- 138 *David Gonzalez, Peter Kim*
Mentors: Matthew Swabey
- 139 *Shruti Goyal*
Mentors: Funing Li
- 140 *Adyson Gregory*
Mentors: Barbara Young, Hannah Bulow
- 141 *Mackenzie Greulach, Sofia Hrubciak, Elizabeth Salwitz*
Mentors: Andrea DeMaria
- 142 *Leah Griffin*
Mentors: Rebekah Shupe, Songlin Fei
- 143 *James Grimm*
Mentors: Katie Jarriel
- 144 *Meghan Gron, Conor McCarthy, Saichandana Pothireddy, Blake Iftiger, Mihika Saxena, Hongyi Shen, Adit Shah*
Mentors: Nachiket Vatkar
- 145 *Mahesh Gupta*
Mentors: Patrick Duffy, Irfan Zaidi, Jill Neal
- 146 *Emma Hall*
Mentors: Kathryn Brownell
- 147 *Moses Hamm*
Mentors: Vitaliy Rayz, Neal Patel
- 148 *Nina Hawkins*
Mentors: Jo Davisson, Tianqi Zhao, Vallabh Suresh
- 149 *Max Hess, Audrey Ward*
Mentors: Guofan Shao, Keith Woeste, Aishwarya Chandrasekaran
- 150 *Ben Holland*
Mentors: Humaira Gowher, Ming He
- 151 *Sophia Horn*
Mentors: Meredith Scherer, Tyler Hoskins
- 152 *Zhirui Hou*
Mentors: Santiago Torres Arias
- 153 *Yi-Fang Hsiung, Troy Wu*
Mentors: Sarang Pramod, Mark Johnson
- 154 *Guillaume Hu, Chun Yi Liu*
Mentors: Sarang Pramod, Mark Johnson
- 155 *Rongbo Hu*
Mentors: Abolfazl Hashemi, Zijian He
- 156 *Joseph Huang, Neil Brown, Julia Eifert, Andrew Hufford, Bruna Jasinowodolinski, Raveena Manivannan, Kaleb Lee, Tanishaa Shah, Aditya Sinha*
Mentors: Edward Delp, Carla Zoltowski
- 157 *Alexandra Hughes, Meagan DeMark, Ashley Bolen, Kayra Ucpinar*
Mentors: Andrea DeMaria, Laura Schwab-Reese, Kathryn Seigfried-Spellar
- 158 *Peyton James*
Mentors: Risa Cromer
- 159 *Lucas Johnson*
Mentors: Marxa Figueiredo, Ying Cheng Chen
- 160 *Megan Johnson*
Mentors: Safia Janjua
- 161 *Saniya Kamuni*
Mentors: Fiona Wang
- 162 *Grace Katz, Srihitha Kurapati*
Mentors: Rafael Lang, Juehang Qin
- 163 *Ethan Kessel*
Mentors: Eduardo Barocio
- 164 *Paing Khant, Junpei Ota, Jaya Hari, Akshata Manjunatha, Akash Kumar, William Jiang, Stephen Iwu, Yunfeng Jia, Qingwei Li*
Mentors: Yung-Hsiang Lu
- 165 *Soomin Kim*
Mentors: Byung-Cheol Min, Go-Eum Cha
- 166 *Erik Kocinare, Abhishek Kini, Austin Adkins, Caden Kuang*
Mentors: Shreya Ghosh
- 167 *Michael Kuczajda*
Mentors: Pamela Sari
- 168 *Anshul Kulkarni, Suyash Mishra, Aayush Patel*
Mentors: Shreya Ghosh, Samuel Labi
- 169 *Anne Kutemeier*
Mentors: Rod Allrich

