October 1-4, 2017 Seattle, WA, USA



Association for Computing Machinery

Advancing Computing as a Science & Profession

SIGUCCS'17

Proceedings of the 2017 ACM Annual Conference on SIGUCCS

Sponsored by: ACM SIGUCCS

Supported by:

HDI, Ink, Software2, PDG.com, JAMF, Wepa, & LabStats



Association for Computing Machinery

Advancing Computing as a Science & Profession

The Association for Computing Machinery 2 Penn Plaza, Suite 701 New York, New York 10121-0701

Copyright © 2017 by the Association for Computing Machinery, Inc. (ACM). Permission to make digital or hard copies of portions of this work for personal or classroom use is granted without fee provided that copies are not made or distributed for profit or commercial advantage and that copies bear this notice and the full citation on the first page. Copyright for components of this work owned by others than ACM must be honored. Abstracting with credit is permitted. To copy otherwise, to republish, to post on servers or to redistribute to lists, requires prior specific permission and/or a fee. Request permission to republish from: permissions@acm.org or Fax +1 (212) 869-0481.

For other copying of articles that carry a code at the bottom of the first or last page, copying is permitted provided that the per-copy fee indicated in the code is paid through www.copyright.com.

Notice to Past Authors of ACM-Published Articles

ACM intends to create a complete electronic archive of all articles and/or other material previously published by ACM. If you have written a work that has been previously published by ACM in any journal or conference proceedings prior to 1978, or any SIG Newsletter at any time, and you do NOT want this work to appear in the ACM Digital Library, please inform permissions@acm.org, stating the title of the work, the author(s), and where and when published.

ISBN: 978-1-4503-4919-2

Additional copies may be ordered prepaid from:

ACM Order Department

PO Box 30777 New York, NY 10087-0777, USA Phone: 1-800-342-6626 (USA and Canada) +1-212-626-0500 (Global) Fax: +1-212-944-1318 E-mail: acmhelp@acm.org Hours of Operation: 8:30 am - 4:30 pm ET

Printed in the USA

WELCOME

On behalf of the SIGUCCS Board, welcome to Seattle and the 45th annual SIGUCCS conference! Grab a mug of your favorite beverage and join your colleagues from around the world as we Connect | Discover.

The 2017-2020 board recently took office, and we are looking forward to working together for the next three years! We encourage your comments and ideas—please join us for an Open Board meeting on Tuesday at 7:30am in Emerald 2 or chat with us during any networking event.



Join us in 2018 at **Disney's Coronado Springs Resort on** October 7-10, 2018 See you there!

OMMUNIT

Extend your collaboration beyond the annual conferences by participating in one or more of our SIGUCCS online communities! Join the SIGUCCS-L email list, Slack channel or Facebook Community group. Watch for information about participating in the Mentoring Program and pcoming SIGUCCS Webinars. More information can be found on our website siguccs.org



• 0 ••• S

Chair LAURIE FOX SUNY Geneseo



Treasurer LISA BROWN University of Rochester



Vice-Chair (Conference Liaison) DAN HERRICK University of Colorado -Boulder



Secretary **KRISTEN DIETIKER** Menlo College



Past Chair MAT FELTHOUSEN Cleaveland Institute of Art

VOLUNTEER Please consider volunteering with SIGUCCS. It's a great way to give back to our community and an opportunity for professional and personal growth. Planning for the 2018 conference has already begun and there are many ways you can join the team! We also welcome volunteers in our marketing efforts, mentoring program, and award selection programs. Let a Board member know if you're interested!

iii

CONFERENCE CHAIR WELCOME





Welcome to Seattle - pull up a seat, grab a cup of coffee and let's talk!

Seattle is a perfect reflection of the SIGUCCS 2017 conference - it is a city of innovation, boldness, collaboration and inspiration. This is where Starbucks was first brewed, where Microsoft made its mark, and where Pike Place Fish Market, approaching bankruptcy, decided to become world famous and began throwing its product at its customers!

