

Welcome to the end-of-summer poster session showcasing the research projects of high school and undergraduate students who participated in summer research programs at NDSU.

Participating programs and labs include:

- North Dakota Governor's School
- Parents Involvement with Children, Nurturing Intellectual Curiosity in Science (PICNICS)
- Mechanical Engineering REU
- NDSU EXPLORE Summer Undergraduate Research Program
- Pollination Nation
- Summer Undergraduate Biomedical Research Program (SUBRP)
- Summer Undergraduate Research Experience (SURE)
- Ukrainian Summer Undergraduate Research Experience (USURE)
- Agribusiness and Applied Economics
- Computer Science
- Corrosion Engineering (CORE)
- Dr. Britt Heidinger Lab
- Dr. Chad Ulven Composite Group
- Dr. Mukund Sibi Lab
- Dr. Sanku Mallik Lab
- Dr. Zhikai Liang Lab
- NDSU ECE Sensor Group
- NDSU Soybean Breeding
- Rust Lab, Department of Plant Pathology
- USDA ENG Sensors Group

Posters ending in an odd number will present from 1:00-2:00 p.m. and posters ending in an even number will present from 2:00-3:00 p.m.

Welcome remarks by Dr. David Bertolini, Provost, and Dr. Ying Huang, Director of Undergraduate Research.

Posters:

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| #1 | Andres Aasheim , Ulven Composite Group <i>Compression Molding Thermoplastic Composite Panels from Thermoplastic Composite Plates</i> | Mentor(s): Dr. Chad Ulven, Eric Hall, Luke Gibbon |
| #2 | Parthiv Allirajan , Rust Lab, Department of Plant Pathology <i>Genetic analysis of rust resistance and purple stem traits in common bean</i> | Mentor(s): Dr. Upinder Gill |
| #3 | Colten Alme , SUBRP <i>Deep Learning in Genomics: Pioneering Disease Prediction through Advanced Bioinformatics</i> | Mentor(s): Dr. Harun Pirim |
| #4 | Annyka Anderson , Computer Science <i>Simon game</i> | Mentor(s): Ben Rybacki, Joseph Latimer |
| #5 | Kian Ansarinejad , NDSU EXPLORE <i>Using ML to predict Retroreflectivity Value of Traffic Signs</i> | Mentor(s): Dr. Armstrong Aboah |
| #6 | Saumya Balaji , Pollination Nation <i>The Tissue-Specific Effects of Sublethal Cold Stress on the Megachile Rotunda</i> | Mentor(s): Dr. Alex Torson |
| #7 | Claudia Bassi , SUBRP <i>Finite element modeling and quantification of cancer cells-substrate addition with fluidic force microscopy</i> | Mentor(s): Dr. Dinesh Katti |
| #8 | Adam Bendewald , SUBRP <i>The Kinetics of Coproheme III Trafficking in the Coproporphyrin-Dependent Heme Biosynthesis Pathway</i> | Mentor(s): Dr. Kenton Rodgers |
| #9 | Caedmon Benson , Pollination Nation <i>Does Using PFAS as a Stressor Modify the Effects of Imidacloprid on Drosophila melanogaster</i> | Mentor(s): Korie DeBardlabon, Dr. Arun Rajamohan |
| #10 | Alyssa Boyko , SUBRP <i>The use of Enedione as a Drug Prototype for Killing Cancer Cells</i> | Mentor(s): Allana Martins, Dr. Roberto Gomes |
| #11 | Naomi Brereton , Pollination Nation <i>How Repeated Cold Affects Alfalfa Leaf Cutter Bees</i> | Mentor(s): Dr. Andre Szejner-Sigal |