- 170 *Jueqing Li*
Mentors: Jill Newton
- 171 *Yichi Liu, Colin Mcgeary, Samuel Yang, Connie Kang*
Mentors: Minghao Sun, Abolfazl Hashemi
- 172 *Santiago Lopez*
Mentors: Alex Ma, Botao Du
- 173 *Libby Loprete*
Mentors: Jonathon Day
- 174 *Madyson M Walker*
Mentors: Daniel Kim
- 175 *Taylor Main*
Mentors: Senay Simsek, Kristin Whitney
- 176 *Rachel Mendez*
Mentors: Katie Jarriel
- 177 *Addy Messerly*
Mentors: Ximena Bernal, Andrew Mularo
- 178 *Sydney Moeller*
Mentors: Ximena Bernal, Shilpi Singh
- 179 *Emily Morales Liddiard*
Mentors: Ignacio Camarillo
- 180 *Olivia Moreno*
Mentors: Dennis Savaiano, Tzu Wen Cross, Tracy Eaton
- 181 *Caleb Mull, FNU Archie, Harry Lee*
Mentors: Garam Kim
- 182 *Chinelo Nnatubeugo*
Mentors: William Graziano, Regina Henares
- 183 *Chelsea O'Donnell*
Mentors: Marcial Gonzalez
- 184 *Ronald Or*
Mentors: Erin Hennes, Taeik Kim
- 185 *Manas Paranjape, Harmya Bhatt*
Mentors: Romila Pradhan, Gaurav Nanda
- 186 *Abhirakshak Raja, Seungkeun Lee, Savreen Kaur*
Mentors: James Davis
- 187 *Alyssa Smith*
Mentors: Jonathan Pasternak, Erin Ison
- 188 *Kaitlyn Sycko*
Mentors: Alexander Kling
- 189 *Summer Thomlison*
Mentors: Jonathan (Alex) Pasternak, Devon Anderson, James Markworth
- 190 *Matthew Tolla, Soham Agarwal, Edison Liao, Marvin Lim, Yufeng Qian, Jordan Srinivasan, Mejebi Uwatse*
Mentors: Carla Zoltowski, Edward Delp
- 191 *MacKenzie Ulrey, Tze Yao Yap, Jill Merritt*
Mentors: Gregory Fraley, Jeff Lucas, Jenna Schober
- 192 *Vlada Volyanskaya, Ashvin Iyer, Colby Acton, Enze Jiang, Jinen Setpal, King Yang, Mustafa Albahrani, Nishant Nair, Vinay Jagan*
Mentors: Zichen Miao, Wei Zakharov, Qiang Qiu
- 193 *Alexandria Warren*
Mentors: Daniel Suter, Gentry Andrews
- 194 *Ziqi Yao, Haley O'Neal*
Mentors: Zhixu (Rick) Yang, Franki Kung
- 195 *Madison Yates*
Mentors: Peristera Paschou, Pritesh Jain
- 196 *Sydney Clifford, Elizabeth Hoffman*
Mentors: Claire Pfeffer, Gagan Mall, Brittany L. Allen-Petersen

AFTERNOON POSTER SESSION | 1:00PM-2:30PM

- 200 *Zoe Alexander*
Mentors: Ximena Arriaga
- 201 *Steven Andreas, Xinyu Yang, Zhaoyu Jin*
Mentors: Mark Johnson, Matthew Swabey, Cole Nelson
- 202 *Anthony Bovenschen, Nicholas Pecoraro*
Mentors: Jae Hong Park, Li Liao, Subin Han
- 203 *Reni Boyarov*
Mentors: Estuardo Robles
- 204 *Chris Buntin*
Mentors: Greg Michalski
- 205 *Emma Carosone*
Mentors: David Purpura, Patrick Ehrman, Inga Nordgren
- 206 *Rachel Chen, Matthew Leight, Xipeng Wang, Yuting Xiao, Mengting Xu, Mason Chung, Max Yee*
Mentors: Minghao Sun, Abolfazl Hashemi
- 207 *Joley Clodfelter, Natalia Figueroa*
Mentors: Genell Ebbini
- 208 *Brandon Cole*
Mentors: Cole Nelson

