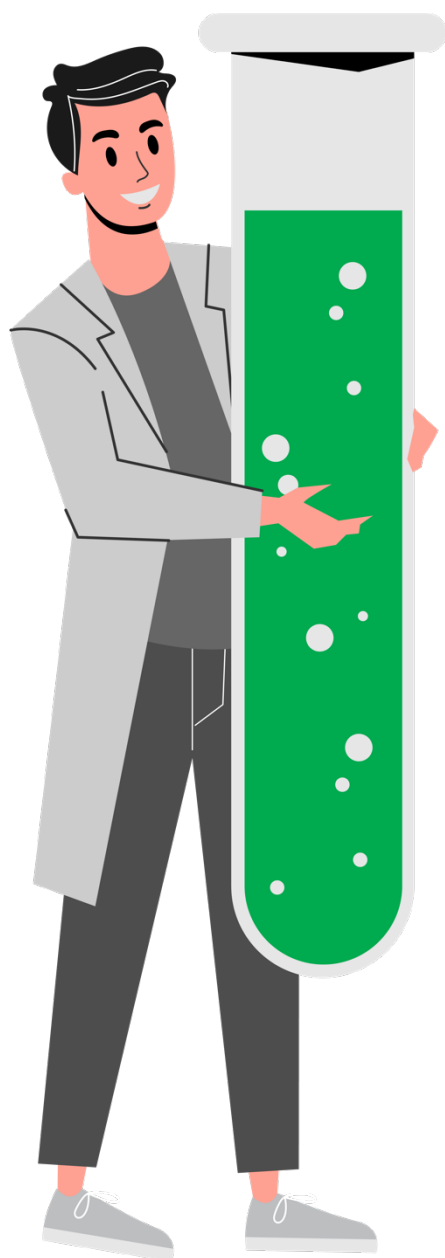


NORTH DAKOTA STATE SCIENCE & ENGINEERING FAIR

Hosted by the University of North Dakota



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NORTH DAKOTA STATE SCIENCE & ENGINEERING FAIR

COMMITTEE MEMBERS

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Brian Tande, Dean, College of Engineering & Mines
Chad Frost, Director, College of Engineering & Mines

Publicity and Promotions

Deb Austreng, College of Engineering & Mines

Program & Activities

Gwen Klawon, College of Engineering & Mines
Karen Cisek, School of Medicine & Health Sciences
Dr. Laura Munski, Dakota Science Center
Chris Danielson, UND Admissions

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Gwen Klawon, College of Engineering and Mines
Karen Cisek, School of Medicine & Health Sciences
Dr. Laura Munski, Dakota Science Center

Awards

Dustin McNally, College of Engineering & Mines

Judging

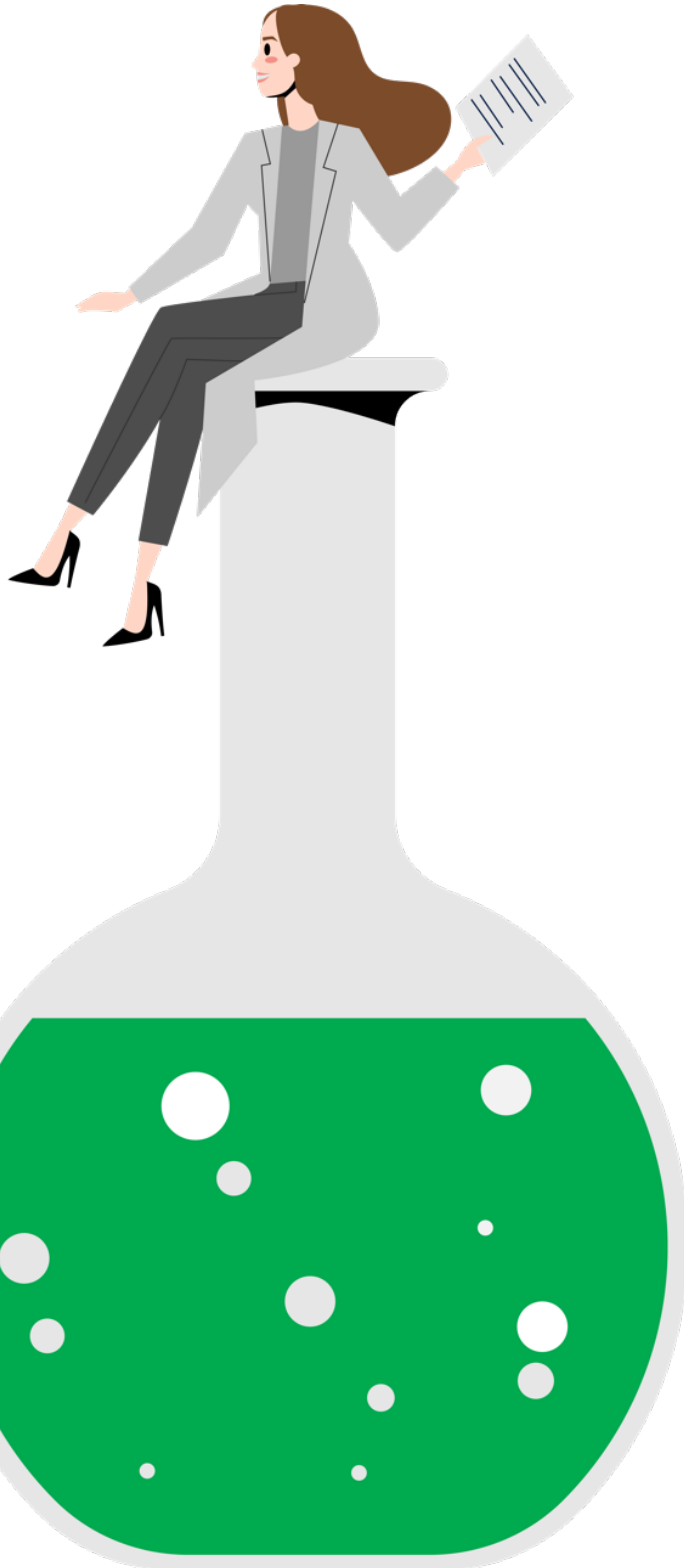
Nuri Oncel, College of Arts & Sciences

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Tonya Parton, College of Engineering & Mines
Brian Tande, Dean, College of Engineering & Mines
Chad Frost, Director, College of Engineering & Mines

Other Committee Members

Kaitlin Lockett, Financial Aid Advisor



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Major Sponsors

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April 4th & 5th, 2024

2024 Associate Board Members

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Charles Schiltz
Amber Beyer
Tana Schafer
Lorraine O'Shea
Garret Roemmich
Peter Sykora-Executive Secretary

2024 Regional State Directors

Northwest (1) – Amber Beyer – East Fairview
Northeast (2) – Lorraine O'Shea - Grand Forks
Southwest Central (3) – Tana Schafer - Flasher
Southeast (4) – Patty Kratcha - Hankinson, Tina Pierce-Lisbon

