Consortium for Computing Sciences in Colleges

CENTRAL PLAINS REGIONAL CONFERENCE

UNIVERSITY OF NEBRASKA – LINCOLN

MARCH 31ST-APRIL 1ST, 2017

In cooperation

Conference Program

Welcome from the Chair

Charles Riedesel, Asst. Prof. of Practice and Chief Undergraduate Advisor, Computer Science & Engineering, University of Nebraska-Lincoln

Welcome to my home campus! I am excited to share with you some of our best along with the diverse talent coming in for this conference. We are offering tours of some of our student-friendly research and hosting the banquet keynote in the fascinating American Museum of Speed. We are bringing in industry representatives for a panel and career fair. As you browse through this program you may notice the breadth of interdisciplinary topics from music to biological systems to digital humanities. Our theme this year is aptly titled "Computing Everywhere!" (Including sports? Perhaps prescient, our football team was once known as the "Bug Eaters".)

PRE-CONFERENCE WORKSHOP
Friday, March 31st, 9:00 AM – Noon, Nebraska Student Union, Auditorium

Bill Manaris, Prof., Department of Computer Science, College of Charleston

Making Music with Computers

This workshop is an introduction to creative software development and music making in Python. This material is intended for CS0/CS1 courses and for courses at the intersection of computing and the arts. The workshop will introduce music making activities for teaching traditional CS1 topics, GUIs, event-driven programming, and connecting to external devices (e.g., smartphones, digital pianos) via MIDI and OSC (Open Sound Control). Participants will be introduced to JythonMusic (http://jythonMusic.org), a library of Python modules for creative programming and music making, and will be making their own music artifacts a few minutes later. Software, course materials, and student activities will be provided. Laptop Required.

OPENING KEYNOTE
Friday, March 31st, 1:00 – 2:00 PM, Nebraska Student Union, Auditorium

Max Pierobon, Asst. Prof., Computer Science & Engineering, University of Nebraska-Lincoln

Engineering Computing and Communications in Biological Systems

Biological cells have the natural ability to sense, compute, and release information from/to the environment, and communicate with each other. This is the basis of major cellular functionalities such as cell growth, proliferation, apoptosis, and homeostasis. Exploiting these abilities by reprogramming the genetic code of cells through synthetic biology is becoming a reality, with the realization of biological computing devices, or genetically engineered cells, able to interconnect into networks and interact within biological environments by exchanging molecules, a paradigm recently recognized in communications engineering as Molecular Communication (MC). After a broad introduction to the enabling technologies, this talk will focus on the latest advances in modeling, exploiting and reprogramming information processing in biological cells from the perspective of computer and communications engineering.

Massimiliano Pierobon received the M.S. degree in Telecommunication Engineering from the Politecnico di Milano, Italy, in 2005, and the Ph.D. degree in Electrical and Computer Engineering from the Georgia Institute of Technology, Atlanta, GA, in 2013. Since August 2013, he is an Assistant Professor at the Dept. of Computer Science and Engineering, University of Nebraska-Lincoln, where he also holds a courtesy appointment at the Dept. of Biochemistry.

BANQUET KEYNOTE
Friday, March 31st, 6:30 – 9:30 PM, American Museum of Speed

Adrian S. Wisnicki, Asst. Prof., Department of English and Center for Digital Research in the Humanities, University of Nebraska-Lincoln

The Evolution of the Livingstone Spectral Imaging Project

The Livingstone Spectral Imaging Project is an international digital humanities collaboration to apply advanced imaging technology to the study of the manuscripts of Victorian explorer David Livingstone (1813-73). The project is funded by the National Endowment for the Humanities. Previously featured in a PBS/National Geographic documentary ("The Lost Diary of David Livingstone"), the project has concluded its second phase of research (2013-17). The first phase (2010-13) confirmed that spectral imaging could be applied to recover "invisible" text in some of David Livingstone's most damaged texts. In the new phase, the project team took the technology in a new direction - to study the material history of Livingstone's manuscripts in order to understand its passage across space, time, and through many hands. This talk will explore the results of using spectral imaging to study Livingstone's works and consider how the technology has created not only new insights into the manuscripts, but also enabled us to ask and answer new questions about the manuscripts as objects.

