Schedule At A Glance

WEDNESDAY

	A	B	C
ROOMS:	***South Ballroom***	***Catalina***	***Rincon***
7:30-8:30	BREAKFAST (North Ballroom)		
Session 1 8:30-9:45	PLENARY SESSION (South Ballroom) with CONFERENCE OPENING Speakers: Ann Cox (DHS), and Laretta Bickford (NETCOM)		
Session 2 9:45-10:40	Panel - Compliance & Infrastructure Building	Panel - Security and Privacy	Papers: Data Science & Analytics
10:40-10:50	BREAK (North Ballroom)		
Session 3 10:50-12:05	Panel - Dark Networks and Ideology Panel - Cyber Intelligence	Papers: Threat Intelligence	Papers: Big Data Analytics for Cybersecurity
12:05-1:05	LUNCH (North Ballroom)		
Session 4 1:05-2:20	Panel - Information Sharing and Collaboration	Papers: Data Science & Analytics	Doctoral Consortium
2:20-2:30	BREAK (North Ballroom)		
Session 5 2:30-4:10	Papers: Policy and Behavioral Factors	Papers: Threat Intelligence	Doctoral Consortium, continues
4:10-4:20	BREAK (North Ballroom)		
Session 6 4:20-5:50	Panel - Policy and Workforce Development	Papers: Threat Intelligence	Papers: Data Science & Analytics
6:00-8:00	ALL CONFERENCE RECEPTION AT HALL OF CHAMPIONS		

THURSDAY

	A	B	C
ROOMS:	***South Ballroom***	***Catalina***	***Rincon (Santa Rita-overflow)***
7:30-8:30	BREAKFAST (North Ballroom)		
Session 1 8:30-9:05	PLENARY SESSION (South Ballroom) Speaker: Dongwon Lee (NSF)		
Session 2 9:05-10:45	Panel - Cybersecurity Education	Papers: Big Data Analytics	Capture the Flag
10:45-10:50	BREAK (North Ballroom)		
Session 3 10:50-12:30	Papers: Cybersecurity Education & Workforce	Papers: Data Science and Analytics	Capture the Flag, continues
12:30-1:30	LUNCH (North Ballroom)		
Session 4 1:30-2:30	Panel - Cybersecurity Challenges and Opportunities for Industy	Papers: Cybersecurity Education & Workforce	Capture the Flag, continues
2:30-2:40	BREAK (North Ballroom)		
Session 5 2:40-4:10	Panel - Women in Cybersecurity	Panel - Cybersecurity Deception	Capture the Flag, continues
Session 6 4:10-5:10	Papers: Women in Cybersecurity	Papers: Data Science & Analytics	Capture the Flag, continues
5:30-8:45	RECEPTION, POSTER SESSION, and AWARDS AT TANQUE VERDE GUEST RANCH		

FRIDAY

	A	B
ROOMS:	***South Ballroom***	***Catalina***
7:30-8:30	BREAKFAST (North Ballroom)	
Session 1 8:30-9:50	Panel - Data Infrastructure Building Blocks for ISI	Papers: Data Science & Analytics
9:50-10:10	BREAK (North Ballroom)	
Session 2 10:10-12:00	Plenary Panel - Security Analytics	
12:00	Conference Close and Grab and Go Lunch	

