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Using Blockchain to Secure the Supply Chain

Distributed Ledgers and Logistics for Critical Goods

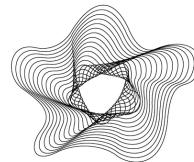
WHEN: November 14, 2017 | 9am-6pm

WHERE: University of California, Irvine

Division of Continuing Education | Building CE1, Yosemite Rooms ABC

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UCI Cybersecurity Policy
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Why blockchains & supply chains?

When people hear the word Bitcoin they think speculative bubbles, scandal-ridden and shady ventures, or maybe efforts by governments like China's to ban the cryptocurrency altogether. But blockchain technology is being heavily invested in by Wall Street banks, tech giants from Intel to Google, and even facilities maintenance and agricultural concerns. Why? Blockchain technology provides a new way to authoritatively record and track transactions in a decentralized, distributed fashion, with the potential to disrupt traditional intermediaries and possibly whole industries. Created for cryptocurrencies but migrating into payments, law, and accounting, blockchain and other distributed ledger technologies are being developed for a variety of applications, from securities settlement to identity management. A rapidly-growing area of blockchain investment is logistics, not just the movement of physical goods but also the replication and distribution of digital ones, too.

Thus, while blockchain-based distributed ledger systems have been described as a solution in search of a problem, supply chain security in the cyberworld may be one such problem. Up to 80% of cyber breaches may involve supply chain compromise. Supply chain risks include counterfeit goods and malware-embedded software and hardware, used directly by a consumer or embedded in other devices. One of the largest distributed denial-of-service attacks was enabled by compromised software in devices like digital cameras. Distributed ledger technologies show particular promise for reliably tracking titles to property, the provenance of precious goods, and the ownership of art and intellectual property and for securing the supply chains for software and other critical technologies. With high-profile pilot projects from IBM, Walmart, Bank of America, and others, important global actors are betting on blockchain and related emerging distributed ledger technologies—the technologies underlying Bitcoin—to transform supply chain security in the cyber age.

Digital economies for soft goods (software, intellectual property, digital creative content) and a globalized economy for vital hard goods (medical devices, food, critical infrastructure, precious goods) rely on the coordination of complex supply chains involving multiple producers, manufacturers, resellers, and service providers. Secure and reliable supply chains depend on systems of sourcing and procurement, inventory tracking and management, logistics and finance, and, especially for software, version control, updating and patching, and access limitation. How might blockchain technologies help make these supply chains more secure and reliable—and reshape the future of the global economy? And how do industry leaders, scholars, experts, and officials separate the hope from the hype? This conference, the first of its kind, will hone in on the promise (and perils!) of blockchain technology for logistics and critical goods in digital and physical hardware.

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AGENDA

9-9:30am — Registration — with coffee, tea, and light breakfast

9:30-9:45am — Welcome — Bryan Cunningham, CPRI & Bill Maurer, IMTFI

9:45-10:30am — What is the blockchain, anyway? A primer w/ Quinn DuPont & Bill Maurer

10:30-11:30am — Keynote 1 — Tracy Frost, DoD Manufacturing Technology

11:30am-12:30pm — Lunch

12:45-1:45pm — Panel 1: Industry perspectives — moderated by Bryan Cunningham
Steve Granata, MITRE Center for National Security
Mac McGary, Sweetbridge
Spencer Stephens, formerly Sony Pictures Entertainment
Micah Winkelspecht, Gem

1:45-2pm — Networking break

2-3pm — Panel 2: Academic perspectives — moderated by Bill Maurer
Quinn DuPont, School of Information, University of Washington
Taylor C. Nelms, Department of Anthropology, UC Irvine
Walt Scacchi, Institute for Software Research, UC Irvine
Rachel O'Dwyer, CONNECT, Trinity College Dublin