- 209 *Grace Cook*
Mentors: Katie Jarriel
- 210 *Benjamin Deadman*
Mentors: Katie Jarriel
- 211 *Emily Deldar, Sophia Hagedorn*
Mentors: Francoise Brosseau-Lapre, Itzel Matamoros Santos
- 212 *Rugved Dikay*
Mentors: Konstantina Gkritza, Konstantinos Flaris
- 213 *McKenna Eichenauer*
Mentors: Robin Tanamachi, Jacob Bruss
- 214 *Maya Federle*
Mentors: Deva Chan, Douglas Brubaker
- 215 *Michaela Fennell, Annie Johnson, Celia Whisler*
Mentors: Genell Ebbini
- 216 Withdrew.
- 217 *Mun Hong Fong*
Mentors: Gaurav Chopra
- 218 *Joy Gao*
Mentors: Chengcheng Tao
- 219 *Braden Garretson*
Mentors: Danny Milisavljevic
- 220 *Maya Godbole*
Mentors: Hyowon Lee, James Nolan
- 221 *Samuel J. Gray*
Mentors: Paige Frazier
- 222 *Thomas Greer*
- 223 *Marissa Hammett, Sydney Terrell, Abrianaa Kidd, Angela Atwell*
Mentors: Inna Abramova
- 224 *Caden Helfrich*
Mentors: Alex Pasternak
- 225 *Sarah Hofmann, Noelmi Ulloa, Erica Long*
Mentors: Timothy Johnson, Eunice Centeno, Tessa Sheets, Carmen Wickware
- 226 *Kal Holder*
Mentors: Daniel Fajardo
- 227 *Daniel Hristov*
Mentors: Hugo Samayoa Oviedo, Julia Laskin
- 228 *Zachariah Hunt*
Mentors: Alexander Francis
- 229 *Blake Iftiger, Mihika Saxena, Sriranga Kaluvakala, Meghan Gron, Adit Shah, Conor McCarthy, Saichandana Pothireddy, Hongyi Shen*
Mentors: Nachiket Vatkar, Wenzhou Wu
- 230 *Julian Kang, Hana Wong, Hansoo Kim*
Mentors: Joerg Appenzeller, Mark Johnson
- 231 *Logan Kitts, William Lock Falcon*
Mentors: Gudrun Schmidt
- 232 *Mikayla Klemp*
Mentors: Adriana Harmeyer, Amy Childress
- 233 *Xilin Li*
Mentors: Bhunia Arun K, Dongqi Liu, Nicholas Leo Frank Gallina
- 234 *William Lock Falcon, Logan Kitts*
Mentors: Gudrun Schmidt
- 235 *Erica Long*
Mentors: Timothy Johnson, Eunice Centeno
- 236 *Alec Lucas*
Mentors: Ana Ulloa Gomez, Lia Stanciu
- 237 *Meredith Lucero, Payton Hartman, Ava Torrance, Deforest Williamson*
Mentors: Sandra Sydnor, Zachary Carlson
- 238 *Drew Lundin, Nathan Arnold, Alex Hanna, Amir Issa, Stanley So, Rohan Rajesh, Shrijan Swaminathan*
Mentors: James Goppert, Nicole Adams, Nan Kong
- 239 *Micaela Menchaca*
Mentors: Signe Kastberg, Helen Bentley, Stephanie Oudghiri
- 240 *Emma Miller*
Mentors: Robin Tanamachi
- 241 *Maisha Mumtaz*
Mentors: David Warsinger, Andrew Fix, James Braun
- 242 *Robert Murphy, Pranav Jagada, Jimmy Jin*
Mentors: Mark Johnson, Mitch Arndt, Cole Nelson
- 243 *Ryan Navarre*
Mentors: Robin Tanamachi
- 244 *Elbek Nazarov, Akshat Verma*
Mentors: Guofan Shao, Keith Woeste
- 245 *Long Nguyen*
Mentors: Sarang Pramod

- 246 *Tyler Nord, Vebjorn Moskvil, Abhirama Rachabattuni, Ata Toraman*
Mentors: Katherine Fowee Gasaway, Alina Alexeenko, Steven Pugia, Jesus Meza Galvan
- 247 *Matthieu Opdyke, Eric O'Keefe, Diego Montes, Hadi Ahmed, Corey Auerbach, Joao Paulo Ymayo, Andrew Swanback, Evan Kamm, Leonard Jung, Jake Mohler*
Mentors: Shreyas Sundaram, Charles D'Onofrio
- 248 *Kayla-Marie Otero*
Mentors: Lana Newhart-Kellen, Harold Cooper, Erika Kvam
- 249 *Akif Ozer*
Mentors: Umit Karabiyik, Mohammad Meraj Mirza
- 250 *Lucas Papai*
Mentors: Catherine Searle
- 251 *Conner Partaker, Josephine Haydock, Larkin Nickle, Lily Peck, Annabelle Pitt, Palak Prashant, Nicholas Ryan*
Mentors: Kristen Bellisario
- 252 *Nicholas Pecoraro, Anthony Bovenschen*
Mentors: Jae Park, Subin Han, Li Liao
- 253 *Stanislav Pelipad*
Mentors: Lucas Cohen
- 254 *Thwandall Philemon, Daanish Suhail, Zijie Mai, Ryan Sui, Elbek Nazarov, Vanessa Farrell*
Mentors: Chih-Chun Wang, David Love, James Krogmeier, Sameer Mathad
- 255 *Saichandana Pothireddy, Meghan Gron, Blake Iftiger, Conor McCarthy, Mihika Saxena, Hongyi Shen, Sriranga Kaluvakala, Adit Shah*
Mentors: Nachiket Vatkar, Wenzhou Wu
- 256 *Graham Ragland*
Mentors: Deva Chan, Rahaf Salim
- 257 *Kendall Raley, Ashley Buening, Emerson Ladig, Mark DeLeon*
Mentors: Inna Abramova
- 258 Moved to virtual presentation #317.
- 259 *Britney Ramos*
Mentors: David Rollock, Adilene Osnaya
- 260 *Erik Raume, Vedha Srigiri, Lucas Manalo, Anna Rosha, Hyunseok (Chris) Hong*
Mentors: Dionysios Aliprantis, Dakota Hamilton, Loraine Navarro
- 261 *Madilyn Reid*
Mentors: Shihuan Kuang, Xiyue Chen
- 262 *Becca Reinecke, Katherine Kneeland, Usman Chaudhary, Andy Le, Vishnu Pillai, Benjamin Roeder, Elliot Wong, William Whitsitt*
Mentors: Katherine Fowee Gasaway, Andrew Binder, Alina Alexeenko, Anthony Cofer
- 263 *Becca Reinecke, Ishaan Rao, Mark Kosmerl, Ashwin Limaye, Samuel Smith, Sathvik Srikanth, Sophie Witters*
Mentors: Katherine Fowee Gasaway, Alina Alexeenko, Andrew Binder, Anthony Cofer
- 264 *Elizabeth Riegle, Nicholas Powers, Kayla Comer, Jiwoo Kim, Krishna Bendishankara, Shaan Chanchani, Megan Parsons, Lydia Stinnett*
Mentors: Amy Reibman, Haoyu Chen
- 265 *Alexia Rodrigues, Alex Liu*
Mentors: Pengyi Shi
- 266 *James Rooney, Jacob Lindsey*
Mentors: Tony Hazbun
- 267 *Ibrahim Saeed, Pongpatapee Peerapatanapokin, Matuesz Romaniuk*
Mentors: James Davis, Wenxin Jiang
- 268 *Mihika Saxena, Conor McCarthy, Saichandana Pothireddy, Hongyi Shen, Meghan Gron, Blake Iftiger, Adit Shah*
Mentors: Nachiket Vatkar
- 269 *Revanth Krishna Senthilkumaran*
Mentors: Byung-Cheol Min, Wonse Jo
- 270 *Joshua Sexton*
Mentors: Emma Vanderlaan, Sherry Harbin, Adrian Buganza Tepole
- 271 *Audrey Shirley*
Mentors: Gouri Prabhakar
- 272 *Nathan Skripac, Charan Senthil Kumar, Yuvraj Dahiya, Rachel White, Nicholas Rasmusson*
Mentors: Shreya Ghosh, Richard Ajagu
- 273 *Colby Smock*
Mentors: Aaron Thompson
- 274 Withdrew.
- 275 *Shashank Sridhar, Amritanshu Ranjan, Pranav Kolady, Aaditya Pai, Sanjeev Kummrapurugu, Harsh Ajwani*
Mentors: Shreya Ghosh, Samuel Labi, Richard Ajagu
- 276 *Sophie Stahl*
Mentors: Leanne Nieforth, Sarah Leighton

