



38TH ANNUAL CONFERENCE
SATURDAY
APRIL 8, 2017

A Day to Empower Young Women in 7th, 8th & 9th Grade

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 COORDINATOR
 Brittany Goodman

2017 CONFERENCE CONTRIBUTORS
 (AS OF 12/7/2016)
 American Pharmacists Association-Academy of
 Student Pharmacists
 Concordia College
 Concordia Neuroscience Society
 Concordia College Sigma Zeta-Math & Science
 Honor Society
 Essentia Health
 Minnesota State University Moorhead
 Moore Engineering
 NDSU College of Agriculture, Food Systems & Natural
 Resources
 NDSU College of Engineering
 NDSU College of Human Development & Education
 NDSU Department of Biological Sciences
 NDSU Department of Coatings & Polymeric Materials
 NDSU Graduate Student Association from
 Microbiological Sciences Dept
 NDSU Office of Teaching & Learning
 NDSU Range Science Department
 NDSU Registration & Records
 NDSU Student Nurses Association
 Noridian Mutual Insurance Company/Blue Cross Blue
 Shield
 Professor Beth Ingram, Provost, NDSU
 Sanford Health
 SRF Consulting

CONTRIBUTORS OF DOOR PRIZES
 (AS OF 12/7/2016)
 Concordia College Bookstore
 Gate City Bank
 NDSU Bookstore
 MSUM Bookstore
 West Acres Shopping Center

Conference Goals

- Increase young women's interest in STEM-Science, Technology, Engineering and Mathematics.
- Foster awareness of career opportunities for women in science and mathematics related fields.
- Provide students an opportunity to meet and form personal contacts with women working in traditionally male occupations.
- Alleviate isolation of young women who are interested in science and mathematics.

8:30-9:15 AM *Registration, NDSU Bentson-Bunker Fieldhouse (workshop materials will be distributed)*

9:20 AM *Welcome, announcements and release of registrants to morning workshops*

10 AM - 12:10 PM *Two morning sessions (see workshop listing)*

12:10 PM *Lunch, NDSU Bentson-Bunker Fieldhouse*

12:50 PM *Announcements and release of registrants to afternoon workshops*

1:15-3:25 PM *Two afternoon sessions (see workshop listing)*

3:40 PM *Students may be picked up at NDSU Bentson-Bunker Fieldhouse*

NDSU NORTH DAKOTA STATE UNIVERSITY

Sponsored by the NDSU Office of Teaching and Learning in cooperation with Minnesota State University Moorhead, Concordia College and Essentia Hospital

Individuals needing special accommodations are encouraged to notify Karen Murie (email: karen.murie@ndsu.edu), Coordinator of Expanding Your Horizons, in advance of this program.

LIST OF HANDS-ON WORKSHOPS

You will be walking outside from building to building, so please dress for the weather and wear closed-toe shoes and casual clothing that can get messy. These are "hands-on workshops."

1 Measuring Brain Waves Learn to use electroencephalogram (EEG) to measure your own brain waves and see how neuron activity changes during various tasks. Krys Strand – Neuroscience

2 Can Liquids be Magnetic? We will introduce the concept of magnetism on different materials and see spikes appear in ferro fluid. Thelma Berquo – Physics

3 Your Call to Nursing at Concordia College Contemplating a nursing career? Hear about nursing as a vocation to service in the world. Tally Tinjum - Nursing

4 What's In It: Cranapple Juice This lab will use spectroscopy and teamwork to determine the percentage of cranberry juice in cranapple juice. Hannah Wollenzie, Graeme R. A. Wyllie, Robin Fettig – Chemistry/Food Science

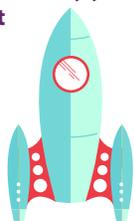


5 A Biochemical Analysis of Liver Enzymes This lab will measure enzyme activity of catalase in liver using hydrogen peroxide. Hannah Wollenzie – Chemistry/Biochemistry/Proteins

6 Radio Telemetry of Campus Squirrels We conduct radio telemetry to document the location and behavior of red and gray squirrels on the Concordia College Campus. Joe Whittaker, Jessica Watson, Danielle Braund, Chloe Whitten, Grant Vagle, Amie Schultz, Dianessa Dizon, Beth Ringwelski, Brooke Maruska, Ann Marie O'Connell – Biology

7 A-mazing Experience How quickly can you find your way through a maze? Find out how psychologists study learning conditions. Peg Potter – Psychology