3-3:15pm — Networking break

3:15-4pm — Keynote 2 — Paul Chang, IBM

4-4:15pm — Concluding remarks — Bill Maurer

4:15-6pm — Reception

With wine and cheese

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Keynote Speakers



Paul Chang

Global Blockchain Industry Lead,
Distribution & Industrial Markets, IBM

Paul Chang is the WW Leader for Blockchain for Distribution & Industrial Markets. In this role, he is responsible for the evangelism, enablement, and business development of IBM's Blockchain offerings targeting Supply Chain, Operations, Finance, and Sales & Marketing functions. Paul has deep expertise in the Retail, Consumer Products, Wholesale/Distribution, Automotive, and Industrial sectors and is a globally recognized expert in supply chain, traceability, and IoT.

Paul has more than 27 years of experience in technology and market development in new technologies such as traceability, biotech, and optical networks. Most recently, Paul has led the global initiative at IBM in the product tracking technology for pharmaceutical, food, and retail sectors. He has also been actively involved with the US FDA's drug anti-counterfeiting and food safety initiative since 2003. Prior to joining IBM 13 years ago, Paul worked with several venture-back startup companies developing brand new markets leveraging innovative technologies.

Paul earned a Bachelor of Science degree from Carnegie-Mellon University in mechanical engineering.



Tracy Frost

Director, Department of Defense (DoD)
Manufacturing Technology

Tracy Frost joined the Department of Defense (DoD) Office of Manufacturing and Industrial Base Policy (MIBP) in 2015. She is the Director of Manufacturing Technology with the Defense-wide Manufacturing Science and Technology program, as well as the DoD Manufacturing USA Institutes. Previously, Tracy served as the DoD SBIR/STTR Programs Administrator out of the DoD Office of Small Business Programs, where she implemented innovative initiatives to assist the small business community transition viable technologies to the military and commercial marketplace.

Before joining OSBP, Tracy managed the Office of Naval Research's SBIR Program. She consistently increased the number of SBIR firms that transitioned into Phase III each year by increasing the involvement of Acquisition enabler science and technology programs. Prior to small business involvement, Tracy served as a science and technology Program Manager for over 10 years in the areas of unmanned systems and ship logistics.

Tracy has a B.S. in Ocean Engineering from Florida Atlantic University and an M.S. in Engineering Management from George Washington University.

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Conference Participants



Bryan Cunningham

Executive Director, Cybersecurity Policy &
Research Institute, UC Irvine

As the first Executive Director of the multidisciplinary Cybersecurity Policy & Research Institute at UC Irvine, Bryan Cunningham is focused on solution-oriented strategies addressing technical, legal and policy challenges to combat cyber threats, protect individual privacy and civil liberties, maintain public safety and economic and national security, and empower Americans to take better control of their digital security.

Bryan is a leading international expert on cybersecurity law and policy, a former White House lawyer and adviser, and a media commentator on cybersecurity, technology and surveillance issues. He has extensive experience in senior U.S. government intelligence and law enforcement positions, serving as Deputy Legal Adviser to then-National Security Advisor Condoleezza Rice and in the Clinton Administration as a senior CIA officer and federal prosecutor. He is a founding partner of the Washington, DC-Los Angeles firm Cunningham Levy Muse, and he was founding vice-chair of the American Bar Association Cyber Security Privacy Task Force. Bryan was awarded the National Intelligence Medal of Achievement for his work on information issues.



Quinn DuPont

Research Associate, University of Washington, author of *Cryptocurrencies and Blockchains*

Quinn DuPont studies human and social dimensions of cybersecurity, cryptography, and code. He is a Research Associate at the School of Information, University of Washington. He has a PhD in Information Science (Toronto), and is an ALA-accredited librarian (Western). He has published widely for academic and popular audiences, with over twenty publications in venues such as *IEEE Annals of the History of Computing*, *First Monday*, *Philosophy and Technology*, *This Magazine*, and *The Christian Science Monitor*.