- | | | | |
|-----|--|-----|---|
| 277 | <i>Hasan Sultan, Aakanksha Shripal, Manas Paranjape, Disha Maheshwari, Miyu Hino, Kalyan Salkar, Minrui lu</i>
Mentors: Charles D'Onofrio | 287 | <i>Muhan Wang, Conrad Otterbacher, Trang Nguyen</i>
Mentors: Maria Olivero, Yang Yang |
| 278 | <i>Julia Suter, Anna Strong</i>
Mentors: Carolyn McCormick | 288 | <i>Ruth Wei</i>
Mentors: Caitlin Proctor, Aliya Ehde, Liam Johnson |
| 279 | <i>Julia Suter, Anna Strong</i>
Mentors: Carolyn McCormick | 289 | <i>Tyler Williams, Andrew Ferrer</i>
Mentors: Dianne Little, Paula Sarmiento |
| 280 | <i>Erik Sveen</i>
Mentors: Miranda Weigand | 290 | <i>Sydney Williams</i>
Mentors: Estuardo Robles |
| 281 | <i>Emily Testin, Maverick Broviak</i>
Mentors: Liang He | 291 | <i>Anastasia Wong, Giovanni De Geronimo, Delany Koi, Aryan Shahu, Yashashwini Singh</i>
Mentors: Abraham Koshy, Andreas Jung |
| 282 | <i>Emily Testin, Maverick Broviak</i>
Mentors: Liang He, Karthik Ramani | 292 | <i>Joseph Woo, Arav Tewari, Saad Sharief</i>
Mentors: James Davis, Purvish Jajal |
| 283 | <i>Mason Trenaman Jr., Shep Dick, Evan Holland, Jack Filpi</i>
Mentors: Richard Dionne | 293 | <i>Kayla Wrobleski</i>
Mentors: Richard Kuhn, Jacqueline Anderson |
| 284 | <i>Isabel Turner</i>
Mentors: John Radcliffe, Jonathan Pasternak, Brian Richert | 294 | <i>Kunal Zalani</i>
Mentors: Katie Jarriel |
| 285 | <i>Jacob Valdez, Aubrey Gatewood, Max Lantz, Pruthvi Patel</i>
Mentors: Katherine Fowee Gasaway, Alina Alexeenko, Steven Pugia, Jesus Meza Galvan | 295 | <i>Wenjia Zhang</i>
Mentors: Qian Wang |
| 286 | <i>Marissa Van Sickle</i>
Mentors: Olga Lyanda-Geller | 296 | <i>Lejia Zhou</i>
Mentors: Qian Wang |
| | | 297 | <i>Xingmei Zhu, Yuto Tanaka</i>
Mentors: Kate Gasaway, Jesus Meza, Steven Pugia |

SEE YOU IN THE SPRING!

