Conference Schedule

2022 PRE-SERVICE TEACHER STEM CONFERENCE

Friday, April 8
1 to 4 p.m.

Saturday, April 9
9 a.m. to 3 p.m.

Friday	Description
1:00-1:15 Main Room *Whole Group*	**Welcome!** https://pststem.uni.edu/ ● Dana Atwood-Blaine Jacobson Elementary STEM Fellow, UNI ● President Mark Nook, UNI
1:15-1:45 Main Room *Whole Group*	**Keynote Address:** Senator Chris Cournoyer **Why Teaching STEM is Awesome and Matters to Student Success** Below are listed a few of Senator Cournoyer's contributions to STEM and education in Iowa: ● Member of the Iowa Governor's STEM Council; ● Member of Southeast Iowa STEM Advisory Board to promote Science, Technology, Engineering and Math across the state; ● Mentor for Iowa Girls Code and facilitated "Hour of Code" for over 500 elementary students ● Coach for FIRST LEGO League and FIRST LEGO League Jr. ● Named "Iowa Women of Innovation – STEM Champion" by the Technology Association of Iowa
1:45-2:00 Main Room *Whole Group*	**Follow up Discussion to the Keynote Talk** Break Prize Giveaway #1 at 1:55

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2:00-2:45	Friday Concurrent Sessions
General Track Zoom Host: Doreen Hayek	**Students + Digital Maps = Critical Thinking and Exploration** Co-Host/Moderator: Patti Strukel, Waldorf University Presenter: Shana Crosson Maps and spatial thinking are an important component of just about any subject. Digital maps make it possible for students to explore data to ask and answer questions, take action and learn. This hands-on session will introduce you to several easy, free, no-login options to getting started with digital maps, no matter your subject area or grade level.
Elementary Track Zoom Host: Chepina Rumsey	**Elementary STEM Example from the Field** Co-Host/Moderator: Barb Bohach, Luther College Presenter: Lori Randall, Lincoln Elementary, Osage School District In order to prepare our students for their future, it is imperative that we help them develop the four C's. These include communication, collaboration, critical thinking, and creativity. Computer Science allows students to develop the four C's in a fun and interactive environment. In my second grade classroom, we use computer science across all curricular areas. Students are able to transfer information including vocabulary and problem solving throughout their classes. It is amazing what students are capable of when given the opportunity!
Secondary Track Zoom Host: Jesse Wilcox	**Secondary STEM Example from the Field** Co-Host/Moderator: Mark McDermott, University of Iowa Presenter: Ryan Friederich, Forest City Having served various roles in public education I will be sharing my favorite tools, resources, and strategies to support implementation of STEAM across content areas. In this session we will be focusing on how you can draw on student interests to implement technology, engineering, and art concepts in the classroom environment. It's time to enhance your engagement, enrichment, and extensions!
2:45-3:00 Offline & Main Room	**Break** Prize Giveaway #2 at 2:55
3:00-3:30 Main Room *Whole Group*	**Keynote Address:** STEM Education in Iowa **Dr. Jeff Weld, Executive Director of the Iowa Governor's STEM Advisory Council** Dr. Weld will discuss what the Iowa Governor's STEM Advisory Council is doing to enhance STEM Education in Iowa.