Quinn's current research focuses on cryptocurrencies and blockchain technologies. He is a member of the Standards Council of Canada, ISO, IEEE, and ITU blockchain standardization committees. His forthcoming book *Cryptocurrencies and Blockchains* (Polity) is a scholarly survey of cryptocurrencies and blockchain technologies in society. Previously, Quinn was a Senior Information Specialist at IBM, and has worked as a consultant at a variety of information technology organizations.

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Conference Participants



Steve Granata

Principal Economics & Business Analyst,
MITRE Center for National Security

Steve Granata is a Principal Economics and Business Analyst with The MITRE Corporation, based in San Diego. As a member of the National Security Federally Funded Research and Development Center, Steve supports the Department of Defense and other government agencies in analysis and implementation of supply chain risk management measures for critical military command-and-control and national security systems. He has been with MITRE since 2004, and previously worked in the telecommunications industry and as a Procurement Analyst for a large Federal agency.

Steve holds a B.S. in Finance from the University of Maryland College Park and a Master of Public Administration from The George Washington University.



Bill Maurer

Dean of Social Sciences,
Director of the Institute for Money,
Technology & Financial Inclusion, UC Irvine

Bill Maurer is a cultural anthropologist who conducts research on money, property, technology, and law, with particular expertise in alternative and experimental forms of money, finance, and payment. He has studied offshore financial services in the Caribbean, Islamic finance and community currencies, mobile phone-enabled money transfer, cryptocurrencies and blockchain/distributed ledger systems. His books include *Mutual Life, Limited: Islamic Banking, Alternative Currencies, Lateral Reason* (2005), *How Would You Like to Pay? How Technology is Changing the Future of Money* (2015), and *Paid: Tales of Dongles, Checks, and Other Money Stuff* (2017, with Lana Swartz). His research has been supported by grants from the National Science Foundation, the Russell Sage Foundation, and the Filene Research Institute.

Bill currently serves as Dean of the School of Social Sciences and founding Director of the Institute for Money, Technology and Financial Inclusion at UC Irvine. Funded by the Bill and Melinda Gates Foundation, IMTFI supports research on new financial technologies around the world. In 2015, Bill was appointed to the Board on Behavioral, Cognitive and Sensory Sciences of the National Academy of Sciences; in 2016, he was named a fellow of the American Association for the Advancement of Science.

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Conference Participants



Mac McGary

President,
Sweetbridge

Mac McGary is the President of Sweetbridge. Most recently he was Chief Revenue Officer of GT Nexus – the largest supply chain network in the cloud. When he joined GT Nexus the company was \$20M in revenue, five years later the company reached \$170M in revenue and was acquired by Infor for \$675M. Mac has held sales leadership positions in two companies, i2 Technologies and Information Management Associates, which achieved impressive growth and successful IPOs.

Mac began his career in software in 1985 as a computer programmer and has a degree in economics from Claremont McKenna College. He has lived outside the U.S. for 14 years and has held global revenue responsibilities for several large companies for more than a decade.

Mac holds a BA in Economics from Claremont McKenna College in California.



Taylor C. Nelms

Postdoctoral Researcher, UC Irvine,
Co-Editor in Chief, *Journal of
Cultural Economy*

Taylor C. Nelms is an anthropologist and ethnographer of money, technology, bureaucracy, and everyday economic and political life. He is a Postdoctoral Researcher in the Department of Anthropology at UC Irvine and the Co-Editor in Chief of the interdisciplinary *Journal of Cultural Economy*.

Taylor has written on topics ranging from Latin American left-populism, to the use of the US dollar as international reserve currency, to zombie banks and Bitcoin. With Scott Mainwaring, Bill Maurer, Stephen C. Rea, and Lana Swartz, he runs the Future of Money Research Collaborative.

Taylor holds a PhD from UC Irvine and an MPhil from the University of Cambridge. He is a former Gates Cambridge scholar.