8 You Can Do Rocket Science Explore Explore what makes things fly and try your hand at a launch with a rocket that you design and build (weather permitting). Steve Lindaas, Dana Koczur, Erin Aadland, Paige Meyer, Laura Maixner, Jane Glanzer, Zoe Finkelson, Chloe Johnson, Elizabeth Dougherty – Physics/Engineering



9 Making Music with Drinking Straws You will learn about the science of waves, and how to use this to make music with straws. Ananda Shastri – Physics

10 Think Wild! What does a wildlife biologist do for a living? Learn about animals and their adaptations. Donna Bruns Stockrahm, Miranda Sater, Sarah Sanderson, Elli Teige, Jessica Lindstrom, Jessica Loeffler, Jordan White – Biology

11 Operation Economics Navigate the global economy – Join our team and prepare for adventure! T.J. Hansen, Gregory Stutes – Economics

12 Pin, Snap and Tweet into SLP A multi-medium introduction to the career of Speech Language Pathology. A variety of stations and activities to introduce you to the many things a SLP can do. Rachel Stotts, Jill Beuckens – Speech Pathology

13 All About Public Health This workshop will examine how culture and everyday life applies to public health research and practice. Allison Goldenstein, Pearl Walker-Swaney, Tansy Wells – Public Health/Health Professions

14 Continuous Flow in Healthcare Learn about continuous flow and process improvement while participating in hands-on activities! Be part of a team that works together to meet demand in the most efficient way. Merideth Bell, Keith Schweigert – Healthcare/Industrial Engineering

15 Girls in Engineering

Girls will be introduced to cool engineering projects with hands-on experience such as FPGA piano, unmanned aircraft system (UAS), and smart mobile video systems. Na Gog, Jinhui Wang, Dongliang Chen, Jonathon Edstrom – Electrical Engineering/Computer Engineering/Civil Engineering



16 Body Circuits Learn about the body's electrical system by exploring circuits made of conductive playdough. Cathy Gruat-Henry – Biomedical Engineering

17 Space-Making Introducing participants to the design of space and form through space-making and drawing exercises. Heather Fischer – Architecture/Landscape Architecture



18 How to be an Architect Learn the fundamentals of architecture and bring your ideas to life through communication and the language of sketching. Samantha Marhart, Amy Mueller, Jennifer Eggen, Kelsey Jarrett, Carissa Hillen, Ingrid Fullerton, Liz Rae, Ashley Kilzer, Sarah Watson – Architecture

19 The Wonders of Rain Gardens Learn how biofiltration and rain gardens help the environment with a hands-on activity. Hannah Rollin, Sarah Walker – Engineering

20 Feelin' Green The condition of our planet is depleting. Discover the exciting world of sustainable design and learn to minimize our ecological footprints. Ann Marie Ragan – Interior Design/Sustainable Design

21 One Day in Another Person's Shoes Discover some of the everyday challenges a person with a disability faces in an interior environment. Susan Ray-Degges, Ann Marie Ragan – Interior Design

22 Placing the Past in Google Street View Using scanners and 100 year old photographs, you will learn how to make the past visible on Google Street view with the website HistoryPin. Katrina Burch, John Hallberg – Archives/Technology

23 Females in Fitness Students will be able to gain experience measuring health and fitness using techniques common in gyms, classrooms, and laboratories worldwide. Kara Stone, Kassian Keister, Allison Barry, Marty Douglas – Exercise Science

24 Color Your World Participants will experiment with textile dye methods and create a project they can take home. Sara Sunderlin, Linda Manikowske, Jaeha Lee, Ann Braaten – Apparel/Retail Merchandising/Design

25 Disaster Response Exercise Participants will engage in a mock tabletop disaster exercise that looks to handle a series of events happening in Fargo. Sarah Bundy – Emergency Management



26 I Want to Hold Your Hand Learn about the profession of pharmacy and how to make lotions and lip balms using extemporaneous compounding techniques and equipment. Jeanne Frenzel – Pharmacy

27 Nursing: Listen, Feel & Pump it Up! Find out what it is like to be a nurse: how to take vital signs, check for reflexes, listen to hear and lung sounds, etc! Mattie McGee - Nursing

28 See Human Cells in Colors Students will stain (kill) human cancer cells with various fluorescent dyes. The stained cells will be observed using a fluorescence microscope. Estelle Leclerc, Priyanka Swami, Lindsey Lipp – Biology/Medicine



