

# **48th Annual Midwest Instruction and Computing Symposium**

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## Poster Session

Friday, April 10

2:00 pm – 4:30 pm

### Dakota Lounge

2:00 - 4:30 pm	Algorithmic Elimination of Unintentional DNA Hybridization in Complex DNA Mixtures	Geoff Converse, Park Mikels and Dakota Spurrier, Simpson College
	Three-Dimensional Printing and Scanning Web-Based Job Management System	Dayln Limesand, Jeremy Straub and Scott Kerlin, University of North Dakota
	The Creation of a Communication Systems for a Small Satellite at the University of North Dakota	Michael Hlas, Jeremy Straub and Ronald Marsh, University of North Dakota
	Selection of a Scheduling Algorithm for Control of a CubeSat-Class Open Source Spacecraft	Calvin Bina, Jeremy Straub and Ronald Marsh, University of North Dakota
	Monitoring, Analyzing, and Visualizing Distributed Computing Clusters	Jonathan Stupka and Peter Bui, University of Wisconsin - EauClaire
	Efficient Path Generation to Maximize Data Collection of Multiple Samples using Fluorescence Spectroscopy	Miles Kirts, Ellie Luebbe and Eric Marean, Simpson College

## Technical Session I

Friday, April 10

1:30 pm – 2:30 pm

### Session I.A: River Valley Room

Session Chair: Ron Marsh

Theme: Undergrad Research

1:30 pm	<a href="#">Interdisciplinary Undergraduate Research in DNA Computing</a> ""3	Lydia Sinapova and Derek Lyons, Simpson College
2:00 pm	Involvement of Undergraduate Students in Research: A Comparison of Course Research Components, Paid Research Activities, Student-Led Projects and Independent / Directed Study Courses""35	Jeremy Straub, University of North Dakota

### Session I.B: Lecture Bowl

Session Chair: Wen-Chen Hu

Theme: Cloud / Big Data

1:30 pm	<a href="#">Analyzing and Moving Virtualization of Resources in the Cloud to Enhance Security and Performance</a> ""44	Dennis Guster, Ashok Jonnalagadda and Laura Lebentritt, St. Cloud State University
2:00 pm	<a href="#">An Empirical Study of NoSQL Databases by Using MongoDB Databases</a> ""56	<a href="#">Wen-Chen Hu</a> , Naima Kaabouch, U North Dakota, and Hung-Jen Yang, Kaohsiung Normal University Taiwan

### Session I.C: Badlands Room

Session Chair: Emanuel Grant

Theme: Mobile / Database Applications

1:30 pm	<a href="#">Crowdsourcing Automobile Parking Availability Sensing Using Mobile Phones</a> ""68	Bereket Kifle, Jesus Villalobos, Jesus Quevedo-Torrero and Derek Riley, University of Wisconsin - Parkside
2:00 pm	<a href="#">Utilizing Analytics to Discern Campus Library Uug</a> ""75	Punith Etikala, Laura Lebentritt, Erich Rice and Dennis Guster, St. Cloud State University

### Session I.D: Ballroom

Session Chair: Peter Bui

Theme: Web Applications

1:30 pm	<a href="#">Obelisk: Summoning Minions on a HPC Cluster</a> ""8: "" <a href="#">T rant Wuerker</a> and <a href="#">Peter Bui</a> , University of Wisconsin – Eau Claire	
2:00 pm	<a href="#">WIDLE: A Web Based Linux Interface</a> "": 2	Lucas Novoa, Charles Volzka and Peter Bui, University of Wisconsin – Eau Claire

## Technical Session II

Friday, April 10

3:00 pm – 4:00 pm

### Session II.A: River Valley Room

Session Chair: Noel Petit

Theme: Distributed Computing

3:00 pm	Openstack Swift as a Distributed Storage Backend""P IC	<a href="#">Eric Krenz</a> , Mary Pearson and <a href="#">Anne Denton</a> , North Dakota State University
3:30 pm	Raspberry Pi Computer Cluster""; 6	Ken Johnson, Merhawi Temnewo, Katherine Polys, Don Vo, Paulina Vo, Christian Grant and <a href="#">Noel Petit</a> , Augsburg College

### Session II.B: Lecture Bowl

Session Chair: Mark Hall

Theme: Computer Science Education

3:00 pm	<a href="#">Integration of Mathematical Concepts in the Computer Science, Information Technology and Management Information Science Curriculum</a> ""323	<a href="#">Donald Heier</a> , <a href="#">Erik Sand</a> , <a href="#">Mary Reed</a> and <a href="#">Kathryn Lemm</a> , University of Jamestown
3:30 pm	<a href="#">Musings on LMS, HCI, Clients and Native Programs</a> ""332	<a href="#">Curt Hill</a> and <a href="#">Razib Iqbal</a> , Valley City State University

### Session II.C: Badlands Room

Session Chair: David Apostal

Theme: Mobile Applications

3:00 pm	<a href="#">Predicting Office Availability Using Crowdsourced Data</a> ""338	Francisco Mateo, David Sobol, Jesus Quevedo-Torrero and Derek Riley, University of Wisconsin - Parkside
3:30 pm		