The core planning committee kicked off SIGUCCS 2017 by throwing our own fish at the General Session in Denver during SIGUCCS 2016. And we've since spent the past year hard at work to make this conference the best of what SIGUCCS does for its members. Special thanks goes out to the team that helped shape this year's conference - all the volunteers who are serving on the planning and conference committees, the presenters who are providing the content and offering new ways to Connect | Discover, and everyone who participates in SIGUCCS—not just at the conference but year round.

Connect | Discover is not just the theme, but the embodiment of this year's conference. Opportunities abound for professional development and networking with your peers. I invite you to kick off each morning at breakfast to "Begin the Conversation" and share ideas about the day's topics, don't miss attending the exciting and inspirational plenary and general sessions, drop by the poster session to grab some snacks and help determine the winner of a "major award", and end each day by "Continuing the Conversation" in which you will have the opportunity to discuss the day's topics with presenters and your peers.

This is YOUR conference, created by your peers, presented by your colleagues and your engagement will power it. Connect with the other attendees and speakers and discover that next new technology, smart solution or growing trend. We are throwing a big fish at you - step up and catch it!

CATE LYON 2017 SIGUCCS Conference Chair

PROGRAM CHAIRS WELCOME

As Program Co-Chairs, it is our great pleasure to welcome you to SIGUCCS 2017! We are thrilled to be here in Seattle and we look forward to sharing this year's program with you.

Our conference begins with our Opening Plenary, where three current and former CIOs, Marty Ringle, Lois Brooks, and Chris Ferguson, will discuss "Apocalypse Deferred: Wreaking Order in the Service Environment Through Effective Leadership". This session promises to be an engaging and fun discussion about the challenges of Higher Ed IT. Regardless of your role, it will get you thinking about how to address the challenges you face in your job. At the end of our conference, Amanda Messer from Because I Said I Would delivers our Closing Plenary. In Because I Said I Would, Amanda will share her insights on the importance of accountability, fulfilling commitments, and doing what you say you will do.

One of the hallmarks of SIGUCCS is that we are a volunteer organization. As such, many individuals have contributed a great deal of hard work and dedication toward the success of this conference. We received 80 submissions to our Call for Proposals, and many quality proposals had to be turned away. We accepted a mix of sessions. Presentations and posters each required writing and publishing a paper, which are now available online in the ACM Digital Library. Other sessions we are offering this week include panels, lighting talks, and facilitated discussions. Our excellent authors and presenters developed strong papers, posters, and presentations, guided by our Readers and Track Chairs. All told, over 100 people were involved in writing, editing, and presenting the program content you are accessing here in Seattle. We could not have developed this year's program without their efforts, and we thank them for volunteering their time.

From the very earliest stages of planning this conference back in June 2016, the conference committee reflected on SIGUCCS conferences, what they mean to us individually, and what we hope to achieve this year. Our conference theme Connect | Discover was developed as a result of our discussions. We are confident that over the next several days, you will connect with amazing colleagues from other institutions across the US and the world, and discover new ideas and solutions to bring back to your home institution.

KRISTEN DIETEKER & CHRIS WIESEMANN 2017 SIGUCCS Conference Program Co-Chairs







Table of Contents

| 2(| 017 SIGUCCS Conference Committee |
|----|--|
| T | hanks To Our Exhibitorsx |
| Pa | aper Session - Monday, 11:00am |
| • | Creating, Implementing, and Maintaining Successful Classroom Design |
| • | The Power of PowerShell: Examples of how PowerShell Scripts can Supplement a Patch Management System to Solve Unusual Problems |
| • | Building an In-house Leadership and Management Development Program |
| Pa | aper Session - Monday, 1:15pm |
| • | Transitioning from Blackboard to Moodle amidst Natural Disaster: Faculty and Students Perceptions 19 Ajayi Ekuase-Anwansedo, Jose Noguera, Brandon Dumas (Southern University and A & M) |
| • | Trying it Out with College Library: The Role of Beta-testing and the PilotProcess in Establishing Successful Services23Jeremiah Ray, Crague Cook (University of Wisconsin-Madison) |
| Pa | aper Session - Monday, 2:30pm |
| • | The Help Center of the New American University, it's IT and Beyond |
| • | A Touchless Gestural System for Extended Information Access Within a Campus |
| • | Maintaining Effective Collaboration: Supporting a Shared Library System Across 39 Academic Institutions |
| • | A Leadership Framework |
| Pa | aper Session - Monday, 4:00pm |
| • | Taking the Guesswork Out of Lab Management 57 Kenneth Drake-Sargent (New York University), Michael Hyde, Dustin Jones, Brandon Bybee (Labstats) 57 |
| • | Augmented and Virtual Reality: Discovering Their Uses in Natural Science Classrooms and Beyond 61 Austun Ables (Whitman College) |
| Pa | aper Session - Tuesday, 9:00am |
| • | Jetstream: A Cloud System Enabling Learning in Higher Education Communities |