Awards Coordinator

Peter Sykora (Watford City)

2024 ISEF Trip Director

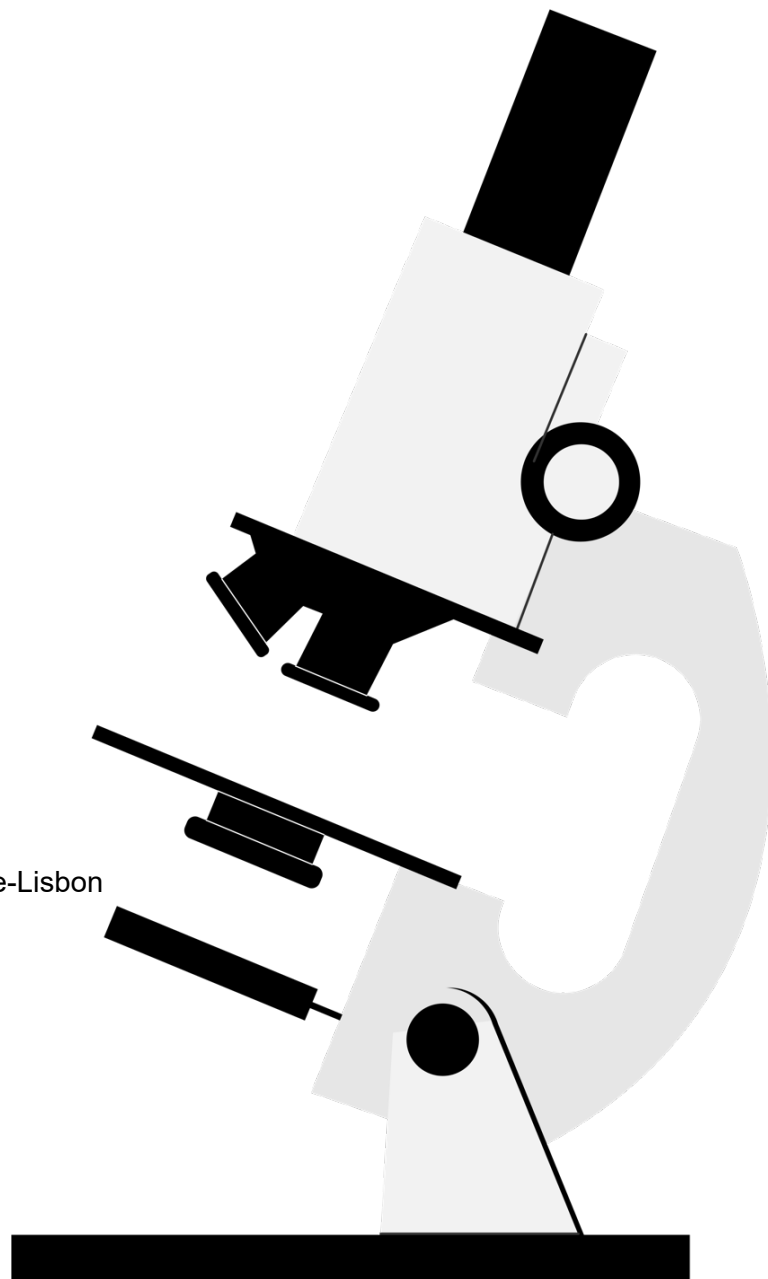
Peter Sykora (Watford City)

Scientific Review & Rules Compliance Committee

Tana Schafer, Flasher, Garret Roemmich, Scranton,
Tara Mertz-Hack, Ellendale

2024 Host Facilitator

Gwen Klawon, UND College of Engineering and Mines



The North Dakota State Science & Engineering Fair is operated by the NDSSEF Board. All inquiries regarding the Fair, its judging, and its rules should be directed to the NDSSEF Board.

Acknowledgements

The North Dakota State Science & Engineering Fair would like to thank all sponsors, UND faculty and staff, graduate students, and engineering student ambassadors for their tremendous support in making this year's Science & Engineering Fair a success. Your enthusiastic involvement is greatly appreciated.

74th NORTH DAKOTA STATE SCIENCE & ENGINEERING FAIR

Hosted by the University of North Dakota

SCHEDULE

Thursday, April 4th, 2024

- 8:00-11:00am Registration and Setup
Main Ballroom, Second floor, Memorial Union
- 11-12:45pm Lunch on your own
- 1:00pm Gather in Main Ballroom 214 A-D
- 1-3:30pm Hands-on activities, Teacher's chaperone students
- 4:00pm Students meet at Memorial Union Main Ballroom /Dismiss
- 5-7:30pm Northern Air Family Fun Center (1600 32nd Ave South, Grand Forks)

Friday, April 5th, 2024

- 8:00am Judges Report/Breakfast
Memorial Union, Second Floor, Small Ballroom (Room 220)
- 8:30am Judges' Meeting
Memorial Union, Second Floor, Small Ballroom (Room 220)
- 9:00am Judging Begins
- 9:00am Teachers' Meeting
Memorial Union, Third Floor, Room 340
- 11:30-1:00pm Students' Lunch (2 separate groups: 11:00am Juniors; 12:00pm Seniors)
*Memorial Union, First Floor, Food Court (\$11 cards provided) *Time is subject to change*
- 12-1:00pm Judges' Lunch
Memorial Union, Second Floor, Small Ballroom (Room 220)
- 12:45pm Judges' Meeting (All Afternoon Judges)
Memorial Union, Second Floor, Small Ballroom (Room 220)
- 1:00pm Judging Resumes
- 3:30-4:30pm Open to the public
- 4:30pm Takedown and setup for Awards Ceremony, time is determined by the judges.
Memorial Union, Second Floor, Main Ballroom (Room 214 A-D)
- 5:30pm Awards Ceremony*
Memorial Union, Second Floor, Main Ballroom (Room 214 A-D)

*Following Awards Ceremony: ISEF winners meet with Peter Sykora at the UND Memorial Union Main Ballroom Room 214 A-D.