29 Generation Rx An interactive presentation on the misuse and abuse of prescription medications with open discussions and a game with candy prizes. We'll also have a craft to make to take home! Lydia Lowe – Pharmacy



30 The Symmetries Around Us In mathematics we study patterns and describe them abstractly. We'll discuss symmetries of everyday objects like squares and triangles. Susan Cooper, Megan Jensen – Mathematics

31 Creating Tornadoes Do you want to see how tornadoes form? In a controlled environment, we will set up conditions favorable for tornadoes to form. This will be the closest encounter with a tornado you will ever have. Adnan Akyuz – Climatology

32 Scratch Workshop We will build a brick game. Simone Ludwig – Computer Science

33 What Would You Do? Social Psychologists know what you would do and the truth might just surprise you! Jennifer Redlin, Angela Bagne – Psychology

34 Animal Science Join animal science to learn about how animals eat, play with babies, and stick your arm in a cow! Mattia Gunkelman – Biology

35 Insects: The Good, Bad & Ugly Experience and learn amazing things about insects and their relatives. Deirdre Prishmann-Voldseth – Entomology

36 Wildlife Biology Participants will use wildlife tracking techniques to find stations that illustrate the wildlife research conducted by Range Science graduate students. Rebecca Trubitt, Katherine Kral, Cayla Bendel, Joe Orr, Craig Marshall, Adrienne Antonsen – Wildlife Biology

37 Neat Applications of Coatings and Polymeric Materials Coatings and polymers are everywhere around us yet rarely intricately understood. These demos will be a fun introduction to a unique and important field. Samantha Silbert, Ruvi Chitimere, Alison Rohly, Eric Krall – Coatings & Polymeric Materials

38 Plants Get Sick Too! We will educate them by hands-on training about plant diseases and biodiversity of microbiome interacting with Agricultural crop production. Gazala Ameen, Leah Brueggeman, Cecilia Monclova-Santana, Bryn Halley, Shyam Solanki – Biology: Agricultural Sciences

39 How Your Brain Sees You The workshop will explore how sense of touch is registered by the brain. Lena Khibnik – Biology/Neuroscience

40 Fun with Polymers Come handle shape memory materials, create casein plastic from milk, and make glow in the dark slime. Krystal Dawn Grieger, Sunanda Neupane – Chemistry

41 Insect Developmental Biology Girls will get hands-on experience with insects and learn how to set up an experiment. Kendra Greenlee, Julia Bowsher, Liz Cambron, Meg Bennett, Kayla Earls – Biology

42 Learning About Seeing Participants will learn how the brain incorporates visual information and even get to do a dissection of a real eye! Shanda Lauer, Abbey Wohlers, Breanna Thompson – Visual Neuroscience/Psychology



43 Graph the Rainbow A yummy introduction to ecology and visual models. Learn to create and interpret graphs using candy. Graphing never tasted so good! Jennifer Momsen, Rachel Salter, Lisa Wiltbank, Tara Slominski – Biology

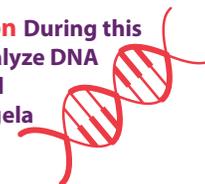
44 Eggs: No Chicken Required Peek inside a developing egg! Join us as we explore the hidden world of a chicken embryo. Nik Snyder, Wendy Reed, Lacey Dickerman, Megan Schwalbe – Biology

45 Ground Water: The Pucker Effect Students observe how ground water transports pollutants, and simulate ground water testing to discover the source of contamination. Kelsey Kolars, Harper Wavra – Hydrology

46 Mapping Your Whereabouts You will personalize Google Earth by creating an XML file. Anne Denton – Computer Science

47 Virtual/Augmented Reality Sandboxes Create a 3D model by molding sand into mountains, lakes, and rivers. A projector will show live rainfall and flooding on your landscape. Lydia Tackett, Jessie Rock, Alexa Ducioame, Yaping Chi – Geoscience

48 Cancer Gene Detection During this workshop students will analyze DNA to determine if an inherited cancer gene is present. Angela Hodgson – Biology



49 You and Your Microbes! When most people think of microbes, they think of disease and illness. But trillions of microbes are beneficial... Learn why by studying the Microbiome. Emma Kusick – Microbiology

50 Getting the Dirt on Soil The workshop will be about discovering a variety of unknown aspects of soil science. This will include: what soil science is, why we study soil science, what soil scientist do, and a couple of activities showing soil properties. Jill M. D. Motschenbacher – Soil Science