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| #12 | Gu Bu , PICNICS <i>Exploring the Effects of pH on MOF Stability</i> | Mentor(s): Zoe Armstrong |
| #13 | Nataliia Buhaichuk , USURE <i>Formation and Stabilization of PEGylated Zein Nanoparticles for Drug Delivery</i> | Mentor(s): Dr. Mohiuddin Quadir, Pratyusha Ghosh |
| #14 | Julian David Calixto Mahecha , Mech. Engineering REU <i>Assessment of Cognitive Impairment Among Patients Diagnosed with Parkinson's Disease using Machine Learning</i> | Mentor(s): Dr. Diana Lopez-Soto |
| #15 | Jessica Chen , CORE <i>Dual Purpose PIG for Liquid Pipelines</i> | Mentor(s): Dr. Ying Huang |
| #16 | Bridget Chukwu , Agribusiness and Applied Economics <i>Farmland and cash rent: Factors affecting each</i> | Mentor(s): Dr. Bryon Parman |
| #17 | Andrea Clarisse Corrales , NDSU EXPLORE <i>Temperature-Dependent Corrosion Inhibition of Soybean Extract on Carbon Steel in Acidic Medium</i> | Mentor(s): Dr. Eugene B. Caldon |
| #18 | Alexsandra Cudney , NDSU EXPLORE <i>Impact of Cardiac PPAR Alpha Signaling on the Lipid Droplet Proteome in Systemic Tissues</i> | Mentor(s): Dr. Natasha Fillmore |
| #19 | George Davisson , Mallik Lab <i>Azobenzene-incorporated polymersomes for control of targeted drug delivery to triple negative breast cancer</i> | Mentor(s): Rayat Hossain |
| #20 | Alexander Dirk , PICNICS <i>Surface Activity of Amylose-Inclusion Complexes: Towards Sustainable Personal Care Solutions</i> | Mentor(s): Dr. Andriy Voronov |
| #21 | Li Dufault , PICNICS <i>Regioselective ring-opening of cyclic imides</i> | Mentor(s): Drs. Gizele Celante & Roberto Gomes |
| #22 | Ella Eleven , Pollination Nation <i>Cuz Mom Said So: Percent Methylation in Early and Late Summer <i>M. rotundata</i></i> | Mentor(s): Joshua Rinehart |
| #23 | Dorsa Fereydoonpour , Mallik Lab <i>Key Role of Cancer Stemness Markers in Patient-Derived Triple-Negative Breast Cancer Cells</i> | Mentor(s): Dr. Sanku Mallik |
| #24 | Morgan Finneseth , SUBRP <i>Quantification and molecular characterization of extracellular vesicles</i> | Mentor(s): Dr. Jiha Kim |
| #25 | Arpita Ghosal , SUBRP <i>Liposome-mediated targeted co-delivery of paclitaxel and adavosertib for pancreatic cancer treatment</i> | Mentor(s): Dr. Buddhadev Layek |
| #26 | Joel Gradous , NDSU EXPLORE <i>Mobile Solar Panel Testing Platform</i> | Mentor(s): Dr. William Refling |
| #27 | David Ha , ND Governor's School <i>Generating Prostate Cancer 3D model system</i> | Mentor(s): Dr. Kalpana Katti |
| #28 | KyAnna Halmrast , NDSU EXPLORE <i>Cutting Baits, or Not? Predictors of Children's Persistence and Learning Strategies in Challenging Fishing Tasks</i> | Mentor(s): Dr. Wen Wang |
| #29 | Grace Hedstrom , Pollination Nation <i>Comparison of cryoprotectants in the cryopreservation of <i>Drosophila</i> salivary glands</i> | Mentor(s): Dr. Arun Rajamohan, Courtney Gula |
| #30 | Garrett Honzay , SUBRP <i>The Effects of Coproheme Decarboxylase Active Site Mutation K149A on Coproheme Binding and Reactivity</i> | Mentor(s): Dr. Gudrun Lukat-Rodgers |
| #31 | Faith Isaac , SUBRP <i>Extracellular Matrix in Angiotensin II Signaling Pathway</i> | Mentor(s): Dr. Sijo Matthew |
| #32 | Yuma Ishimura , USDA ENG Sensors Group <i>Integrating Radar Technology with Machine Learning</i> | Mentor(s): Dr. Umamaheswara Rao Tida |
| #33 | Jacee Johannsen , Ulven Composite Group <i>Fabrication of Fiberglass PET Blast Panels</i> | Mentor(s): Dr. Chad Ulven |
| #34 | Alecia Jorud , ND Governor's School <i>Improving Multiplex PCR</i> | Mentor(s): Dr. Glenn Dorsam |
| #35 | Liya Joshy , NDSU EXPLORE <i>Extracellular matrix in angiotensin II signaling pathway</i> | Mentor(s): Dr. Sijo Mathew |