Dr. Wisnicki holds a Ph.D. from the City University of New York and works in the field of digital humanities, which involves the use of computers, technology, and social media to study traditional humanities disciplines. Secondary interests include postcolonial studies and Victorian literature and culture. He has previously lived in New York City, England, and Botswana. You can follow him on Twitter: @AdrianWisnicki

Parking and Campus Map
Parking - Stadium Drive Parking Garage - 625 Stadium Drive

Parking rates for the garage are $1.00 for each hour and $5.00 daily maximum. A new day begins at 12:00 a.m. midnight.
Credit/debit card (MasterCard, Visa or Discover) is the only accepted payment.

Friday, March 31st – Activities begin at <u>Nebraska Student Union</u>, then <u>Avery Hall</u>
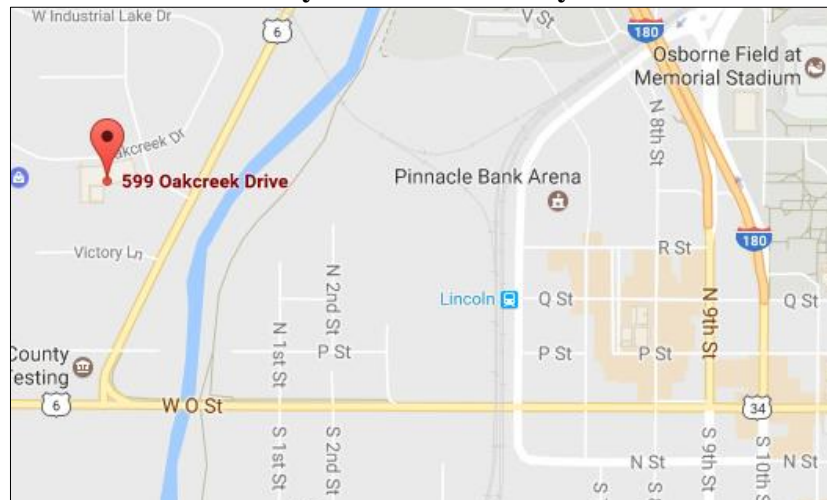
Saturday, April 1st – Activities at <u>Avery Hall</u>

(For Saturday: _Registration table will be outside the SOUTH Door to 115 Avery Hall_)

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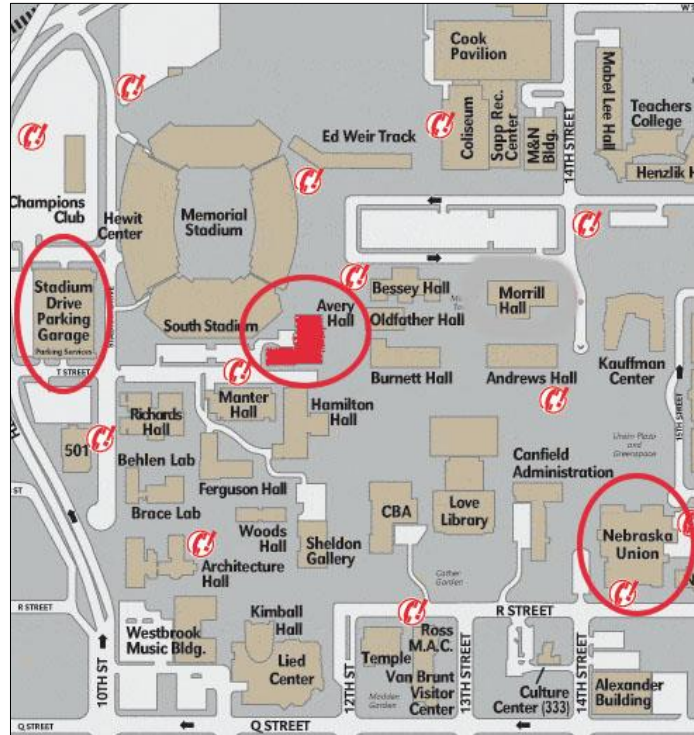
Banquet – Friday, March 31st – 6:30 p.m. - American Museum of Speed
599 Oak Creek Drive
Buses will transport attendees from Embassy Suites and Courtyard Marriott Hotel beginning at 6:25 p.m.