51 Food Safety & Microbiology How can microbes spread in your kitchen? Exploring the reasons behind food handling practices. Teresa Bergholz, Manoj Shah – Microbiology

52 Sky-High Structures Work with a team to design and build the tallest tower out of recycled materials and household items. Alexa Ducioame, Sara Schmidt – Engineering

53 Critical Care Nurses Makes a Critical Difference Hands-on experience of critical care nurses. See some equipment. Work out medication equations and discuss the importance of science with a nursing career. Tamra Bigger, Jess Althoff – Nursing

54 Healthcare Career Exploration A behind the scenes look at healthcare opportunities and careers. Patricia Wetzel, Nicole Holte, Leslie King, Michael Brekke, Ryan Telford, Tom Summers – Nursing, Surgery, Respiratory Therapy

55 Exploring Engineering We will be building bridges and robots and use an assembly line to make things. Alex Hines, Olivia Gravel - Engineering

Expanding Your Horizons Student Registration and Release Form

A parent or guardian must sign this form for a student to be registered.

Registration fee of \$10 covers cost of lunch, conference expenses and materials. Please enclose check (payable to NDSU) with this form and mail to: *Expanding Your Horizons, NDSU Dept 2020, PO Box 5819, Fargo, ND 58108-6050*. **Registration deadline is February 18!** Preregistration is required. Registration fees refunded until March 10 (by emailing karen.murie@ndsu.edu. Registrants will receive a postcard confirming their registration. **PLEASE PRINT AND FILL IN ALL INFORMATION!**

STUDENT'S NAME _____ HOME/CELL PHONE _____

ADDRESS _____
 (Mailing Address) (City) (State) (Zip)

SCHOOL NAME/ CITY _____ GRADE _____ EMAIL (OPTIONAL) _____
 DATE OF BIRTH _____

___ Check if you would like to receive further information from NDSU, MSUM and/or Concordia College

INDICATE NUMBER OF FIRST EIGHT CHOICES FOR WORKSHOPS. Put workshop number in blanks provided. Registration is limited to the first 450 applicants. Workshops will be assigned on a first come, first serve basis. Because popular workshops fill up quickly, and we will assign participants to similar workshops if the ones they chose are full. If similar ones are full, we'll assign students on the basis of availability.)

1st	2nd	3rd	4th	5th	6th	7th	8th
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If all of the above workshops are filled, please circle the areas that you are interested in MATH SCIENCE MEDICAL COMPUTER ENGR

If you want to attend workshops with **ONE FRIEND**, please indicate the name of the friend here and be sure to select the same workshops. Your friend's registration form **MUST** accompany your registration form for you to be assigned to the same workshops.

Name of one friend (please print) _____

Please indicate if you have a physical disability, allergy, or have special needs _____

ASSUMPTION OF RISK AND RELEASE

The undersigned hereby releases, waives, discharges and covenants not to sue North Dakota State University, its officers, agents, employees, and OTL-EYH, all of which hereinafter knows as "NDSU" from all liability to the undersigned in consideration of being permitted to participate in: Expanding Your Horizons.

The undersigned, in full recognition and application of the dangers and hazards inherent in the above activity, does hereby agree to assume all the risks and responsibilities surrounding my participation therein, and further, do for myself, my heirs, and personal representatives, hold harmless, release and forever discharge NDSU from and against any and all liability, damages, claims, demands, actions, or causes of actions, on account of damage to personal property or personal injury or death which may result from my participation therein whether caused by the negligence of NDSU or otherwise. The undersigned hereby assumes full responsibility for, and risk for bodily injury, death or property damage due to the negligence of the releases or otherwise while in, about or upon the premises of NDSU, or while participating in the above described event.

IN WITNESS WHEREOF, I have caused this release to be executed this day.

PARENT/GUARDIAN Signature	Printed PARENT/GUARDIAN Name	Relationship to Student	DATE	Phone
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In an emergency, if I cannot be reached, contact (preferably another parent or legal guardian):

Name	Relationship to participant	Phone
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Please indicate if photographs of your child or other reproductions of your child's likeness may be used in future EYH materials, including EYH websites (without name): _____ YES _____ NO

North Dakota State University does not discriminate on the basis of age, color, disability, gender expression/identity, genetic information, marital status, national origin, public assistance status, race, religion, sex, sexual orientation, or status as a U.S. veteran. Direct inquiries to: Equal Opportunity Specialist, Old Main 201, 701-231-7708 or Title IX/ADA Coordinator, Old Main 102, 701-231-6409.