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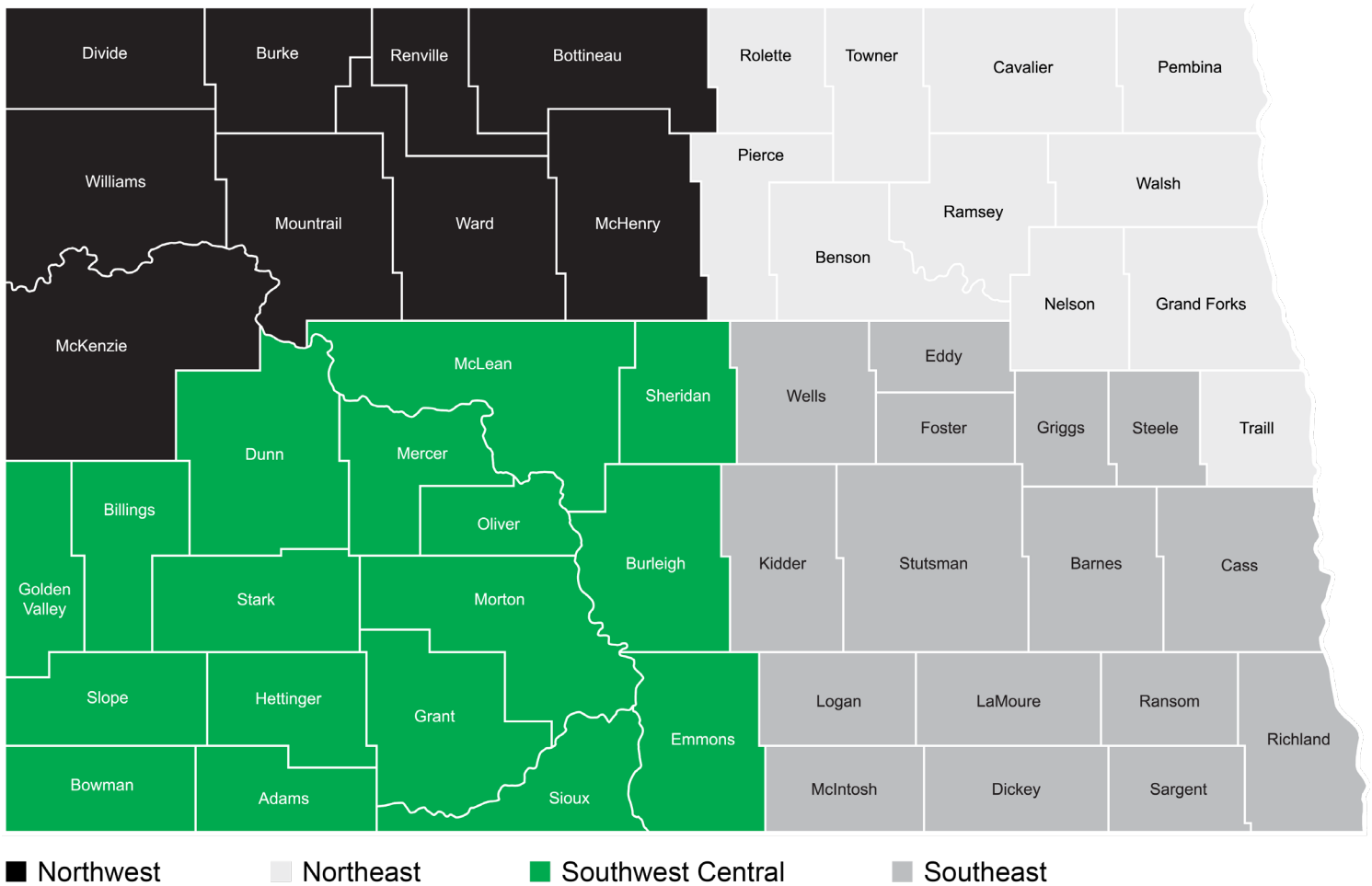
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NORTH DAKOTA SCIENCE & ENGINEERING FAIR

REGION MAP



NORTHWEST (1) JUNIOR DIVISION

Director: Amber Beyer

#	Name	Project Title	School
101	Jairus Braaten Logan Leier & Lexton Smith	Watch Them Boogie	Velva
102	Chloe Bushnell	What Type of Water Works Faster and/or Better For Growing My Plants?	Fairview
103	Chad Casperson	Lifestraw	WMSCC
104	Jaxson Cowan	Magnetic Field Machine	WMSCC
105	Mason Cregar	Which Paper Airplane design will fly the farthest?	WMSCC
106	Gracelyn Davidson	Feed the Flowers	Tioga
107	Kingslove Falade	A natural sorbent which could clean up oil spills and would replace harmful remediation solutions	WMSCC
108	Harper Ferguson	Bale Grazed vs Non-bale Grazed Land	Tioga
109	Jacobi Holmen	How to Make a Light Bulb	Tioga
110	Ryan Kloak Ethan Olsen	Making Paper out of Grass and Okra	WMSCC
111	Lane Lenzen	Best Manure Fertilizer	Tioga
112	Marlene Perez	How can we reduce the amount of trash in the ocean?	WMSCC
113	Leah Placek	Which Mouthwash Will Kill the Most Bacteria?	Tioga
114	Jaren Raan	Electromagnetic Train	Tioga
115	Janai Roldan	Can you separate the two dyes in grape soda using space sand?	Tioga
116	Jake Schlothauer	Artificial Rain	East Fairview
117	Waylon Seelye	Making Clean Electricity from Oil Wells	Tioga
118	Sophie Sundheim	Dirty Germies!	East Fairview
119	Daphne Tredwell	The Good, The Bad, and the Ugly	WMSCC
120	Jeremiah Walsh	Shaking Things Up	Tioga

Alternates

#	Name	Project Title	School
1	Joshi Dhairya	Does Background Noise Affect Concentration?	WMSCC
2	Malory Garcia	Animal Training	Tioga
3	Spencer Bender	How Do Different Substances Effect the Radioactivity of Materials	WMSCC
4	Eilee Sumners	Does watering plants with different liquids affect their growth	WMSCC

NORTHEAST (2) JUNIOR DIVISION

Director: Lorraine O'Shea

#	Name	Project Title	School
121	Amaa Wijetunga	The Revival of Coffee Grounds	South Middle School
122	Milla Fagerholt & Gianna Hall	Hydrogels or Hype?	Valley/Edinburg Middle School
123	Keegan Berg & Joseph Langerud	Gauss Rifles	Valley/Edinburg Middle School
124	Vohn Austfjord & Benedict Burrell	Electromagnetic Currents	Valley/Edinburg Middle School
125	Alex Eickman	Moist Microbes	Schroeder Middle School
126	Avery Soholt	All Shook Up	Schroeder Middle School
127	Addilyn Risky	Lettuce Grow	Schroeder Middle School
128	Caleb Wild	Shell Shocked	Schroeder Middle School
129	Che Yu	Image recognition for home security	South Middle School
130	Espenn Johnson	Wind vs. Watter	Schroeder Middle School
131	Anna Sundeen	Beat It	Schroeder Middle School
132	Aiden Schroeder	How Low can you Grow?	Schroeder Middle School
133	Aubrey Ratliff & Maybelline Altamirano	Save the Strawberries!	Valley/Edinburg Middle School
134	Lila Sateren	Hot Box	Schroeder Middle School
135	Miles Raymond	Hooked on Science	Schroeder Middle School
136	Charles Pappas	Water you Drinking?	Schroeder Middle School
137	Nellie Dachtler	To Salinity...And Beyond!	Schroeder Middle School
138	Katelyn Kruger	Salty Shrimp	Schroeder Middle School
139	Noah Chelliah	It All Adds up	Schroeder Middle School
140	Cullen Lannen	Spring Training	Schroeder Middle School