February 2: Spring Undergraduate Research Roundtable – Virtual via Discord

Mid-March: Undergraduate Research Pitch Competition – In-person

April 11-18: Spring Undergraduate Research Conference

Poster symposium on April 11 and Research talks on April 13

Submission site opening soon.

April 20: Celebrate Thinkers, Creators, & Experimenters – In-person

More information coming soon.

Spring 2023 Undergraduate Research Seminars – Virtual via Zoom

Topics and dates announced January 2023. Submit potential topics to ugresearch@purdue.edu.

**SPECIAL APPRECIATION TO THE CONFERENCE PLANNING COMMITTEE'S
UNIT DELEGATES FOR SUPPORT IN ORGANIZING THIS EVENT**

RESEARCH TALKS

SESSION 1: 9:30AM-10:00AM

ROOM: STEW 214A

9:30 Children's Picture Books for Socio-emotional Learning in the Context of Literacy, Diversity, and Equity
400 *Yimei Xiong*
Mentors: Christy Powell, Helen Bentley, Wonki Lee

9:45 Are there associations between attentional disengagement, joint attention, and language abilities in toddlers and young children with autism spectrum disorder?
401 *Selah Schieber*
Mentors: Brandon Keehn

ROOM: STEW 214B

9:30 Quantifying Mechanobiology of Synoviocytes Under Cyclic Stretch
402 *Maya Alborn*
Mentors: Deva Chan, Aritra Chatterjee, Clarisse Zigan

9:45 Pre-Silicon Verification of Digital IP Library Using Universal Verification Methodology
403 *Fan Jing Hoon, Pranav Srisankar, Maxwell Michalec, Duncan Van*
Mentors: Sarang Pramod

ROOM: STEW 214C

9:30 Chromatin Remodeling Complexes in Androgen Deprivation Induced Neuroendocrine Prostate Cancer
404 *Sam King*
Mentors: Emily Dykhuizen, Surbhi Sood, Sandra Ordonez

9:45 A Gaussian Process Model for Spatio-Temporal Ozone Distribution in California
405 *Jerry Gu*
Mentors: Guang Lin

SESSION 2: 10:00AM-11:00AM

ROOM: STEW 214A

10:00 Utilization of Spatial Analysis to Investigate IU Health Arnett's High Patient Fall Rate
406 *Colleen Cole*
Mentors: Katie Jarriel

10:15 Home-based leg heat therapy to improve walking performance in elderly individuals
407 *Sidharth Reddy*
Mentors: Ro Bohyun, Bruno Rose

10:30 Digitalizing Delphi: Educating Audiences Through Virtual Reconstruction
408 *Kate Koury*
Mentors: Katie Jarriel, George Takahashi, Arne Flaten

10:45 3D Printed highly Sensitive Pressure Sensors
409 *Mitesh Mylvaganan*
Mentors: Sunghwan Lee

ROOM: STEW 214B

- 10:00 Real-Time Operating System Implementation on Control of RoboMaster Competition Robot
410 *YuXi Liu*
Mentors: Abolfazl Hashemi, Zijian He
- 10:15 Internet of Things and Digital Twinning with TENG devices
411 *Conor McCarthy, Meghan Gron, Saichandana Pothireddy, Blake Ifitger, Mihika Saxena*
Mentors: Nachiket Vatkar
- 10:30 Implication of Modified Total Oxidizable Precursor (TOP) Assay for detecting Per- and Polyfluoroalkyl substances (PFAS) in complex media
412 *Leyan Peng*
Mentors: Youn Jeong Choi, Caroline Alukkal
- 10:45 Proximal Femur Trabecular Orientation in Hindlimb Unloaded Murine Models
413 *Anisha Rath*
Mentors: Deva Chan, Elizabeth Blaber, Zachary Davis

ROOM: STEW 214C

- 10:00 Microfinancing and Entrepreneurship in Cocoa Refinement in Côte d'Ivoire
414 *Erin Soro*
Mentors: Colin Sullivan
- 10:15 Changed to Poster #196
415
- 10:30 Generation of IFC compliant models of bridge infrastructure assets using lab generated OBJ data
416 *Sankhya Gowda*
Mentors: Jiansong Zhang
- 10:45 Adaptable Human Detection
417 *Robert Sego, Tiffany Yu, Xilai Dai, Diya Prasanth, Anisha Chawla, Kaden Merrill, Alex Weber, Natasha Gundapaneni, Patrick Li*
Mentors: Carla Zoltowski, Edward Delp