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| #36 | Riley Lauzon , SUBRP <i>Effect of High Fat Diet Induced Obesity on Hepatic Peroxisome Function and Plasmalogen Synthesis</i> | Mentor(s): Dr. Natasha Fillmore |
| #37 | Hieu Le , NDSU EXPLORE <i>Examining Personality Expression in Sleep Routine Narratives</i> | Mentor(s): Dr. Katherine Duggan |
| #38 | Sienna Lee , PICNICS <i>A fluorescent approach to studying the epithelial to mesenchymal transition</i> | Mentor(s): Dr. John Wilkinson |
| #39 | Sahil Lohana , SUBRP <i>Evaluation of novel HDAC specific nanoparticle effects on epigenetic enzymes using Human Embryonic Kidney Cells.</i> | Mentor(s): Dr. Mohiuddin Quadir |
| #40 | Stephanie Mathew , PICNICS <i>Are Linear Polarization Resistance and Potentiodynamic Polarization Accurate?</i> | Mentor(s): Dr. Eugene B. Caldona |
| #41 | Jacob Meier , NDSU EXPLORE <i>Spatial Patterning of spade morphology in Canadian toads (<i>Anaxyrus hemiophrys</i>)</i> | Mentor(s): Dr. Matthew Smith |
| #42 | Mallory Misialek , NDSU EXPLORE <i>Investigating host-mediated microbiome recruitment</i> | Mentor(s): Dr. Barney Geddes |
| #43 | Reaghan Moore , Pollination Nation <i>Tissue Damage During Cold Exposure in the Sugarbeet Root Maggot (<i>Tetanops myopaeformis</i>)</i> | Mentor(s): Madison Floden, Dr. Kendra Greenlee |
| #44 | Selah Mueller , SUBRP <i>Innovative Pathogen Disinfection Using Far UVC Light</i> | Mentor(s): Dr. Jiale Xu |
| #45 | Inioluwa Olabode , SURE <i>Molecular Dynamics Study of Self-Assembled Nanoparticles from Amphiphilic Sucrose-Soyates in Polar Solvents</i> | Mentor(s): Kweeni Iduoku |
| #46 | Oluwafunke Oladokun , SURE <i>Electrochemical investigation of green surfactants as effective corrosion inhibitor for steel rebar in common de-icing salt</i> | Mentor(s): Taehyun Kim |
| #47 | Joseph Olsen , Pollination Nation <i>Effects of Varying Thermal Regimes on the Flight Capability of <i>Megachile rotundata</i></i> | Mentor(s): Nyle Jonason, Korie DeBardlabon, Dr. Kendra Greenlee |
| #48 | Aarya Panwalkar , Mallik Lab <i>Key Role of Cancer Stemness Markers in Patient-Derived Triple-Negative Breast Cancer Cells</i> | Mentor(s): Dr. Sanku Mallik |
| #49 | Rick Peng , Liang Lab <i>Automated extraction of microstructural features from wheat stem cross-sectional images</i> | Mentor(s): Dr. Zhikai Liang |
| #50 | Ava Perry , Pollination Nation <i>Buzz Buffet: In-vitro rearing of <i>Megachile rotundata</i> on artificial diets</i> | Mentor(s): Dr. Alex Torson |
| #79 | Steven Pilgrim , USDA ENG Sensors Group <i>HOBO Sensor Network</i> | Mentor(s): Drs. Jeffrey Erickson & Benjamin Braaten |
| #51 | Elizabeth Potter , NDSU Soybean Breeding <i>Assessing Symbiotic N Fixation in NDSU Soybean Genotypes through Quantification of Ureide Abundance</i> | Mentor(s): Dr. Carrie Miranda |
| #52 | Alize Pratt , SUBRP <i>Mitochondrial Dynamics in Lung Nodular Lymphangioliomyomatosis Cells</i> | Mentor(s): Dr. Sathish Venkatachalem |
| #53 | Jackson Pringle , NDSU ECE Sensor Group <i>Radar Mechanism</i> | Mentor(s): Dr. Jeffrey Erickson |
| #54 | Sierra Reis , SURE <i>Syntheticization of Enzyme Responsive Nanoparticle for Therapeutic Delivery</i> | Mentor(s): Md Rakib Hasan Khan, Dr. Mohiuddin Quadir |
| #55 | Ciara Reller , Sibi Lab <i>Synthesis of Biobased Carbonates</i> | Mentor(s): Drs. Anna Renner & Mukund Sibi |
| #56 | Mikayla Richmond , NDSU EXPLORE <i>Tailored Surface Texturing of 3-D Printed Superhydrophobic Polylactic Acid for Controlled Oil-Water Separation</i> | Mentor(s): Drs. Eugene B. Caldona, Reymark Maalihan |
| #77 | William Roden , NDSU EXPLORE <i>Mobile Solar Panel Testing Platform</i> | Mentor(s): Dr. William Refling |
| #57 | Gwen Sailer , Pollination Nation <i>Fountain of Youth: Exploring the effects of a telomerase activator in alfalfa leaf cutting bees</i> | Mentor(s): Joshua Rinehart |