Time	Auditorium - Nebraska Student Union		
9:00 a.m.-Noon	**Pre-Conference Workshop**: *"Making Music with Computers"* Bill Manaris, College of Charleston		
1:00 p.m.-2:00 p.m.	**Keynote**: *"Engineering Computing and Communications in Biological Systems"* Max Pierobon, University of Nebraska - Lincoln		
	Track One Regency A	**Track Two** Regency B	**Track Three** Regency C
2:15-3:15 p.m.	**Nifty Assignments** **Moderator**: Scott Sigman, Drury University *"Mobile Applications"* Wen Hsin, Park University *"Incremental Public Key Cryptography with Mailvelope"* John Cigas, Park University *"Hunt the Wumpus"* Dave Reed, Creighton University	**Papers** **Moderator:** Scott Bell, Northwest Missouri State University *"Software Engineering Education Approaches"* Michael Oudshoorn, Northwest Missouri State University *"Developing a Lessons Library for Teaching Version Control"* Denise Case & Charles Hoot, Northwest Missouri State University *"A Case Study for Teaching Students Agile and Scrum in Capstone Courses"* Dabin Ding, Mahoud Yousef & Ziaodong Yue, University of Central Missouri	**Student Papers** **Moderator:** Ajay Bandi, Northwest Missouri State University *"Creating & Publishing Alexa Custom Skills Using ASP.NET Technologies"* Sandip Subedi, Northwest Missouri State University *"Predicting 2016 U.S. Presidential Candidate Success Using Twitter and Machine Learning"* Jennifer Steffins, Alexis Kulash, Eric Manley & Timothy Urness, Drake University *"Using NET Core, MVC, and OAuth to Consume Third Party APIs"* Anthony Quintero, Northwest Missouri State University
3:15-4:00 p.m.	Break – Refreshments/Vendors - Avery Hall #19 hallway		
	Avery #119	Avery #106	Avery #19
4:00-5:00 p.m.	**Tutorial** *"Guiding Students to Understand CS Concepts and Develop Process Skills Using POGIL"* Chris Mayfield, James Madison University	**Papers** **Moderator:** Rex McKanry, St.Chas. C.C. *"A Case Study Introducing Dynamic Programming in CS2"* Jamil Saquer, Missouri State University *"Experience Report: Peer Instruction in Java Programming Course in a Small Department"* Bin Peng, Park University *"Developing a Hands-on Cybersecurity Laboratory with Virtualization"* Holly Yuan, University of Wisconsin – Stout	**Vendor Session Google** *"Exploring Google Cloud Machine Learning API"* Gus Class, Developer Programs Engineer In this talk, we'll learn how to access Google Cloud Machine Learning features and integrate them in various ways to enhance apps and sites. Lightweight integrations of speech, vision, translation, and natural language processing will be demonstrated and attendees are encouraged explore the demo playgrounds.
5:00-6:00 p.m.		**Papers** **Moderator:** Mahmoud Yousef, University of Central Missouri *"Spiraling CS2013 Knowledge Units Across a Small CS Curriculum"* Dave Reed, Creighton University *"Flash, Buzz, Zap and Ouch! The Sounds and Sights of the Internet of Things in the Classroom"* Michael Rogers, Dennis Wong, Aziz Fellah, Northwest Missouri State University *"Multiple Strategies to Boost Online Discrete Mathematics Classes"* Gongjun Yan, University of Southern Indiana	
6:30-9:30 p.m.	**Banquet: American Museum of Speed** – 599 Oak Creek Drive Buses will pick up at the Embassy Suites and Courtyard Marriott – the first bus will leave at 6:25 and will make a return trip. Free parking for those wishing to drive.		
	Keynote: *"The Evolution of the Livingstone Spectral Imaging Project"* Adrian S. Wisnicki, University of Nebraska-Lincoln		