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3:30-4:00 Main Room ***Whole Group***	**Introducing the "Parachute Palooza" Engineering Challenge** **Also:** ● Logistics for Field Trips/Day Two ● Prize Giveaway #3 at 3:55
Saturday	**Description**
9:00-9:15 Main Room ***Whole Group***	**Prize Giveaway #4 at 9:00** **Welcome!** **Schedule for the day**
9:15-9:45 Elementary Track Zoom Host: Chepina Rumsey	**Elementary STEM Panel** **Moderator:** Mason Kuhn, EdD, UNI **Panelists:** 2020 Presidential Award for Excellence in Science Teaching: Sarah Borzo, Education & Outreach Coordinator, Metro Waste Authority, Waukee 2020 I.O.W.A. STEM Teacher Award Recipient: Ronda McCarthy, St. Theresa School, Des Moines 2021 I.O.W.A. STEM Teacher Award Recipient: Nate VanZante, Lewis Central Middle School, Council Bluffs
Secondary Track Zoom Host: Jesse Wilcox	**STEM BEST Panel** **Moderator:** Stephanie Erps, University of Iowa **Panelists:** Jeff Frost, Waterloo Schools Ann Gritzner, Central School District Jill Urich, Ankeny Orbis The Iowa Governor's STEM Advisory Council has awarded 118 STEM BEST® Programs since 2014 with an opportunity to grow a series of community collaborations involving school+business partnerships. Working side-by-side, teachers and industry professionals will craft curriculum and projects that prepare students for exciting career pathways in the STEM fields of manufacturing, information technology, bioscience (agriculture and medicine), finance, and more. Meet teacher representatives from three outstanding STEM BEST partnerships.
9:45-10:00 Offline & Main Room	**Break** Prize Giveaway #5 at 9:55
10:00-10:45	**Saturday Morning Concurrent Sessions**
General Track Zoom Host: Doreen Hayek	**Iowa Science Phenomena & PBS Learning Media** Moderator: Patti Strukel, Waldorf University Presenter: Tiffany Morgan, Iowa PBS

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	Are you looking for authentic, standards aligned resources and phenomena to engage with your students? Iowa PBS will introduce Iowa Science Phenomena and PBSLearningMedia! Iowa Science Phenomena provides free, Iowa-based phenomena and encourages teachers to capture and submit their own local phenomena to the collection! PBSLearningMedia is a free, online resource offering standards-aligned media and resources for all grade levels. Come learn how you can add both these services to your teaching toolbox!
Elementary Track Zoom Host: Chepina Rumsey	**K-3: Early Childhood Hands-on STEM Activity** Moderator: Barb Bohach, Luther College Presenter: Beth VanMeeteren, Director, Iowa Regents Center for Early Developmental Education Come learn how to play **Target Ball! :** In this simple but engaging STEM experience, young children develop an awareness of force and motion along with spatial thinking as they roll a ball to knock down objects.
Secondary Track Zoom Host: Jesse Wilcox	**7-12 Hands-on STEM Activity Sensing Space** Moderator: Stephanie Erps, University of Iowa Presenters: Jesse Wilcox, Assistant Professor of Science Education, UNI and Dan Chibnall, Associate Professor of Librarianship/STEM Librarian, Drake University Middle school and high school students are often interested in space science. However, as a science teacher, teaching space science can be difficult for a number of reasons. Many space science concepts require prior knowledge in other areas. Additionally, science teachers often have a hard time finding hands-on materials to engage students in the material. When materials are available, they are often visual representations, which can be difficult for students with visual disabilities. This session will engage you with a variety of materials that use a number of senses to understand space and we will discuss how to scaffold students' prior knowledge to help them understand space science concepts.
10:45-11:15 Offline	**Engineering Challenge Round #1** Site-coordinators entered Team Names and Round 1 Scores.
11:15-12:30 Offline & Virtual* simultaneous in all 3 Tracks	**LIVE: On-Location Field Trip Sessions**

University of Northern Iowa	**UNI Botanical Center*** *(Virtual: General Track)*
	Iowa Regents' Center for Early Developmental Education Model Classroom Tour* *(Virtual: Elementary Track)*
Clarke University	**Mississippi River Museum** (In-person only)
Dordt University	**Cadaver Lab** (In-person only)
Iowa State University	**Entomology Lab - BEES** (In-person only)
Luther College	**Decorah Fish Hatchery and Raptor Resource Center** (In-person only)
University of Iowa	**National Advanced Driving Simulator*** *(Virtual: Secondary Track)*
Waldorf University	**Robotics Lab at YMCA** (In-person only)