| • | Scratching the Surface of Windows Server 2016 and System Center Configuration Manager Current Branch | 73 |
|----|---|-------|
| • | The Student Levels Project | 81 |
| P | aper Session - Tuesday, 1:15pm | |
| | Leveraging the 24x7 Operations Center to Extend Help Desk Service Hours | 85 |
| • | William Stirling, Terrie Schrudder (University of Washington) | 05 |
| • | You Know You Want to Read This - Communicating Effectively in Tech Support Robert H. Guissanie Jr (Bucknell University) | 89 |
| • | Beyond Geek Speak: Dedicated Communications Expert is Critical to a Successful Campus IT Shop Vicki L. Smith (West Virginia University) | 95 |
| • | Intentional Transparency - How to Develop One Service Catalog for All IT Services Elizabeth Rugg (University of North Carolina, Charlotte) | . 101 |
| Pa | aper Session - Tuesday, 2:30pm | |
| • | New Educational ICT Environment with Cloud in Kyushu University Naomi Fujimura, Satoshi Hashikura <i>(Kyushu University)</i> | . 105 |
| • | Our Experience with Introducing Microsoft Office 365 in Kyushu University Yoshiaki Kasahara, Takao Shimayoshi, Masahiro Obana, Naomi Fujimura <i>(Kyushu University)</i> | . 109 |
| • | Calling Up IT Prospects Angel C. Williams (<i>Tulane University</i>) | . 113 |
| • | First Year's Efforts and Operational Results of BYOD Action in TUAT with New Style Virtual Computer Classroom Kazuhiro Mishima, Takeshi Sakurada, Yoshikazu Kawamura, Yoichi Hagiwara (Tokyo University of Agriculture and Technology) | . 115 |
| • | Conquering Student Printing Brian Yulke (NYU School of Law) | . 119 |
| • | From eLearning to eScience: Building a Service Oriented Architecture to Support Research | 123 |
| | Marius Politze, Thomas Eifert (<i>RWTH Aachen University</i>) | . 125 |
| • | Games: Facilitating Communications Training (and Fun) Eric Handler (Macalester College), | . 127 |
| • | Producing Video Clips for Information Ethics and Security in Higher Education Tomohito Wada (<i>National Institute of Fitness and Sports</i>), Izumi Fuse, Shigeto Okabe (<i>Hokkaido University</i>), Takeo Tatsumi (<i>Open University of Japan</i>), Hiroshi Ueda (<i>Kyoto University</i>), Tetsutaro Uehara (<i>Ritsumeikan University</i>), Michio Nakanishi (<i>Osaka Institute of Technology</i>), Takahiro Tagawa (<i>Kyushu University</i>), Ikuya Murata (<i>University of Teacher Education Fukuoka</i>) | . 129 |
| Pa | aper Session - Tuesday, 4:00pm | |
| • | Management of Carrying PC Terminals and Initialization of User Directory by Shifts for Students Masayuki Mori, Hideo Masuda, Takayuki Nagai (<i>Kyoto Institute of Technology</i>) | . 133 |
| • | Developing a Help Desk Board Game Casey Babcock (SUNY Geneseo) | . 139 |
| Pa | aper Session - Wednesday, 9:00am | |
| • | Increasing Security by Focusing on Endpoints Beth Rugg, Brandon DeLeeuw (University of North Carolina, Charlotte) | . 145 |