Avery Hall
UNL City Campus, Lincoln, NE 68588

Time	Avery Hall – Room #115		
8:30-9:30 a.m.	**Industry Panel** **Moderator:** Judy Mullins, University of Missouri, KC *Job Market Interview Strategies*		
	Avery Hall – Room #110 hallway		
9:30-10:00 a.m.	Poster Set up		
	Track One Avery #115	**Track Two** Avery #106	**Track Three** Avery #110 hallway
10:00-11:00 a. m.	**K – 12 Lightning Talks** **Moderator:** Belinda Copus, University of Central Missouri	**Papers** **Moderator:** Chetan Jaiswal, Truman State U. *"A Data Mining Approach to Evaluate Stock-Picking Strategies"* Rad Alrifai, Northeastern State University *"Do Students Lie on Placement Surveys? An Action Research Study"* Brian Kokensparger, Creighton University *Impacting Persistence in Computing with a Programming Boot Camp"* Sonal Dekhane, Georgia Gwinnett College	**Poster Judging**
11:00-11:45 a.m.	Break – Poster viewing and refreshments – Avery #110 & #111		Avery #119
11:45-12:45 p.m.	**Lightning Talks** **Moderator:** Kendall Bingham, University of Missouri, KC	**Papers** **Moderator:** Rex McKanry, St.Chas. C.C. *"Using Interview Questions as Short-Term Programming Assignments in CS2"* Timothy Urness, Drake University *"Adopting CS Principles in a Breadth-First Survey Course"* Chris Mayfield, James Madison University	**Career Fair**
	Avery Hall – Room #110		
12:45-12:50 p.m.	**Poster Awards Ceremony**		
	Schorr Center – 2nd Floor	Avery #115	
1:00-2:00 p.m.	**CCSC Business Meeting and Luncheon**	**Programming Contest Meeting and Lunch**	
	Avery #111		
2:00-3:00 p.m.	**CSTA Meeting**		
	Avery #15, #20, #21		
2:00-6:00 p.m.	**Student Programming Contest**		

2017 CCSC-CP Regional Board and Conference Committee

CCSC Regional Board

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Pre-Conference Workshop
Judy Mullins, University of Missouri KC
Scott Sigman, Drury University
Michael Rogers, Northwest Missouri State University

Papers
Scott Bell, Northwest Missouri State University
Mahmoud Yousef, University of Central Missouri

Panels, Tutorials, Workshops
Ron McCleary, Avila University

Submission System Administrator
David Heise, Lincoln University

Nifty Assignments
Mahmoud Yousef, University of Central Missouri

Lightning Talks
Kendall Bingham, University of Missouri KC
Rick Barker, Washburn University
Meilani Conley, Southwest Baptist University

K-12 Outreach, Nifty Assignments, Lightning Talks
Diana Linville, Northwest Missouri State University
Belinda Copus, University of Central Missouri
Tim DeClue, Southwest Baptist University
Lisa Perkins, Humansville R-IV

Student Paper Session
Ajay Bandi, Northwest Missouri State University

Student Poster Competition
Rick Barker, Washburn University
Ajay Bandi, Northwest Missouri State University

Student Programming Contest
Jeff Ifland, University of Nebraska-Lincoln
Bill Siever, Washington University at St. Louis

Two-Year College Outreach
Rex McKanry, St. Charles Community College

Career Fair
Jeff Ifland, University of Nebraska-Lincoln

2017 Central Plains Regional Conference

Many thanks to:

Google - Our National Partner **—** for their continued support of our activities

Upsilon Pi Epsilon (International Honor Society for the Computing and Information Disciplines) for sponsorship of student participation in the conference

SIGCSE for help in funding the pre-conference workshop

Cerner Corporation for its generous donation to pay for the K-12 registrations

Department of Computer Science & Engineering, University of Nebraska – Lincoln for hosting the Saturday portion of the conference and student programming contest in Avery Hall

American Museum of Speed

Banquet Venue Friday March 31st

Holland Computing Center
Lab tours Friday, March 31st
11:00-Noon, Noon-1:00 or 3:15-4:00 PM

NIMBUS Lab
Lab tours Friday, March 31st
11:00-Noon, Noon-1:00 or 3:15-4:00 PM