Wednesday, September 28, 2016

7:30-8:30	**BREAKFAST (North Ballroom)**		
Session 1: 8:30-9:45	**PLENARY SESSION (South Ballroom)** **CONFERENCE OPENING**: Kimberly Espy, University of Arizona Vice-President for Research; Lisa Ordóñez, Vice Dean, Eller College of Management; Sue Brown, Interim MIS Department Head; Hsinchun Chen, Regents' Professor and Conference Chair **KEYNOTE SPEAKERS:** • Ann Cox, Program Manager in the Cyber Security Division (CSD) for the Homeland Security Advanced Research Projects Agency at DHS S&T. "DHS''s Internet Measurement and Attack Modeling Program" • Laretta Bickford, Director of Cybersecurity for US Army NETCOM, "The Risk Management Framework and Big Data Requirements"		
Session 2: 9:45-10:40	A **South Ballroom** **Panel - Compliance & Infrastructure Building** • Tina Slankas, Cyber Security Program Coordinator for the City of Phoenix • Michael Foster and Patrick Cullen, FBI, Tucson. "Computer Network Exploitation (CNEs)" • Jason Denno, UA-South. "Cyber Virtual Learning Environment"	B **Catalina** **Panel - Security and Privacy** • Joe Valacich, Univ. of Arizona, MIS. "Validating Active Indicators for the Identification of Insider Threats" • Laura Brandimarte, Univ. of Arizona, MIS. "How does Government Surveillance Affect Perceived Online Security? Preliminary Evidence from One Year of Tweets" • Matt Hashim, Univ. of Arizona, MIS. "Human Exploits in Cybersecurity: A Social Engineering Study"	C **Rincon** **Papers: Data Science & Analytics** Identifying the Socio-Spatial Dynamics of Terrorist Attacks in the Middle East (Ze Li, Duoyong Sun, Hsinchun Chen, and M. Huang) Exploring the Online Underground Marketplaces through Topic-Based Social Network and Clustering (Shin-Ying Huang and Hsinchun Chen)
10:40-10:50	**BREAK (North Ballroom)**		
Session 3: 10:50-12:05	A **South Ballroom** **Panel - Dark Networks and Ideology** • Al Bergesen, Univ. of Arizona, Sociology. "The Theological Foundations of the Lone Wolf Islamist Terrorist" • Brint Milward, University of Arizona, Government & Public Policy. "A Preliminary Theory of Dark Network Resilience." **Panel - Cyber Intelligence** • John Matherly, Shodan. "Conversations with Your Refrigerator" • Christian Schreiber, FireEye. "Finding the RIGHT Needle in a Field of Big Data Haystacks"	B **Catalina** **Papers: Threat Intelligence** Darknet and Deepnet Mining for Proactive Cybersecurity Threat Intelligence (Eric Nunes, Paulo Shakarian, Ahmad Diab, Ericsson Marin, Andrew Gunn, Jana Shakarian, John Robertson, Vivin Paliath, Amanda Thart and Vineet Mishra) Exploring Key Hackers and Cybersecurity Threats in Chinese Hacker Communities (Zhen Fang, Xinyi Zhao, Qiang Wei, Guoqing Chen, Yong Zhang, Chunxiao Xing, Weifeng Li and Hsinchun Chen) Mining Hospital Data Breach Records: Emerging Cyber Threats to U.S. Hospitals (Travis Floyd, Matthew Grieco and Edna Reid)	C **Rincon** **Papers: Big Data Analytics for Cybersecurity** Model-Based Clustering and New Edge Modelling in Large Computer Networks (Silvia Metelli and Nicholas Heard) Automated Big Text Security Classification (Khudran Alzhrani, Ethan Rudd, Terrance Boult and C. Edward Chow) Near Real-time Atrocity Event Coding (Mohiuddin Solaimani, Sayeed Salam, Latifur Khan, Patrick Brandt, Bhavani Thuraisingham and Ahmad Mustafa)

Wednesday, September 28, 2016, cont.