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| #58 | Mithul Sathish , Mallik Lab <i>Development of a 3D-printed in vitro Bioreactor to Simulate Tumor Metastasis</i> | Mentor(s): Dr. Sanku Mallik |
| #59 | Emily Stonecipher , Heidinger Lab <i>The Influence of Testosterone on the Behavioral Trade-off Between Aggression and Parental Care in Wild Songbirds</i> | Mentor(s): Drs. Britt Heidinger & Samuel Lane |
| #60 | Miriam Sullivan , SUBRP <i>Improving the Crystallinity of Co-Crystallization MOFs</i> | Mentor(s): Dr. Zhongyu Yang |
| #61 | Cheyenne Tandberg , NDSU EXPLORE <i>Aryl hydrocarbon receptor regulates mitochondrial dynamics in airway smooth muscle cells</i> | Mentor(s): Dr. Sathish Venkatachalem |
| #62 | Maria Alejandra Tererros Lozano , Mech. Engineering REU <i>Predicting Postpartum Depression in Maternal Health Using Machine Learning</i> | Mentor(s): Dr. Diana Lopez-Soto |
| #63 | Curtis Thompson , SUBRP <i>Use of Mono- and Di- Substituted Michael Acceptors for the Selective Synthesis of Warfarin Analogs</i> | Mentor(s): Dr. Mukund Sibi |
| #64 | Gavin Vagts , SUBRP <i>Soy Protein based Hydrogel for Injectable Anti-Cancer Treatment</i> | Mentor(s): Dr. Long Jiang |
| #65 | Sophie Viger , Ulven Composite Group <i>Implant Beeswax Coating Delivering Antimicrobial and Pain Relief</i> | Mentor(s): Dr. Chad Ulven |
| #66 | Elizabeth Voss , ND Governor's School <i>Executive Function Measures in College Students</i> | Mentor(s): Dr. Katherine Duggan |
| #67 | Aaron Watland , Pollination Nation <i>Lower Lethal Limits of the Sugar Beet Root Maggot</i> | Mentor(s): Madison Floden, Dr. Kendra Greenlee |
| #68 | Chris Waylett , Pollination Nation <i>Too Hot to Handle: Temperature Effects on Water Balance in the Alfalfa Leafcutting Bee (<i>Megachile rotundata</i>)</i> | Mentor(s): Drs. Meredith Johnson & Kendra Greenlee |
| #69 | Madeleine Williams , SUBRP <i>Integrated Chemical Environment (ICE) Dataset: A Comparative Study of Machine Learning Models to Predict Acute Oral Toxicity</i> | Mentor(s): Dr. Bakhtiyor Rasulev, Gerardo Casanola, Amir Daghighi |
| #70 | Andrew Wusands , SUBRP <i>Polyaniline/graphene oxide nanocomposite coatings for biomedical use</i> | Mentor(s): Dr. Eugene Caldon |
| #71 | Dannie Yang , PICNICS <i>Graphene Dispersion</i> | Mentor(s): Sudeep Louis |
| #72 | Cedric Joel Yantio II , NDSU EXPLORE <i>Autonomous burrowing bots</i> | Mentor(s): Dr. Jeremy Straub |
| #79 | Johnnie Zaharia , USDA ENG Sensors Group <i>HOBOSensor Network</i> | Mentor(s): Drs. Jeffrey Erickson & Benjamin Braaten |
| #75 | Selena Zhao , PICNICS <i>Enantioselective Conjugate Addition</i> | Mentor(s): Dr. Mukund Sibi |