Alternates

#	Name	Project Title	School
1	Anthony Jasmer & Roby Gritz	Basketball Science	Valley/Edinburg Middle School

SOUTHWEST CENTRAL (3) JUNIOR DIVISION

Director: Tana Schafer

#	Name	Project Title	School
141	Avery Stevens	The Effects of Essential Oils on Ascorbic Acid Decay in Citric Juice	Flasher Public School
142	Jocelyn Zingg	The Power of Nitrogen	Flasher Public School
143	Keira Simonson	Tiling with Spidrons	Sweet Briar School
144	Darron Frank and Cassy Hartman	Adaptive Mechanical Arm for Functional Accessibility for Individuals with Limited Range of Motion	Flasher Public School
145	Layla Krinke	Water pH Levels Affecting Yeast Fermentation in Bread	Scranton Public School
146	Madalyn Bohl	Effect of Heavy Metal Accumulation on Vegetable Growth	Flasher Public School
147	Grace Taplin	AI Real or Fake	Shiloh Christian School
148	Jory Bonogofsky	Blood Clotting to the Rescue	Flasher Public School
149	Brooklyn Hepper	Beam End Reactions: Comparing Theoretical with Experimental Values	Flasher Public School
150	CeeAnna Ruscheinsky	Burn It Down	Flasher Public School
151	Aubrey Roehrich	Are Fingerprints Inherited?	Linton Public School
152	Acalia Olson	To Drink or Not to Drink	Scranton Public School
153	Khloe Vetter	Melt That Ice	Flasher Public School
154	Keegan Roehrich	The Effects of Glyphosate	Linton Public School
155	Emily Meier	Happy Herd	Grant County
156	Cynthia Deichert	Fertilizing Beans	Flasher Public School
157	Colton Schaff	Save Our Soil	Flasher Public School
158	Ehli Stenberg & Jordan Haider	Glowing Pickle	Shiloh Christian School
159	Cody Deichert	Pull Me Right Around	Flasher Public School
160	Emmons Casavant	Icing the Puck	Shiloh Christian School

Alternates

#	Name	Project Title	School
1	Easton Jangula	Which Sports Drink is Best?	Linton Public School
2	Michael Vetter	What's in Your Water?	Linton Public School
3	Isabelle Palczewski	Scouring Effects of Ovine Type Marking Paint	Scranton Public School
4	Payton Omlid	Enzyme Activity as Affected by pH	Flasher Public School

SOUTHEAST (4) JUNIOR DIVISION

Director: Patty Kratcha // Assistant Director: Tina Pierce

#	Name	Project Title	School
161	Nolan Sutherland	Is Plastic or Paper Money Cleaner	Lisbon Public School
162	Maci Mittleider	Eggcellent Teeth	Kidder County
163	Calli Schaunaman	Plant Propagation	Ashley Public School
164	Jackson Lang	The Gluiest of The Glues	Kidder County
165	Tamara Goldade	Browsing The Grain	Ashley Public School
166	Kaimbryn Sutherland	Quick Tricks	Kidder County
167	Lily Oster	Dog Training	Lisbon Public School
168	Gavin Sayler	Does Your Nose Know?	Kidder County
169	Ava Frolek	Air For Less	Lidgerwood Public School
170	Tracy Moch	Colors of The Brainbow	Kidder County
171	Karly Rivinius	Neospora Caninum in Cattle	Gackle-Streeter Public School
172	Isabelle Kartes	Who is The Real Quicker Picker Upper	Kidder County
173	Ella Lien & Dakota Forvilly	Worms Vs. Electricity	Montpelier High School
174	Paitynn Bodvig	What Shampoos Are Shams	Kidder County
175	Evelyn Chambers	Cockroach Neruoscience: A Gateway to Human Communication	Woodhaven Academy
176	Carter Remmick	Reel Tough Line	Kidder County
177	Ben Sutherland	Are You Organized	Lisbon Public School
178	Ava Litsey	Keep Your Teeth Clean	Ashley Public School
179	Abbie Hetletved	Gender Marketing	Kidder County
180	Charlee Nenow	Tooth Stainvs. Toothpaste Featuring Eggs	Gackle-Streeter Public School

Alternates

#	Name	Project Title	School
1	Ashton Barnick	Burn Baby Burn	Kidder County
2	Kolten Schram	Sink or Float	Lidgerwood Public School
3	Trinity Lusby & Allison Bowen	Which Candy Melts the Fastest?	Montpelier High School
4	Kinley Lyons & Peyton Radtke	How Much Energy Does It Take To Bounce a Ball?	Lisbon Public School

NORTHWEST (1) SENIOR DIVISION

Director: Amber Beyer

#	Name	Project Title	School
201	Hailey Asselin	Stressful Tests	Trenton
202	Caydence Cayko	Seeing Sound	Trenton
203	Dwayne Declaro	Electromagnetism	Tioga
204	Grace Fedler	How Do You React?	Tioga
205	Laykin Feller	Fertilizing the Ditch	Velva
206	Abigail Ferguson	Management Effects on Soil Health	Tioga
207	Josie Fernholtz	Showering Acid	Trenton
208	Katherine Haakenson	Concentration Effectiveness	Tioga
209	Jenilynn Hanson	Organic Vs. Synthetic Herbicides	Tioga
210	Wryly Hathaway	Musical Mushrooms	Trenton
211	Molly Hauk	How to Make a battery	Trenton
212	Karlee Hoyt	Frequency Effects on Marine Systems	Trenton
213	Caydin Hughes	Natural or Chemical Refrigerants	Trenton
214	Kysten Keever	Can You See?	Tioga
215	Kaden Keller	Are You an A.I.?	Tioga
216	Madison Mock	Water Conservation with Biodegradable Hydrogels	Trenton
217	Aaleah Paquin	How Different Minds Think	Trenton
218	Payton Raan	DNA Fingerprinting: Testing Frequencies	Tioga
219	Xzander Schwartz	Electromagnetic Strength	Trenton
220	Abrianna Volz	What's On Your Face?	Tioga

Alternates

#	Name	Project Title	School
1	Tristy Kreil	DNA Damage	Trenton
2	Aletta Nelson	Does the element affect bacteria	Ray
3	Karli Houle	Handling Bacteria	Trenton
4	Tailyn Bauste	Color recognition in dogs	Trenton