<table>
<tr><td>12:05-1:05</td><td colspan="3">LUNCH (North Ballroom)</td></tr>
<tr><td></td><td>A</td><td>B</td><td>C</td></tr>
<tr><td></td><td>South Ballroom</td><td>Catalina</td><td>Rincon</td></tr>
<tr><td>Session 4: 1:05-2:20</td><td>Panel - Information Sharing and Collaboration
Julie Dunn, National Cyber-Forensicx & Training Alliance. “NCFTA’s Malware Portal and Internet Fraud Alert System"
Frank Grimmelmann, Arizona Cyber Threat Response Alliance. “Cybersecurity’s Human Factor in Operationalizing Threat Intelligence"
Brett L. Scott, Arizona Cyber Warfare Range. "The Bad Guys Collaborate to Clobber You. Why Aren’t You Collaborating?"</td><td>Papers: Data Science & Analytics
Measuring Online Affects in a White Supremacy Forum (Léo Figea, Lisa Kaati and Ryan Scrivens)
Automatic Detection of Xenophobic Narratives: A Case Study on Swedish Alternative Media (Lisa Kaati, Amendra Shrestha, Katie Cohen and Sinna Lindquist)
Identifying Features for Detecting Fraudulent Loan Requests on P2P Platforms (Jennifer Xu, Dongyu Chen and Michael Chau)</td><td rowspan="4">Doctoral Consortium
Oral Presentations (1:00-2:45 pm)
Approaches to Understanding the Motivations Behind Cyber Attacks (Sumeet Kumar, Carnegie Mellon University)
Modeling Cyber-Attacks on Industrial Control Systems (Vivin Palliate, Arizona State University)
Using Social Network Analysis to Identify Key Hackers for Keylogging Tools in Hacker Forums (Sagar Samtani, University of Arizona)
Targeting Key Data Breach Services in Underground Supply Chain (Weifeng Li, University of Arizona)
Soft Computing and Hybrid Intelligence for Decision Support in Forensics Science (Andrii Shalaginov, Norwegian University of Science and Technology)
Detecting Radicalization Trajectories Using Graph Pattern Matching Algorithms (Benjamin Hung, Colorado State University)
Topic Modeling of Small Sequential Documents: Proposed Experiments for Detecting Terror Attacks (Brandon Jones, University of Central Florida)
Mentoring session (for selected doctoral students only) (2:45 - 3:10 pm)
Panel - How to Prepare for a Career in ISI as a Doctoral Student? (3:10-4:10 pm)
Panelists:
Hsinchun Chen, Univ. of Arizona
Lisa Daniels, KPMG
Dongwon Lee, National Science Foundation
Richard Frank, Simon Fraser University
Facilitator: Chris Yang, Drexel University</td></tr>
<tr><td>2:20-2:30</td><td colspan="2">BREAK</td></tr>
<tr><td rowspan="3">Session 5: 2:30-4:10</td><td>A</td><td>B</td></tr>
<tr><td>South Ballroom</td><td>Catalina</td></tr>
<tr><td>Papers: Policy and Behavioral Factors
The Impact of US Cyber Policies on Cyber-Attacks Trend (Sumeet Kumar, Matthew Benigni and Kathleen M. Carley)
Rights Management to Enable a True Internet of Things (Robert Newman, Pat Doody, Mira Trebar and Uchenna Okeke)
Trust and Distrust as Distinct Constructs: Evidence from Data Theft Environments (Steven Simon)
Phishing Susceptibility: The Good, the Bad, and the Ugly (Ahmed Abbasi and Mariam Zahedi)</td><td>Papers: Threat Intelligence
Using Cyber Defense Exercises to Obtain Additional Data for Attacker Profiling (Joel Brynielsson, Ulrik Franke, Muhammad Adnan Tariq and Stefan Varga)
PhishMonger: A Free and Open Source Public Archive of Real-World Phishing Websites (David Dobolyi and Ahmed Abbasi)
Topic Modelling of Authentication Events in an Enterprise computer network (Nick Heard, Konstantina Palla and Maria Skoularidou) (Short Paper)
SCADA Honeypots: An In-depth Analysis of Conpot (Arthur Jicha, Mark Patton and Hsinchun Chen) (Short Paper)</td></tr>
<tr><td>4:10-4:20</td><td colspan="2">BREAK (North Ballroom)</td></tr>
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Wednesday, September 28, 2016, cont.

	A	B	C
	South Ballroom	**Catalina**	**Rincon**
Session 6: 4:20-5:50	**Panel - Policy and Workforce Development** • Sy Goodman, Georgia Tech, Sam Nunn School of Intl. Affairs and College of Computing. "Critical Infrastructures and Their Well Being" • Derek Bambauer, Univ. of Arizona, Law, "Does Cybersecurity Need More Law?" • Will Foster, UA South. "Why US-China Cyber-relations Should Be Part of the Cyber-security Curriculum" • Linda Denno, UA South, Govt & Publiv Svc. "U.S. Cyber Deterrence Policy"	**Papers: Threat Intelligence** AZSecure Hacker Assets Portal: Cyber Threat Intelligence and Malware Analysis (Sagar Samtani, Kory Chinn, Cathy Larson and Hsinchun Chen) Identifying SCADA Vulnerabilities Using Passive and Active Vulnerability Assessment Techniques (Sagar Samtani, Shuo Yu, Hongyi Zhu, Mark Patton and Hsinchun Chen) Product Offerings in Malicious Hacker Markets (Ericsson Marin, Ahmad Diab and Paulo Shakarian) (Short Paper) Identifying Devices across the IPv4 Address Space (Ryan Jicha, Mark Patton,and Hsinchun Chen) (Short Paper)	**Papers: Data Science & Analytics** Effective Prioritization of Network Intrusion Alerts to Enhance Situational Awareness (E Allison Newcomb, Robert Hammell and Steve Hutchinson) Surfacing Collaborated Networks in Dark Web to Find Illicit and Criminal Content (Ahmed Zulkarnine, Richard Frank, Bryan Monk, Julianna Mitchell and Garth Davies) Identifying Language Groups within Multilingual Cybercriminal Forums (Victor Benjamin and Hsinchun Chen) (Short Paper) Poisson Factorization For Peer-Based Anomaly Detection (Melissa Turcotte, Juston Moore, Nicholas Heard and Aaron McPhall) (Short Paper)
6:00-8:00p	**All-Conference Reception at Hall of Champions**		