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12:30-1:00 Offline & Main Room	Prize Giveaway #6 at 12:30 **LUNCH and Engineering Round #2** Site Coordinators enter team results on Google Sheet
1:00-1:45	**Saturday Afternoon Concurrent Sessions**
General Track Zoom Host: Doreen Hayek	**Taking STEM Outdoors** Moderator: Patti Strukel, Waldorf University **Presenter: Barb Giger, Iowa Department of Natural Resources** We will do some virtual exercises to acquaint you with some great activities to explore, observe, and investigate the outdoors, no matter where you are. Projects WILD and Aquatic WILD are national award-winning resources with a host of options for STEM-based learning with a focus on wildlife and habitats, and *Field Investigations: Using Outdoor Environments to Foster Student Learning..* is a great companion resource to immerse students in real investigations and data collection. I will share links to some free resources as well as other learning opportunities.
Elementary Track Zoom Host: Chepina Rumsey	**PANEL: Integrating Computer Science across the Elementary Curriculum** **Panel Moderator:** Dr. Ben Schafer, Professor/Program Coordinator, CSEd@UNI **Panelists:** Wendy Bailey, Richardson Elementary, Fort Madison Ryan Marzen, Perry Elementary, Perry Lindsay Salinas, Cora B. Darling Elementary, Postville Susan Oehlertz, Pocahontas Elementary, Pocahontas Computer Science has become an important element of K-12 education in Iowa. By the start of the 2023-24 school year every elementary school in the state of Iowa must have a plan for where and how they will teach computer science to all students. In 2019 the Governor's STEM Advisory Council awarded 12 school districts in the state initial "CS is Elementary" grants to develop and pilot their elementary computer science programs and serve as models for the other school districts in the state. This panel will consist of representatives from four of those school districts who will talk about the programs they have developed and the lessons they have learned in offering computer science to ALL of their elementary students.
Secondary Track Zoom Host: Jesse Wilcox	**Iowa Science & Technology Fair Panel** **Moderator:** Alexa Groff–Iowa State University Extension and Outreach/Iowa 4-H - STEM Coordinator and SSTFI Director **Panelists:** Gail Kunch - Danville High School Science Research teacher Megan Rasmussen - Algona Middle School and High School Science Research teacher Students from Beckman Catholic High School, Central Lee Middle School, Adair-Casey/Guthrie Center High School, Algona Middle School, and Danville High School 6-12th grade students and teachers from across the State will discuss their involvement in Science Research and their journey. There are numerous opportunities for students to compete their scientific research. Opportunities include: Junior Science & Humanities Symposium, Local,

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	Conference, Regional, and State Science Fairs, and the Iowa Junior Academy of Science.
1:45-2:00 Offline	**Break/Prepare for FINAL ROUND of Engineering Challenge**
2:00-2:30 Offline & Main Room	**Parachute Palooza!** **Engineering Challenge FINAL ROUND** **Tallying of Team Scores** Site Coordinator at each co-hosting site enters **Final Round** team scores in the shared Google Sheet. Scores are tallied; one winning team per site and an overall winning team for all sites. Prize Giveaway #7 at 2:25
2:30-3:00 Main Room *Whole Group*	**Closing Keynote Address** **Samantha Dahlby, NewBoCo** **The Educational Buffet:** **Why Computer Science Should be on Your Plate** The momentum of K–12 Computer Science education has been steadily increasing for the past several years, and with states like Iowa requiring implementation, districts are working to figure out what that looks like for them. Learn more about what is happening in a variety of districts right now, and what that can mean for your first job in education.
3:00-3:15 Main Room *Whole Group*	**Wrapping-Up** **Presenter: Dana Atwood-Blaine, UNI** **Final Engineering Challenge Winners Announced and Prizes Awarded!** Feedback Survey Final Prize Giveaway!