SOUTHWEST CENTRAL (3) SENIOR DIVISION

Director: Tana Schafer

#	Name	Project Title	School
241	Aidyn Fisher	The Effect of Different Airfoils on Wind Turbine Energy Production	Scranton Public School
242	Alivia Geffre & Daci Wells	Determining the Superior Antimicrobial Agent: Essential Oils, Antibiotics, and Plant Extracts in Eradicating E. coli Infections	Flasher Public School
243	Annelise Bates	Equine Leg Protection and Its Effect on the Temp of the Tendons	Wilton High School
244	Ava Hauck	Remote Wildfire Detection through Spectrum Recognition	Dickinson High School
245	Brenna Eckroth	An Analysis of Growth Medium for the Inoculation of Biofilm	Flasher Public School
246	Carrie LaDuke	The Effect of Disinfectant Wipes vs Disinfectant Sprays on Bacterial Growth	Flasher Public School
247	Chaskee Schmidt & Skye Weinberger	Testing Natural Ingredients, Essential Oils, and Antibiotics on E. coli	Flasher Public School
248	Cody Bahm & Cody Geffre	Price Efficient Body Armor Plates for Protecting Our Students	Flasher Public School
249	Gentry Schmidt	Calorie Count	Flasher Public School
250	Grant Hauge	Optimizing Nitrate Levels in Sudan Grass: Exploring the Impact of Fertilizer Quantity in Agricultural Practices	Flasher Public School
251	Jacob Ohlhauser & Philip Schuetzle	Synthetic vs Natural	Linton Public School
252	James Gessey	The Impact of Nicotine, Vaporizer, and CBD Oils on Planarian Regeneration and Cell Memory	Flasher Public School
253	Jason Weinberger	Nutrient Runoff Dynamics: Investigating Phosphate and Nitrogen Effects on Daphnia and Water Quality	Flasher Public School
254	Jocelyn Rossow & Piper Schmidt	The Impact of Runoff Water from Beef Cattle Feedlots on Wheat Crop Growth	Flasher Public School
255	Keiffer Ernst	Burn It Up	Flasher Public School
256	Kingstyn Hatzenbuhler	Drug Solubility	Flasher Public School
257	Kelton Friesz	Disinfecting Wipes: Do They Really Work?	Flasher Public School
258	Max Ruscheinsky	Why use Antigell?	Flasher Public School
259	Paige Zenker	Effects of L-Glutamine on the Root Growth of Soybeans	Flasher Public School
260	Sydney Weinberger	An Analysis of Antibiotic Effectiveness Against Gram-Negative and Gram-Positive Bacteria	Flasher Public School

Alternates

#	Name	Project Title	School
1	Tahj Thomas	The Effects of Perservatives on Rosa Rubiginosa	Glen Ullin Public School
2	Taelyn Boldt	Does Smoke Affect Plant Growth	Flasher Public School
3	Zach Bonogofsky	Effect of Acid Rain on Plant Growth	Flasher Public School
4	Aaden Murphy	Health Habits of Teens	Flasher Public School



SOUTHEAST (4) SENIOR DIVISION

Director: Patty Kracha // Assistant Director: Tina Pierce

#	Name	Project Title	School
261	Karsyn Bladow	What Personal Choices Impact Shooting Accuracy	Hankinson Public School
262	Brayden Sutherland	Nutrition Habits of Athletes	Lisbon Public School
263	Amla Prochnow	The Microbiological Assessment of Air Quality and Surface Contamination in Agricultural Work Spaces	Hankinson Public School
264	Drew Stroh	Real or AI?	Kidder County
265	Macy Monson	Goats vs. Weather	Ashley Public School
266	Elise Elliot	How Environmental Changes Impact Sleep	Hankinson Public School
267	Brooke Homola	Which Energy Drink is Worst for Your Teeth?	Gackle-Streeter Public School
268	Denver Nelson	Minimizing the Impact of a Constant Force Using Metals	Hankinson Public School
269	Cora Oster	How Does Water Affect Your Dog?	Lisbon Public School
270	Kenadi David	Cool Beans!	Hankinson Public School
271	Patrick Shen	Art Technique Classification using OpenAI CLIP	Fargo Davies HS
272	Olivia Koehler	A Chemical Comparison of Drinking Water	Hankinson Public School
273	Aubrey Isakson	Pen vs. Pixel	Kidder County
274	Adrianna Krump	Analysis on Microbial Growth in Different Parts of a Vehicle & Efficacy of Cleaners	Hankinson Public School
275	Sara Pfeifle	I-Be-Proven Fast Dissolving	Ashley Public School
276	Jade Shipley	Purple Perfection	Kidder County
277	Gavin Kratcha	Utilizing Machine Learning to Develop Image-Based Agricultural Optimization Software	Hankinson Public School
278	Highley Watson	I'm Strooped!	Kidder County
279	Arianna Bevre	Comparing Peoples Ability To Distribute Serving Sizes	Hankinson Public School
280	Olivia Frolek	Left vs. Right Brain	Lidgerwood Public School

Alternates

#	Name	Project Title	School
1	Elyse Tufte	R U Real??	Kidder County
2	Alyvia Henslee	Feel The Rhythm, Feel The Beat	Ashley Public School
3	Bridger Rivinius	Music and Heart Rates	Gackle-Streeter Public School
4	Cutler Schaunaman	Let's Talk Silage	Ashley Public School

NORTH DAKOTA STATE SCIENCE & ENGINEERING FAIR AWARDS: JUNIOR DIVISION

At the North Dakota State Science & Engineering Fair, five junior division students from each of the four regions are selected to receive special recognition. Three are selected as second-place winners, and two are selected as first-place winners. In addition, one presenter is selected as the junior division runner-up, sweepstakes award winner and one as the junior division sweepstakes winner. Awards are as follows:

- Second-place winners: each second-place winner receives a silver plaque.
- First-place winners: each first-place winner receives a gold plaque.
- Runner-up sweepstakes winner: the runner-up sweepstakes winner is judged as presenting the second-best junior division project from all regions and from any discipline category, and receives a silver North Dakota plaque and a monetary award of \$150 from ND IDeA Network of Biomedical Research Excellence.
- Sweepstakes winner: the sweepstakes winner is judged as presenting the best junior division project from all regions and from any discipline category. The sweepstakes winner receives a gold North Dakota plaque, and a monetary award of \$200 from ND IDeA Network of Biomedical Research Excellence.