ROOM: STEW 214D

- 10:00 Linguistic Changes in Russian in Turbulent Times
418 *Renee Forfa*
Mentors: Olga Lyanda-Geller
- 10:15 Laughter and Madness: The Comic Horror of Evil Dead II
419 *David Gowan*
Mentors: Elena Coda
- 10:30 English-Russian Philosophical Glossary for Aleksei Losev
420 *Michael Linge*
Mentors: Olga Lyanda-Geller
- 10:45 Quantification and comparison of bacterial communities of healthy and BRD-affected dairy cattle
421 *Noelmi Ulloa*
Mentors: Timothy Johnson, Eunice Centeno

SESSION 3: 11:00AM-12:00PM

ROOM: STEW 214A

- 11:00 Mechanisms of Alcohol-Facilitated Laboratory Aggression among High-Risk Couples
422 *Emily Khoo*
Mentors: Daniel W. Oesterle, Christopher Eckhardt
- 11:15 Understanding the Menstrual Health Needs of People Experiencing Homelessness during the COVID-19 Pandemic in Lafayette, Indiana
423 *Emma Schnolis, Jaclyn Frank, Emily Otten, Anukriti Arora*
Mentors: Andrea DeMaria, Rebecca Martinez, Natalia Rodriguez, Risa Cromer
- 11:30 Racial and Ethnic Disparities in Service Referral and Use Among High-Risk Children Diagnosed with Autism Spectrum Disorder
424 *Aaliyah Saunders, Victoria Bozinovski*
Mentors: Brandon Keehn
- 11:45 The Role of BIPOC Parents in Diversifying Children's Literature
425 *Kayla Neal*
Mentors: Christy Wessel-Powell

ROOM: STEW 214B

- 11:00 Purdue SoCET: Design Flow
426 *Wilbur Chen, Tam Le, Joseph Eisenburg, Yiyun Wang*
Mentors: Raghuraman Kottaiyur, Mark Johnson
- 11:15 SWARMS: Multi-Agent Control Simulation Platform
427 *Amikosh Dube, Michael Lock, Anam Nasim, Sullivan Cisco, Sohan Pramanik, Reed Baker, Annie Mitten*
Mentors: Shreyas Sundaram, Tong Yao
- 11:30 Static CMOS Implementation of Polymorphic Logic
428 *Malcolm McClymont, Jacob Chappell*
Mentors: Mark Johnson, Joerg Appenzeller, Boyuan Chen
- 11:45 Pursuing the development of antifouling implantable biosensors and novel bioadhesives
429 *Carl Russell III*
Mentors: Hyowon Lee, JongCheon Lim, Angel Enriquez

ROOM: STEW 214C

- 11:00 Characterizing Graphing Literacy in Undergraduate Biology Major and Non-Major Students
430 *Kal Holder*
Mentors: Nouran Amin, Stephanie Gardner
- 11:15 "Sometimes I feel uglier than ever": Influences on Internal and External Body Image
431 *Alexandra Hughes, Maia Lynch, Emily Otten*
Mentors: Andrea DeMaria
- 11:30 Tumor-associated antigen surface density in mechanisms of CAR T cell activation threshold-setting
432 *Kenneth Rodriguez-Lopez*
Mentors: Shalini Low-Nam, Kevin Scrudders
- 11:45 Synthesis of Signaling Hormones *Streptomyces rochi* butenolides (SRBs)
433 *Gracie Sanders*
Mentors: Elizabeth Parkinson, Haylie Hennigan

ROOM: STEW 214D

- 11:00 Farmer Perspectives on Diversified Agriculture
434 *Isabel Jensen*
Mentors: Emily Usher
- 11:15 Anti-Pathogenic Activity of Concentrated Dairy Ingredients on Porcine Rotavirus
435 *Chenhai Li*
Mentors: Arun K Bhunia, Rishi Drolia, Dongqi Liu
- 11:30 DWORF's Impact on hiPSC-Cardiomyocytes
436 *Alexandra Ware*
Mentors: Jake Megna, Scott Macdonnell
- 11:45 Designing and Developing a Camera System for Automated Tree Measurement
437 *Robert Stewart, Aidan Crowley*
Mentors: Guofan Shao

SESSION 4: 1:15PM-2:00PM

ROOM: STEW 214A

- 1:15 Elementary Students' Conceptions of Programming on A Sorting Task
438 *Sirou Wang*
Mentors: Laura Bofferding
- 1:30 Future of self-driving car: a blessing or a curse?
439 *Amanda Huang*
Mentors: Qian Wang
- 1:45 Associations of Motor Skills with Inhibitory Control and Creativity in Preadolescent Children
440 *Qiwei Zhu, Mark Naguib*
Mentors: Shih-Chun Kao, Laura Claxton

ROOM: STEW 214B

- 1:15 Earth Remote Sensing with Signals of Opportunity
441 *Andrew Brandt, Isaac Gelman, Tanish Sanghavi, Eli Bohlander*
Mentors: James Garrison, Leo Li
- 1:30 Human Olfactory Response to Volatile Organic Compound Emissions from Household and Personal Care Products
442 *Zachary Limaye*
Mentors: Nusrat Jung, Brandon Boor, Jordan Cross
- 1:45 Social Justice and Equity as Operating Range: Enriching Success Pathways for Underrepresented Minority Students
443 *Mackenzie Richards*
Mentors: Barrett Caldwell