Thursday, September 29, 2016

7:30-8:30	**BREAKFAST (North Ballroom)**		
Session 1: 8:30-9:05	**PLENARY SESSION (South Ballroom)** **PLENARY SPEAKER:** Dongwon Lee, NSF, EHR/DGE, SaTC/SFS. "NSF Funding Opportunities on Cybersecurity and Data Science"		
	A	B	C
	South Ballroom	**Catalina**	**Rincon and Santa Rita**
Session 2: 9:05-10:45	**Panel - Cybersecurity Education** • Balaji Padmanabhan, Chair, Info Syst Decision Sci, Univ. of South Florida. "A Multidisciplinary Approach to Academic Cybersecurity Programs at USF" • Roberto Mejias, CIS and Director of the Center for Cyber Security Education and Researcg (CCSER) at Colorado State University-Pueblo. "Issues, Challenges & Helpful Hints for the New & Rigorous NSA-CAE/CDE Designation Application Process" • Sidd Kaza, Towson, Computer Science & Cybersecurity. • Bill Neumann, Univ. of Arizona, GenCyber • Mark Patton, University of Arizona, Scholarship-for-Service	**Papers: Big Data Analytics** Network-Wide Anomaly Detection via the Dirichlet Process (Nick Heard and Patrick Rubin-Delanchy) (Short Paper) Parallel Massive Data Monitoring and Processing Using Sensor Networks (Hamid Reza Naji and Najmeh Rezaee) (Short Paper) Understanding DDoS Cyber-Attacks using Social Media Analytics (Sumeet Kumar and Kathleen Carley) (Short Paper) IoT Security Development Framework for Building Trustworthy Smart Car Services (Jesus Horacio Pacheco Ramirez, Salim Hariri, Shalaka Satam, Clarisa Grijalva and Helena Berkenbrock) (Short Paper) Disassortativity of Computer Betworks (Patrick Rubin-Delanchy, Niall Adams and Nicholas Heard) (Short Paper)	**Capture the Flag**

Thursday, September 29, 2016, cont.

10:45-10:50	**BREAK (North Ballroom)**		
	A	B	C
	South Ballroom	**Catalina**	**Rincon and Santa Rita**
Session 3: 10:50-12:30	**Papers: Cybersecurity Education & Workforce** An Undergraduate Cyber Operations Curriculum in the Making: A 10+ Year Report (Shiva Azadegan and Michael O'Leary) (Short Paper) Engaging Females in Cybersecurity: K through Gray (Xiang Liu and Diane Murphy) (Short Paper) Using Eye-tracking to Investigate Content Skipping: A Study on Learning Modules in Cybersecurity (Sagar Raina, Leon Bernard, Blair Taylor and Siddharth Kaza) (Short Paper) Cybersecurity Workforce Development: A Peer Mentoring Approach (Vandana Janeja, Carolyn Seaman, Kerrie Kephart, Aryya Gangopadhyay and Amy Everhart) (Short Paper) Design and Implementation of a Multi-Facet Hierarchical Cybersecurity Education Framework (Wei Wei, Arti Mann, Kewei Sha and Andrew Yang) (Short Paper)	**Papers: Data Science and Analytics** Bayesian Nonparametric Relational Learning with the Broken Tree Process (Justin Sahs) Predictability of NetFlow Data (Marina Evangelou and Niall Adams) Shodan Visualized (Vincent Ercolani, Mark Patton and Hsinchun Chen) (Short Paper) Activity-Based Temporal Anomaly Detection in Enterprise-Cybersecurity (Mark Whitehouse, Marina Evangelou and Niall Adams) (Short Paper)	Capture the Flag, continues | | | | | | | | | |
12:30-1:30	**LUNCH (North Ballroom)**		
	A	B	C
	South Ballroom	**Catalina**	**Rincon and Santa Rita**
Session 4: 1:30-2:30	**Panel - Cybersecurity Challenges and Opportunities for Industy** • Joshua Neil, Ph.D., Ernst & Young, Security Analytics | Advanced Security Center. "Data Science in Industry Cyber Security: Using Rarity to Detect Lateral, Reconnaissance and Data Staging Behaviors" • Lisa Daniels, Managing Partner, KPMG LLP. "The Consumer Loss Barometer" • Jason Rader, National Director for IT Security, Datalink.	**Papers: Cybersecurity Education & Workforce** Smart Augmented-Reality Glasses in Cybersecurity and Forensic Education (Nikitha Kommera, Faisal Kaleem and Syed Mubashir Shah Harooni) (Short Paper) CySCom: CyberSecurity COMics (Brian Ledbetter, Zach Wallace, Adam Harms and Ambareen Siraj) (Short Paper) Challenges, Lessons Learned and Results from Establishing a CyberCorps: Scholarship for Service Program Targeting Undergraduate Students (Shiva Azadegan, Josh Dehlinger, Sidd Kaza, Blair Taylor and Wei Yu) (Short Paper)	Capture the Flag, continues | | | | | | | | | |
2:30-2:40	**BREAK (North Ballroom)**		

Thursday, September 29, 2016, cont.