NORTH DAKOTA STATE SCIENCE & ENGINEERING FAIR AWARDS: SENIOR DIVISION

From among the students presenting projects in the senior division: In the Northwest Region, six students will be selected to receive special recognition (three will be selected as second-place winners and three will be selected as first-place winners). In the Northeast Region, four students will be selected to receive special recognition (three will be selected as second-place winners and one will be selected as a first-place winner). In the Southwest Central Region, six students will be selected to receive special recognition (three will be selected as second place winners and three will be selected as first-place winners). In the Southeast Region, six students will be selected to receive special recognition (three will be selected as second place winners and three will be selected as first place winners). In addition, one student is selected as presenting an outstanding project from among all regions and category disciplines, and receives the senior division sweepstakes second runner-up award, a second student is selected as presenting an outstanding project from among all regions and category disciplines and receives the sweepstakes runner-up award. The student who presents the best project from among all regions and category disciplines in the senior division is named the senior division sweepstakes winner. Awards are as follows:

- Second-place winners: the 12 second-place winners receive a silver plaque, and they are named as alternates to attend the International Science and Engineering Fair (ISEF) in Los Angeles, CA in May 2024.
- First-place winners: the 10 first-place winners receive a gold plaque and a hooded sweatshirt. They also compete as North Dakota representatives at the ISEF in Los Angeles, CA.
- Sweepstakes Second Runner-Up: The Sweepstakes Second Runner-Up is judged as representing the third-best senior division project from all regions and from any discipline category. In addition to competing at ISEF, the winner receives a hooded sweatshirt, a North Dakota plaque, a monetary award of \$250, and a one-year, \$1,500 scholarship from the UND College of Arts & Sciences.
- Sweepstakes Runner-Up: The Sweepstakes Runner-Up is judged as representing the second best-senior division project from all regions and from any discipline category. In addition to competing at ISEF, the winner receives a hooded sweatshirt, a silver North Dakota plaque, a one-year, \$2,500 scholarship to the University of North Dakota, plus a monetary award of \$300 from the UND Research & Economic Development.
- Sweepstakes Winner: The Sweepstakes Winner is judged as presenting the best senior division project from all regions and from any discipline category. In addition to competing at ISEF, the winner receives a hooded sweatshirt, a gold North Dakota plaque, a one-year, \$3,000 scholarship to UND, plus a monetary award of \$600 from the UND School of Medicine & Health Sciences.
- Marcus J. Friskop Traveling Trophy: the sweepstakes winner's school receives the Marcus J. Friskop Traveling Trophy. Marcus was a long time supporter of science education and his visions greatly impact science fairs in North Dakota.

UNIVERSITY OF NORTH DAKOTA AWARDS

John D. Odegard School of Aerospace Sciences

Department of Atmospheric Sciences
\$125 monetary award and a certificate for project in Atmospheric Sciences, Junior or Senior division

College of Arts & Sciences

Department of Biology

- \$125 monetary award, \$500 UND Biology Scholarship, certificate for project in Biology, Senior division
- \$75 monetary award and a certificate for project in Biology, Junior division

Department of Chemistry

- \$125 monetary award and certificate for project in Chemistry, Senior division
- \$75 monetary award and certificate for project in Chemistry, Junior division

Department of Geography

- \$125 monetary award and a certificate for project the Atmospheric Sciences and Environmental Sciences, Senior division
- \$125 monetary award and a certificate for project in Earth Sciences, Junior division

Department of Mathematics

- \$125 monetary award, \$500 UND Math scholarship, and a certificate for project in the Mathematics, Senior division
- \$75 monetary award and certificate for project in the Mathematics, Junior division

Department of Physics & Astrophysics

- \$125 monetary award, \$500 UND Physics scholarship, and a certificate for project in Physics, Senior division
- \$125 monetary award and a certificate for best project in Physics, Junior division 2 winners

Department of Psychology

- \$125 monetary award and a certificate for project in Psychology or Behavioral Science, Senior division: 2 winners, monetary Award of \$100 each
- \$125 monetary award and a certificate for project in the Psychology or Behavioral Science, Junior division: 2 winners, monetary Award of \$100 each

Virginia George Inheritance Fund

- \$75 monetary award for project in Social or Behavioral Science, Senior division
- \$50 monetary award for project in Social or Behavioral Science, Junior division

College of Engineering & Mines

- \$500 scholarship plus \$125 monetary award for project in Engineering (female winner), Senior division
- \$125 monetary award and certificate for project in Engineering, Senior division
- \$75 monetary award and certificate for project in Engineering, Junior division
- \$125 monetary award and certificate for project in Energy/Environmental Science, Senior division
- \$100 monetary award for project in Biomedical engineering, Junior division
- \$150 monetary award for project in Biomedical engineering, Senior division

Department of Chemical Engineering

- \$75 monetary award and a certificate for project in Chemical Engineering, Senior division
- \$75 monetary award and a certificate for project in Chemical Engineering, Junior division

Department of Civil Engineering

- \$50 monetary award and a certificate for project in Civil Engineering, Senior division
- \$50 monetary award and a certificate for project in Civil Engineering, Junior division

School of Electrical Engineering & Computer Science

- \$100 monetary award and a certificate for project in Computer Science, Senior division
- \$100 monetary award and a certificate for project in Computer Science, Junior division

Dr. Richard Schultz Award - Department of Electrical Engineering

- \$125 monetary award and a certificate for project in Electrical Engineering, Senior division
- \$125 monetary award and a certificate for project in Electrical Engineering, Junior division

Department of Geology & Geological Engineering

- \$125 monetary award and certificate for project in Geology/Geological Engineering, Senior division
- \$125 monetary award and certificate for project in Geology/Geological Engineering, Junior division

Department of Mechanical Engineering

- \$75 monetary award and a certificate for project in Mechanical Engineering, Senior division
- \$75 monetary award and a certificate for project in Mechanical Engineering, Junior division

Department of Petroleum Engineering

- \$75 monetary award and a certificate for project in Engineering, Senior division

School of Medicine & Health Sciences

- \$300 monetary award, and a certificate for project in Medical or Health Sciences, Senior division
- \$150 monetary award, and a certificate for project in Medical or Health Sciences, Senior division
- \$300 monetary award, and a certificate for project in Medical or Health Sciences, Junior division

Department of Biomedical Sciences

- \$125 monetary award and certificate for project in Pharmacology/Immunology, Senior division
- \$125 monetary award and certificate for project in Pharmacology/Immunology, Junior division
- \$75 monetary award and certificate for project in Life Sciences (Molecular Biology Emphasis), Senior division, 2 winners
- \$75 monetary award and certificate for project in Life Sciences (Molecular Biology Emphasis), Junior division, 2 winners
- \$125 monetary award and certificate for project in Microbiology/Infectious Disease, Senior division, 2 winners
- \$75 monetary award and certificate for project in Microbiology/Infectious Disease, Junior division, 2 winners
- \$125 monetary award and certificate for project in Medical or Health Sciences, Junior division
- \$125 monetary award and certificate for project in Medical or Health Sciences, Senior division

All awards are subject to change.