| • | Ready, Set, GOOGLE! |
|----|---|
| • | Understaffed? A Case Study in Empowering a User Community to Get a Large Project Done |
| • | Giving More Effective Feedback |
| Pa | aper Session - Wednesday, 10:30am |
| • | Fostering Independence: Project Work for Student Technicians |
| • | Monitoring Servers, With a Little Help from my Bots |
| Pa | aper Session - Wednesday, 1:15pm |
| • | Is Imaging Down? Developing and Supporting a Large Scale Laptop Checkout Program 181 Sean Griffin, Alex Davis (University of Wisconsin - Madison) |
| • | Client Driven Change Management |
| • | What's Your Story? 191 Casey Davis (Arizona State University) |
| Pa | aper Session - Wednesday, 2:30pm |
| • | Connecting Students to Life Beyond the Campus Walls: How I Developed a Training Program to Prepare Students for "Life in the Real World" |
| • | Delivering Tomorrow's Workspace – Reimagining Application and Desktop Delivery Strategies |
| A | uthor Index |

2017 SIGUCCS CONFERENCE COMMITT



Conference Chair CATE LYON Whitman College



Outgoing Board Liaison & Photography Coordinator MELISSA BAUER Baldwin Wallace University



Hospitality Room Coordinator Eric Handler Macalester College



Registration Chair & Mobile App Coordinator SHAWN PLUMMER SUNY Geneseo



Track Chair MELISSA DOERNTE Stanford University

Program Readers

JULIO APPLING, Lewis & Clark College PATRICIA CIUFFO, Touro College And University System MICHAEL CYR, University of Maine MARIANNA DOHERTY, Dickinson College LAURIE FOX, SUNY Geneseo



Program Chair KRISTEN DIETIKER Menlo College



Communication Awards LISA BROWN University of Rochester



Poster Session Chair LISA BARNETT NYU School of Law



Social Coordinator ROBERT FRICKE Whitman Collge



Track Chair CHRIS KING State of North Carolina



Program Chair CHRIS WIESEMANN University of Oregon



Exhibitor Chair ALLAN CHEN Muhlenberg College



Pre-Conference Seminars BETH RUGG UNC - Charlotte



Social Networking Chair MO NISHIYAMA Oregon Health & Science University



Track Chair MATTHEW MADEROS Boston University



Treasurer TERRY RUGER Ithaca College



First Timers Coordinator Dinah Logan Texas A&M University



Publications & Track Chair KELLY WAINWRIGHT Lewis & Clark College



Volunteer Coordinator **KENDRA STRODE** Carleton College



Track Chair JOHN TYNDALL Penn State University

KATE GILBREATH, The Ohio State University BOB HARING-SMITH, Retired CHERYL TARBOX, Binghamton University DAN VANDER PLOEG, University of Illinois RACHEL WEAVER, Macalester College



Incoming Board Liaison & Track Chair DAN HERRICK University of Colorado Boulder



Graphic Designer & Posters Becky Cowin Washington University in St. Louis



Publicity Chair ALEXA SPIGELMYER Penn State University



Webmaster & Reader MIRANDA CARNEY-MORRIS Lewis & Clark College



THANKS TO OUR EXHIBITORS

The 2017 SIGUCCS Conference is made possible largely due to the generous support of our exhibitors. On behalf of the conference, we would like to extend our sincere thanks for your support and presence, both which enhance the entire conference experience.

Attendees face similar challenges and needs at their respective institutions. They come to SIGUCCS knowing there will be opportunity to engage with exhibitors in a significant dialogue. Many of our exhibitors already have relationships with participating institutions which provides an invaluable foundation for meeting new potential clients.

DLAT

We hope you enjoy the experience and we appreciate your support.

- The 2017 SIGUCCS Conference Exhibitor Team -

INUM EXHIBITORS oftware com **GOLD EXHIBITORS** ILVER EXHIBITORS