ROOM: STEW 214C

- 1:15 Feasibility and Anticipated Acceptability of Community Health Worker-facilitated HPV Self-sampling for Cervical Cancer Screening in Lake County, Indiana
444 *Alyssa Arreola, Sathveka Sembian*
Mentors: Natalia Rodriguez, Tiwaladeoluwa Adekunle, Layla Claire, Lara Balian

- 1:30 Tourism Insights: ESG in Lodging and Hospitality
445 *Emily Cassanmagnago*
 Mentors: Jonathan Day
- 1:45 The Current Conscription System in the Republic of Korea and Its Explicit and Implicit Problems: It is Time to Adjust
446 *MinJae Choi*
 Mentors: Qian Wang

SESSION 5: 2:00PM-3:00PM

ROOM: STEW 214A

- 2:00 Examining the Correlation of Brownfield and Superfund Sites with Health Outcomes in Indiana at the Census Tract Level
447 *Sharon Kulali*
 Mentors: Ellen Wells
- 2:15 Openness in Social Judgments of Diverse Others
448 *Emily Fields*
 Mentors: Sang Woo, Louis Hickman, Cavan Bonner
- 2:30 Alignment Among U.S. States' Early Mathematics Learning Guidelines: An Expanded Review
449 *Abigail Callis*
 Mentors: David Purpura, Erica Zippert
- 2:45 Math Aversion and Math Anxiety: The Psychology Behind Why Math is Unpopular
450 *Arija Simonaitis*
 Mentors: Sean Lane, Mairead Willis

ROOM: STEW 214B

- 2:00 Environmental Testing and Computational Modeling for NASA Solar Cruiser Sail Context Camera
451 *Tasveen Chopra, Trent Fatur, Isha Shamim, William Davis, Justin Lin, Joao Pedro Bacchi, Ian Veak, Rhea Pahuja, Emma Fisk*
 Mentors: Katherine Fowee Gasaway, Alina Alexeenko, Andrew Binder, Anthony Cofer
- 2:15 Experimental Evaluation of changes in HVAC Filter Performance During Rapid Aerosol Loading
452 *Elliot Cram, Laura Ajala*
 Mentors: Chunxu Huang, Brandon Boor, Nusrat Jung
- 2:30 Child Automated Speech-to-Text Team - General Overview
453 *Adrien Dubois, Aakanksha Shripal, Aarini Panzade, Aarohi Panzade, Anish Bhowmik, Brian Ha, Jasper Koliba, Rosemary Ajish*
 Mentors: David Purpura, Avery Closser
- 2:45 Characterization of Particulates in Indoor Environments for Infants
454 *Brian Magnuson*
 Mentors: Brandon Boor, Satya Patra, Jordan Cross

ROOM: STEW 214C

- 2:00 Peroxide-Initiated Hydrophosphination of gem-Difluoroalkenes.
455 *Ryan Lee*
 Mentors: Andrew Intelli, Ryan Altman

- 2:15 Laboratory screening of sorghum lines for incompatibility, a post-attachment resistance mechanism to the parasitic weed *Striga hermonthica*
456 *Cameron Matthews*
 Mentors: Patrick Rich, Gebisa Ejeta, Adedayo Adeyanju, Nathan Bowser
- 2:30 Structural and Functional Characterization of Phospholipase C β 3
457 *Kennedy Outlaw*
 Mentors: Angeline Lyon, Isaac Fisher
- 2:45 Determining the binding between PLC epsilon and RhoA using the nanoluciferase assay
458 *Siddhi Shetty*
 Mentors: Angeline Lyon, Ketaki Mahurkar

SESSION 6: 3:00PM-3:45PM

ROOM: STEW 214A

- 3:00 Understanding Young People's Child Maltreatment Disclosure Experiences: A Qualitative Content Analysis of Family Violence Discussions on Social Media
459 *Anneliese Williams, Amelia Williams*
 Mentors: Laura Schwab-Reese
- 3:15 Lane Detection
460 *Pume Tuchinda, Daniyaal Rasheed, Justin Chan, Mingyu Kim, William Stevens*
 Mentors: Edward Delp, Carla Zoltowski
- 3:30 Currency Detection using Image Processing Techniques
461 *Sohee Kim, Anvit Sinha, Katherine Sandys, Joseph Lin, Daniel Choi, Kavin Sathishkumar, Leng Lohanakakul*
 Mentors: Edward Delp, Carla Zoltowski