	A	B	C
	South Ballroom	**Catalina**	**Rincon and Santa Rita**
Session 5: 2:40-4:10	**Panel - Women in Cybersecurity: A Day in the Life** Each woman will address "a day in her life" from a cybersecurity professional perspective as well as a personal one. • Ann Cox, DHS - Agency • Lisa Daniels - KPMG - Industry • Edna Reid - James Madison University - Academia+ • Ambareen Siraj, Tenn. Tech. - Academia • Tina Slankas - City of Phoenix - Local gov Facilitator: Gondy Leroy	**Panel - Cybersecurity Deception: Toward the Development of a Theory That Focuses on the Cognitivev Process (Chair: Jay Nunamaker)** • Tom Holt, Criminology, MSU • Julian Rrushi, Western Washington University, Computer Science • Judee Burgoon, UA Professor of Communication, Ctr. for Management of Info.	**Capture the Flag continues**
	A	B	C
	South Ballroom	**Catalina**	**Rincon and Santa Rita**
Session 6: 4:10-5:10	**Papers: Women in Cybersecurity** Intruder Detector: A Continuous Authentication Tool to Model User Behavior (Leslie Milton and Atif Memon) (Short Paper) An Immune inspired Unsupervised Intrusion Detection System for Detection of Novel Attacks (Manjari Jha and Raj Acharya) (Short Paper) Automatic Clustering of Malware Variants (Rima Asmar and Kirk D Sayre) (Short Paper)	**Papers: Data Science & Analytics** A Non-Parametric Learning Approach to Identify Online Human Trafficking (Hamidreza Alvari, Paulo Shakarian and J.E. Kelly Snyder) Discovering Structure in Islamist Postings Using Systemic Nets (Nasser Alsadhan and David Skillicorn)	**Capture the Flag continues**
5:30-6:00	Board Mountain View Buses and Travel to Tanque Verde Guest Ranch		
6:00-8:15	All Conference Poster Session, Reception, and Awards Ceremony		
8:15-8:45	Return to Hotels and Campus		

Friday, September 30, 2016

7:30-8:30	**BREAKFAST (North Ballroom)**	
Session 1: 8:30-9:50	A **South Ballroom**	B **Catalina**
	Panel - Datainfrastructure Building Blocks for ISI • Ahmed Abbasi, Univ. of Virginia, IT/School of Commerce • Resha Shenandoah, Univ. of Arizona, School of Information • Paul Hu, Univ. of Utah, Operations & Info. Systems	**Papers: Data Science & Analytics** Social Media Account Linkage Using User-Generated Geo-location Data (Xiaohui Han, Lianhai Wang, Lijuan Xu and Shuihui Zhang) Chinese Underground Market Jargon Analysis Based on Unsupervised Learning (Kangzhi Zhao, Yong Zhang, Chunxiao Xing, Weifeng Li and Hsinchun Chen) Activity Monitoring Using Topic Models (Boshra Nabaei and Martin Ester)
9:50-10:10	**BREAK (North Ballroom)**	
Session 2: 10:10-12:00	**PLENARY SESSION (South Ballroom)**	
	Plenary Panel - Security Analytics • Ahmed Abbasi, Univ. of Virginia, IT/School of Commerce, "Socio-Technical Predictive Analytics for Cybersecurity: A People, Process, and Technology Perspective" • Richard Frank, Simon Fraser University, Computational Criminology. "Illicit Payments for Illicit Goods – A study of Russian Online Drug Marketplaces" • Paulo Shakarian, School of Computing, Informatics & Decision Syst Engin, ASU. "Reducing Risk in the Face of Adaptive Threats in Cyberspace" • Beichuan Zhang, Univ. of Arizona, Computer Science, "Internet Routing Security" • Latifur Khan, Univ. of Texas at Dallas, Computer Science, "Big Data Analytics in Cyber Security"	
12:00	**Conference Close and Grab and Go Lunch**	