OTHER ORGANIZATIONS, SOCIETIES & AGENCIES SPONSORING AWARDS

American Chemical Society, Red River Valley Section

- \$100 Barnes and Noble Gift Card, A Periodic Table Scroll Pen, and a certificate, for best project in chemistry, Junior division
- \$100 Barnes and Noble Gift Card, A Periodic Table Scroll Pen, and a certificate, for best project in chemistry, Senior division

American Psychological Association

- A certificate for project related to Psychology, Senior or Junior division

American Society for Clinical Laboratory Science – North Dakota

- \$50 monetary award and a certificate for project related to laboratory medicine, Senior division, 3 Winners
- \$50 monetary award and a certificate for project related to laboratory medicine, Junior division, 3 Winners

American Water Works Association

- \$75 monetary award and a certificate for project related to drinking water quality, Junior and Senior divisions

Association for Women Geoscientists

- A certificate for project related to Geosciences, Senior or Junior division (Must be a female exhibitor)

Auxiliary to the North Dakota Veterinary Medical Association

- \$50 monetary award and a certificate for project related to veterinary medicine, Junior division

Community Innovation Award

- A certificate and a \$500 monetary award for best project related to community.

Farmers Union Insurance–North Dakota

- \$50 monetary award and a Certificate for project related to agriculture, Senior division, 2 winners
- \$25 monetary award and a certificate for project related to agriculture, Junior division, 2 winners

Hot Cakes Café & Lodging

- \$25 monetary award, a t-shirt, and a certificate for project that has emphasis on food quality or food safety, Junior division
- \$25 monetary award, a t-shirt, and a certificate for project that has emphasis on food quality or food safety, Senior division

ISEF Alumni

- \$200 and a certificate for project determined by ISEF judges, Senior or Junior division
- \$100 and a certificate for project determined by ISEF judges, Senior or Junior division

NPS Metals a Division of Owen Industries

- \$500 monetary award and certificate for project related to Manufacturing, Senior division

National Oceanic & Atmospheric Administration

- A certificate and a medallion for project related to improved understanding of the earth's processes, Junior division

National Weather Service

- A certificate for project related to Meteorology, Junior and Senior division

North Dakota Academy of Family Physicians

- \$50 monetary award and certificate for project related to medicine, Senior division

North Dakota Dental Foundation

- \$50 monetary award and a certificate for project related to dentistry, Senior division, 2 winners
- \$50 monetary award and a certificate for project related to dentistry, Junior division, 2 winners

North Dakota Farm Bureau

- \$25 Monetary award and a Certificate for project related to agriculture, Senior Division, 2 winners
- \$25 Monetary award and a Certificate for project related to agriculture, Junior Division, 2 winners

North Dakota Pharmacists Association

- \$100 monetary award and a certificate for project in the field of pharmacology, Senior division
- \$75 monetary award and a certificate for project in the field of pharmacology, Junior division

North Dakota Rural Water Systems Association

- \$100 monetary award and for project related to water quality, Senior division

North Dakota State Science and Engineering Fair Association

- \$50 monetary award and a certificate for project in the Biochemistry category, Senior division
- \$50 monetary award and a certificate for project in the Biochemistry category, Junior division
- \$50 monetary award and a certificate for project in the Botany category, Senior division
- \$50 monetary award and a certificate for project in the Botany category, Junior division
- \$50 monetary award and a certificate for project in the Environmental Science (pollution related) category, Senior division
- \$50 monetary award and a certificate for project in the Environmental Science (pollution related) category, Junior division

North Dakota Veterinary Medical Association

- \$300 monetary award and a certificate for project related to veterinary medicine, Senior division
- \$225 monetary award and a certificate for project related to veterinary medicine, Senior division
- \$75 monetary award and a certificate for project related to veterinary medicine, Junior division

North Dakota Water Environment Association

- \$75 monetary award and certificate for project related to drinking water quality, Senior division
- \$75 monetary award and certificate for project related to drinking water quality, Junior division

Ottertail Power Company

- \$50 monetary award and a certificate for project related to energy or electricity, Senior division, 3 winners
- \$50 monetary award and a certificate for project related to energy or electricity, Junior division, 2 winners

Regeneron Biomedical Science Award

- \$375 monetary award and a certificate for project related to biomedical science and research, Senior division

Ricoh Corporation

- A certificate for project related to environmentally friendly businesses, Senior division

Society for In Vitro Biology

- A certificate for project in the area of tissue culture, 11th-grader

Society of Automotive Engineers

- \$125 monetary award and a certificate for best project in mobility engineering, Junior and Senior division

The Title Team

- \$125 Monetary award and a certificate for project in Computer Science (Emphasis in Artificial Intelligence), Junior and Senior divisions

United States Air Force

- An Over-the-Shoulder Sling Pack, Power Bank Charger, Dog Tag USB Flash Drive, a Dual USB Car Charger, and a Certificate for a project that has applications useful to the Air Force, 4 winners, Junior or Senior Division

United States Agency for International Development

- A certificate for the best project in science and technology that can advance our ability to meet current and future development challenges, senior division.

United States Metric Association

- A certificate for project using metric system for measurements, Junior division, 5 winners

United States Navy

- Educational recognition award valued at \$75, a medallion and a certificate for project, all categories considered, Senior division, 3 winners
- A medallion and a certificate for project, all categories considered, Junior division, 3 winners

Water Environment Federation

- A certificate for project related to water quality or water conditions, Junior or Senior division

Xcel Energy

- \$25 monetary award and a certificate for project related to energy or electricity, Junior division, 3 winners
- \$25 monetary award and a certificate for project related to energy or electricity, Senior division, 3 winners

Yale Science and Engineering Association

- A medallion and a certificate for project in areas of computer science, Senior division

All awards are subject to change.