### Session II.D: Ballroom

Session Chair: Hassan Reza

Theme: Software Testing / Security

3:00 pm	<a href="#">A Survey of Effective and Efficient Software Testing</a> ""349	Akalanka Mailewa and Jayantha Herath, St. Cloud State University
3:30 pm	<a href="#">Gone Phishing: Surveying college students on phishing awareness and competency</a> ""364	Steven Vue, Mark Schmidt and Erich Rice, St. Cloud State University

**Keynote:** Dr. David P. Anderson



**Topic:** Volunteer Computing and the BOINC Software System

Dr. Anderson is a Research Scientist at the University of California, Berkeley. He directs the BOINC project, which develops middleware for volunteer computing.

**Technical Session III****Saturday, April 11****9:00 am – 10:00 am****Session III.A: River Valley Room      Session Chair: Scott Kerlin      Theme: Academic Network Administration**

9:00 am	<a href="#">MiNet: Managing Internet Connectivity in Academic Computing Labs</a> ""372	Shaun Lynch, University of Wisconsin - Superior
9:30 am	<a href="#">Deploying an IPv4-IPv6 Dual-Stack Network in an Academic Computing Infrastructure</a> ""383	Shaun Lynch, University of Wisconsin - Superior

**Session III.B: Lecture Bowl      Session Chair: Marty Wolf      Theme: Computer Science Education**

9:00 am	<a href="#">Nifty Assignment: Model the Monte Hall Problem through Event-Driven Programming</a> ""395	Andrew Anda, St. Cloud State University
9:30 am	<a href="#">Flipping over Flipped Instruction</a> ""39:	Mark Fienup, University of Northern Iowa

**Session III.C: Badlands Room      Session Chair: Emanuel Grant      Theme: Web / Mobile Applications**

9:00 am	<a href="#">The Fakkton Blog: Prototype of a blogging application that uses relational design</a> ""3: 8	<a href="#">Deovandski Skibinski Junior</a> and <a href="#">Anne Denton</a> , North Dakota State University
9:30 am	<a href="#">Recording Class Attendance in a Student Registration System</a> ""3; ;	Sanhu Li, Mao Zheng and Hao Fan, University of Wisconsin – La Crosse

**Session III.D: Ballroom      Session Chair: Ron Marsh      Theme: Systems and Control**

9:00 am	How to 3D Print a Photorealistic Banana for Scale ""428"	<a href="#">Faniel Corrigan</a> and Brandon Rossell, Doane College
9:30 am	<a href="#">Utilizing the Portability of Docker to Design a Portable and Scalable Continuous Integration Stack</a> ""435	Jordan Goetze, North Dakota State University

**Technical Session IV****Saturday, April 11****10:30 am – 12:00 pm****Session IV.A: River Valley Room      Session Chair: Scott Kerlin      Theme: Scientific Applications**

10:30 am	<a href="#">Modeling of Linker Stoichiometry for Optimization of DNA Nanostructure Self-Assembly</a> ""444	Maddie Thomas, Esteban Sierra and Blake Tish, Simpson College
11:00 am	<a href="#">Unearthing Digital Artifacts for Public Archaeology</a> ""453""	Max McGrath, Anna Munns, Otto Borchert, Guy Hokanson, Jeffrey Clark and Brian M. Slator, North Dakota State University
11:30 am	<a href="#">A Mobile Application for Collecting Plant Observation Data</a> ""467	Jingbo Chu, Yu Qiu, Mao Zheng and Tom Gendreau, University of Wisconsin – La Crosse

**Session IV.B: Lecture Bowl      Session Chair: Elena Machkasova      Theme: Tools for Teaching**

10:30 am	<a href="#">An ER Modeling Tool</a> ""475""	<a href="#">Ton McFadyen</a> , University of Winnipeg
11:00 am	<a href="#">Developing beginner-friendly user interactions for the Clojure programming language</a> ""489	Henry Fellows, Aaron Lemmon, Max Magnuson, Emma Sax, Paul Schliep and <a href="#">Elena Machkasova</a> , University of Minnesota - Morris
11:30 am	Graph Algorithm Visualization Program Demonstration ""4: 3	David Pagels, University of Minnesota - Morris

**Session IV.C: Badlands Room      Session Chair: David Apostal      Theme: Algorithms / AI**

10:30 am	<a href="#">Understanding 31-derful</a> ""4: 6""	Gmily Alfs, Doane College
11:00 am	Pronoun Reference Resolution On the Dutch Word ‘Het’, An Empirical Study ""P IC	Bram Oosterlee and <a href="#">Noel Petit</a> , Augsburg College
11:30 am	<a href="#">Optimizing(0,1)-Matrix-Vector Product Computations via Minimum Spanning Trees</a> ""4; 5	Jeffrey Witthuhn and Andrew Anda, St. Cloud State University