ROOM: STEW 214B

- 3:00 Optimization of Ultrasonic Welding Parameters for Carbon Fiber Reinforced Thermoplastic Composite Plies
462 *Harry Lee*
 Mentors: Garam Kim, Eduardo Barocio
- 3:15 Immersible Sensor Development
463 *Yubo Song, Chih-Yao Chan*
 Mentors: Eui Won Bae, Iyll-Joon Doh

ROOM: STEW 214C

- 3:00 Understanding the Freezing Properties of Lunar Particle Suspension Droplets
464 *Mariana Aguilar, Katie Meves, Valeria Garcia*
 Mentors: Alexandria Johnson
- 3:15 Macroscopic Resistance Measurement Of Vanadium Dioxide During Metal Insulator Phase Transition
465 *Amit Rohan Rajapurohita*
 Mentors: Erica Carlson
- 3:30 Graph Neural Network Triggers for Tau3Mu Events at the HL-LHC
466 *Benjamin Simon*
 Mentors: Miaoyuan Liu, Pan Li, Jan-Frederik Schulte, Siqi Miao

VIRTUAL PRESENTATIONS

POSTERS

- 300 *Hadi Ahmed*
Mentors: Sarang Pramod, Cole Nelson
- 301 *Chloe Bohlander, Yushan Zhou, Emmy Huber, Ruolin Zhao*
Mentors: Sandra Sydnor
- 302 *Aneesh Chakravarthula Chakravarthula, Dain Kang, Dheeraj Kumar, Johnathan Kao, Ting-Han Chen, Zach Hunter*
Mentors: Gerhard Klimeck, Praveen Saxena
- 303 *Evan Chen, Paloma Arellano, Myung Sun Park, Hyoju Kang, Laula Huang, Shao Ning Huang*
Mentors: Shreya Ghosh
- 304 *Jiapei Chen*
Mentors: GuangJun Zhang, Ziyu Dong
- 305 *Peyton Edelbrock*
Mentors: Olga Lyanda-Geller
- 306 *Grant Goldenberg*
Mentors: Cole Nelson, Mark Johnson
- 307 *Te Yu Hsin, Hasan Sultan, Kevin Lin, Vishal Urs, Hrishav Biswas*
Mentors: Yung-Hsiang Lu, Nick Eliopoulos
- 308 *Iris Layadi*
Mentors: Denny Yu, Jing Yang
- 309 *Emmett Niemeyer*
Mentors: Sandro Matosevic
- 310 *Diane Santos, Audrey Birch*
Mentors: Amir Alwali, Elizabeth Parkinson
- 311 *Kelly Shin*
Mentors: Isabelle Vanhaezebrouck, Carlos Mendez Valenzuela
- 312 *Anna Szakats*
Mentors: Katie Jarriel
- 313 *Abigail Taylor*
Mentors: Spencer Headworth
- 314 *Pranav Veluri*
Mentors: Sutton Hathorn, John Peterson, Mark Johnson
- 315 *Xingjian Wang, Sreevickrant Sreekanth, Vignesh Charapalli, Li Chung Yang, Brendan Gleim, Uddipta Sarkar*
Mentors: Santiago Torres-Arias
- 316 *Yuzhe Wang*
Mentors: Lei Wang
- 317 *Jordan Ramirez, Shreya Dua, So Won Kim, Alisher Sultansikhov*
Mentors: Matthew Swabey, Jaeun Kim
- 318 *Sitong Chen*
Mentors: Matthew Lanham

RESEARCH TALKS

Analyzing High Cognitive Load To Optimize Nurse Decision Making

- 500** *Anusha Bhardwaj*
Mentors: Nicholas Anton, Guoyang Zhou, Denny Yu, Haozhi Chen

Online Databases of Geologic Formations of China, Indian Plate and Indochina, With Display onto Plate Reconstructions of the Asian Region for Any Phanerozoic Time Horizon

- 501** *Sabrina Chang*
Mentors: James Ogg, Aaron Ault, Wen Du, Sabin Zahirovic

502 Moved to Virtual Poster #318

Design, Layout and Implementation of Digital-to-Analog Converter using 2nd Order Delta-Sigma Modulation

- 503** *Ishmam Iqbal*
Mentors: Sutton Hathorn, Mark Johnson

Blockchain: Protecting Against the Newest Trend in Financial Crime

- 504** *Daniel Logan*
Mentors: Paula Conroy

Maternal Anxiety among Breastfeeding Mothers

- 505** *Megan Rach*
Mentors: Azza Ahmed

Efficient IEEE single precision Floating point multiplier hardware implementation

- 506** *Abinands Ramshanker*
Mentors: Mark Johnson

A for Aristocracy, Not Effort: An Examination of Meritocracy and Legacy Admissions

- 507** *Michaela Rice*
Mentors: Amanda Case

Improving the Online Time Scale Creator Experience Abstract

- 508** *Xander Shillings, Mahad Faruqi*
Mentors: James Ogg, Aaron Ault



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