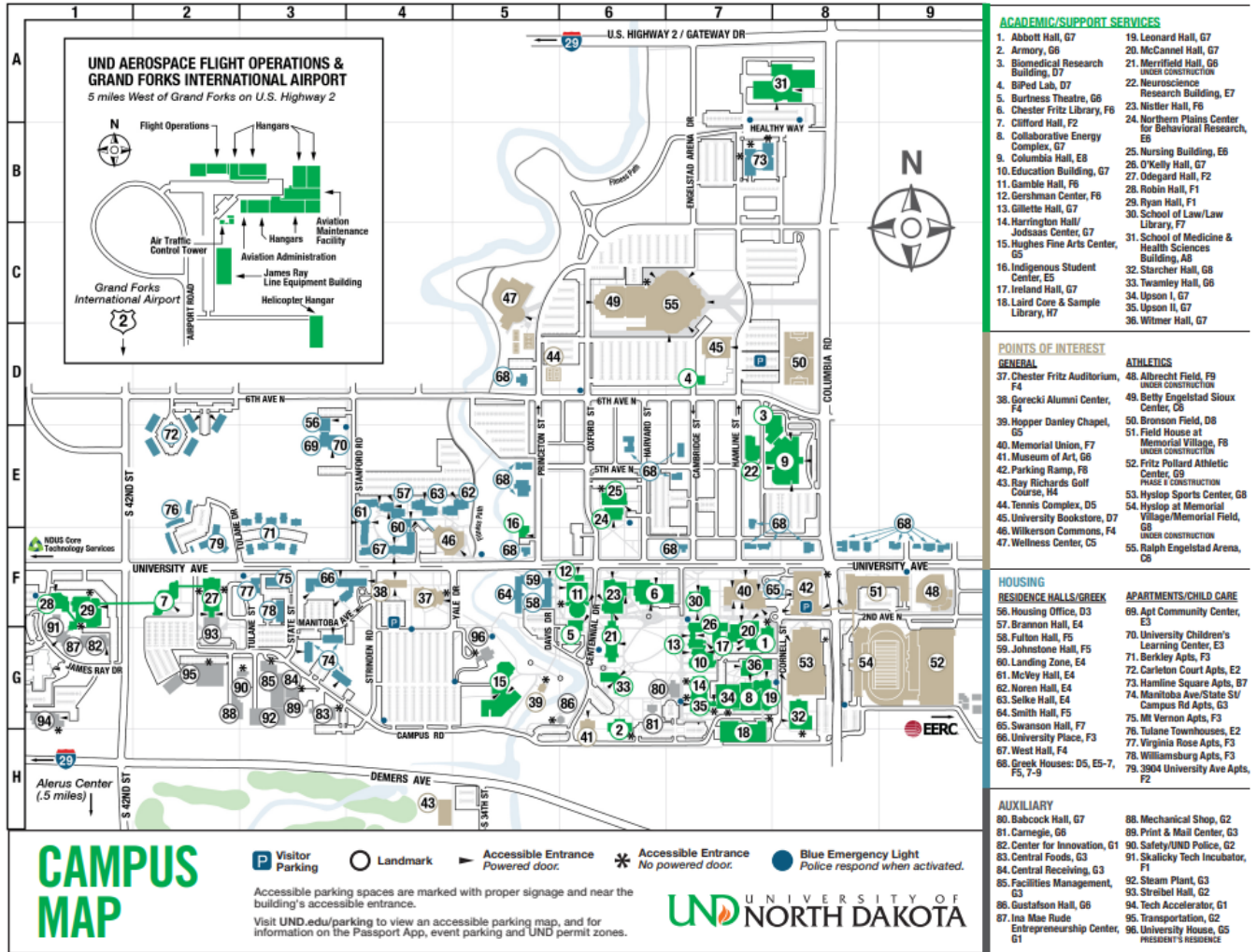


NOTES:

CAMPUS MAP

View the campus map online at <https://und.edu/map/index.html>

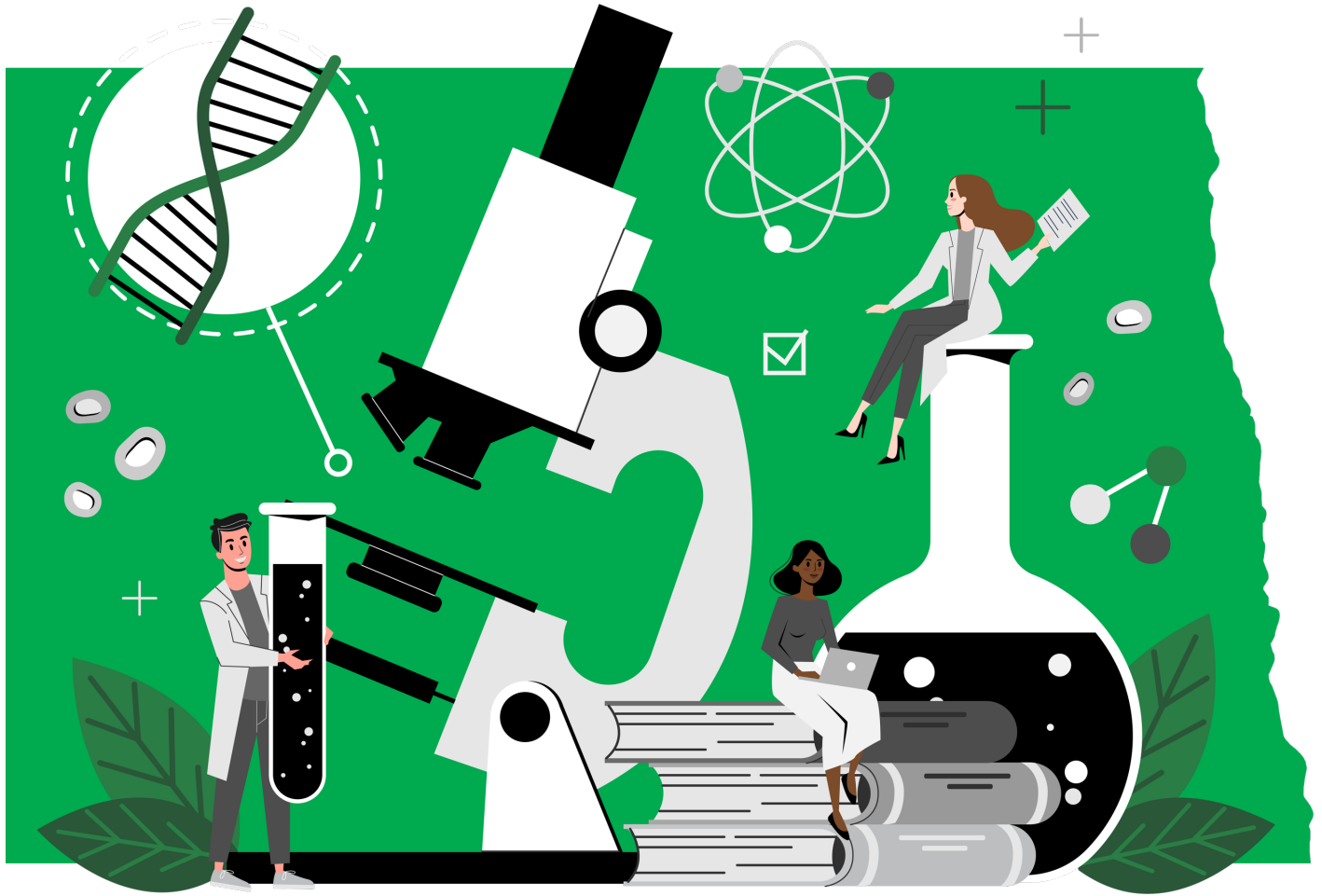
For information on event and visitor parking, please visit <https://campus.und.edu/transportation/parking/event-parking.html>



INTERACTIVE MAP

Scan the QR code with your smartphone's camera to access an interactive map of campus. Or visit [UND.edu/map](https://und.edu/map).





THANK YOU!

Thank you to each student for participating in this year's North Dakota State Science and Engineering Fair! We also thank the parents, teachers, and all those who supported them along the way. For more information about the Fair, photos, videos, awards list, and this book in digital format go to:

UND.edu/ndssef