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Conference Participants



Rachel O'Dwyer

Research Fellow, Trinity College Dublin,
curator of the Openhere P2P festival

Rachel O'Dwyer is a research fellow in CONNECT, the world leading Science Foundation Ireland Research Centre for Future Networks and Communications, headquartered at Trinity College Dublin. She writes, speaks, and organizes events on emerging markets at the intersection of data, mobile networks, and payments.

Rachel is the curator of Openhere, a festival and conference on the digital commons, and the leader of the Dublin Art and Technology Association. She is an active contributor to the Platform Cooperativism Consortium and core member of the P2P Foundation, where she coordinates the P2P academic research network and 100 women in peer-to-peer. She is also the founding editor-in-chief of the open access, peer-reviewed journal *Interference: A Journal of Audio Culture*.



Walt Scacchi

Senior Research Scientist, Institute for Software Research, Director of Research, Institute for Virtual Environments and Computer Games, UC Irvine

Walt Scacchi is senior research scientist and research faculty member in the Institute for Software Research, and also Director of Research at the Institute for Virtual Environments and Computer Games, both at University of California, Irvine. He received a Ph.D. in Information and Computer Science at UC Irvine in 1981. From 1981-1998, he was a professor at the University of Southern California. He returned to UC Irvine in 1999.

Walt's research interests include cybersecurity of open architecture systems and intellectual property, open source software development, computer game culture and technology, and virtual worlds for modeling and simulating complex socio-technical processes. He is an active researcher with more than 200 research publications, and has directed 70 externally funded research projects, including five focused on software cybersecurity. He has given more than 200 invited presentations world-wide, including 17 keynote addresses and 7 tutorials. He also has had numerous consulting and visiting scientist positions with more than 40 firms or institutes, including five start-up ventures. He served as General Co-Chair for the 8th International Conference on Open Source Systems in 2012, Co-Chair of the 3rd Games and Software Engineering Workshop at the 2013 International Conference On Software Engineering, and ICS Distinguished Alumnus of 2012.

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Conference Participants



Spencer Stephens

Former Chief Technology Officer,
Sony Pictures Entertainment

As a media and entertainment industry consultant, Spencer Stephens specializes in the application of technology to the 'glass to glass' flow of content from the story teller to the consumer experience. His expertise includes production, content protection, and AI as applied in the M&E space.

During his tenure as Chief Technology Officer at Sony Pictures Entertainment, Spencer lead the studio's Technology Development group working on technology innovation and application. The group's role touched on every part of the content path from the on-set technology including cameras and lens, through post-production and mastering to the standards used to deliver content and provide a full consumer experience.

Previously, Spencer worked as a technologist for Warner Bros. and before that, he built and ran the digital production group at Walt Disney Television Animation. Spencer started in data communications as system engineer at the inception of the computer network industry. Spencer has a first-class honors BSc in physics from the University of Sussex and a masters in computer science from the University of California, Berkeley.



Micah Winkelspecht

CEO & Founder,
Gem

Micah Winkelspecht is the CEO and Founder of Gem. Micah has been active in bitcoin since 2012. In the early days, Micah established an active Bitcoin community in Los Angeles and grew it to over 1,000 members. Micah is also a significant contributor to the blockchain developer community as the author of MoneyTree, a popular open-source library used to create blockchain wallets and the first Ruby implementation of a Bitcoin HD wallet. Prior to his contributions to blockchain technology, Micah spent 10+ years developing software for companies including AT&T Interactive, Guide Financial, and Pose.

When it was founded, Gem offered security-as-a-service for developers building on top of Bitcoin. As blockchain technology popularized, Gem was increasingly approached by financial institutions to apply our security to other digital assets. We designed GemOS to expand security beyond digital assets, to apply it to identity, data, and logic frameworks that can be implemented on a blockchain. Today, Gem works with leaders in finance, healthcare, insurance, and beyond.

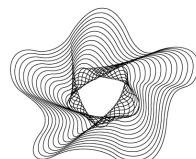
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