



# 2019 SYMPOSIUM ON CRYPTOLOGIC HISTORY

## FROM DISCOVERY TO DISCOURSE

Co-Sponsored with the  
National Cryptologic Museum Foundation

**PRELIMINARY PROGRAM\***

**THURSDAY, OCTOBER 17**

**KOSSIAKOFF CENTER IN LAUREL, MARYLAND**

Registration check-in and continental breakfast available between 7:30 am – 8:30 am

### SESSION 1 8:30 AM – 9:15 AM

#### PLENARY AUDITORIUM

Welcome	Mr. John A. Tokar, Chief, NSA Center for Cryptologic History (CCH)
Keynote Address	General Keith B. Alexander, USA (retired)

### SESSION 2 9:30 AM – 11:00 AM

#### SESSION 2A AUDITORIUM

Security and Conflict in Cyberspace: Uncovering the History Moderator: Dr. Michael Warner

Mr. Jason Healey	A Fierce Domain: Conflict in Cyberspace from 1986–2019
Ms. Ruth Nelson	The Origins of the Cyber Security Model(s)
Dr. Thomas Rid	The First Digital Active Measures
Mr. JD Work	Beyond Monopoly: The Emergence of Privatized Cyber Intelligence and Cryptologic Capabilities under Hostile Pressure

#### SESSION 2B CLASSROOM B

Contemporary Discourse about Unbroken Historic Ciphers Moderator: Ms. Laura Sawyer

Dr. Gregor Damschen	A Fibonacci-Based Lunisolar Calendar in the Voynich Manuscript (Beinecke MS 408, f68r3)
Mr. John F. Dooley	Who Wrote the Beale Ciphers Pamphlet? An Author Attribution Study
Dr. George Lasry	Modern Codebreaking of Siemens and Halske T52
Mr. David Oranchak	What Can Deep Learning Teach Us about the Unsolved Zodiac 340 Cipher?

#### SESSION 2C CLASSROOM C

Kagnew Station and a Stonehouse in East Africa Moderator: Mr. Mark Nixon

Mr. Bob Doan	Selections from Dick Bernard’s “The Stonehouse Story – Telemetry Collection from Soviet Space Probes – From Beginning to End” as read by Mr. Bob Doan
Mr. Don Dement	Technology in an Ancient World
Mr. Bill Semenuk	Permanent Change of Station (PCS) to Stonehouse

## THURSDAY LUNCH SESSIONS 11:00 AM – 12:50 AM

### DINING ROOM SESSION

11:30 AM – 12:00 PM

Ms. Liza Mundy Reflections on Discovering Cryptologic History

### AUDITORIUM PERFORMANCE 12:15 PM – 12:50 PM

The Parkway Chorale, Dr. Paul Nahay, Music Director, with historical commentary by Dr. David A. Hatch

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## SESSION 3 1:00 PM – 2:30 PM

### SESSION 3A AUDITORIUM

From UKUSA to UK/US/CAN

Moderator: Dr. David J. Sherman

Mr. Anthony M. Rutkowski How WW1 SIGINT Shaped Future Cooperation and Treaty Instruments

Ms. Maria Robson Sharing Despite Asymmetric Capabilities: Canada's Inclusion in UKUSA

Dr. Wesley Wark Joining the Club: The 70th Anniversary of the Canada-US SIGINT Agreement

### SESSION 3B CLASSROOM B

Immersive Collaboration among the IC, Academy, and Industry: A Case Study of the Laboratory of Analytical Sciences (LAS)

Moderator: Dr. Kathleen M. Vogel

Dr. Beverly Baker Tyler The Motivation of LAS and the Structure of its Academia-Industry-Government Partnerships

Dr. Jessica Katz Jameson The Challenges and Solutions that LAS has had in Implementing their Proposed Immersive Collaboration

Dr. Kathleen M. Vogel Examples of Tradecraft Development and Project Successes

Dr. Sharon M. B. Joines Development and Implementation of Interventions at LAS and Lessons Learned

### SESSION 3C CLASSROOM C

Cryptologic Machines Up Close

Moderator: Ms. Jennifer Wilcox

Dr. Nicholas Gessler The American Brake Shoe Company "Cook" Cryptograph: A Comparison of its Mechanical and Electrical Implementations

Mr. Jim Oram The Enigma: A Demonstration

Ms. Jennifer Wilcox The Enigma vs. the Cryptanalytic Bombe: An Overview

Mr. Timothy Mucklow The SIGABA: An Overview and Demonstration

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## SESSION 4 3:00 PM – 4:15 PM

### PLENARY AUDITORIUM

Government Communications Headquarters (GCHQ) History

Moderator: Dr. Bill Williams

Mr. Jock Bruce What Happened Next? British Army Sigint, 1919-1939

Mr. Tony Comer GCHQ Centenary History

Dr. John Ferris GCHQ during the Cold War

**FRIDAY, OCTOBER 18**

***KOSSIAKOFF CENTER IN LAUREL, MARYLAND***

Registration check-in and continental breakfast available between 7:15 am – 8:00 am

**SESSION 5 8:00 AM – 9:30 AM**

**SESSION 5A AUDITORIUM**

World War II Cryptanalytic Discoveries

Moderator: Ms. Brenda McIntire

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|--------------------------------|--|
| Mr. Richard R. Lonergan        | Re-Evaluating the Cryptological Dividends of the Battle of Nomohan at 80: The Impact of Soviet Breakthroughs into Japanese Code and Cipher Systems |
| Dr. Francis Jordan-Rozwadowski | OKW/CHI's Attack on Polish Intelligence Traffic – Inferences from the Decrypts   |
| Dr. Chris Christensen          | Genevieve Grotjan's Discovery  |
| Dr. David Kenyon               | How Fishy was ULTRA? – The Role of Encrypted Teleprinter Traffic in the Intelligence for Operation OVERLORD  |

**SESSION 5B CLASSROOM B**

Discovering Deceit

Moderator: Ms. Marlisa Smith

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| Mr. Mark Nixon      | 60th Anniversary Overview of the Joseph S. Petersen Case |
| Mr. Samuel Stephens | The Ronald Pelton Espionage Case                         |
| Mr. Luis Rivera     | The Pollard Case   |

**SESSION 5C CLASSROOM C**

Discussions of Herbert O. Yardley

Moderator: Ms. Jennifer Casten

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| Mr. Jeffrey P. Rogg   | Deciphering the American Black Chamber: The Rise and Fall of the Cipher Bureau |
| Mr. Gregory J. Nedved | Herbert Yardley Revisited: What Does the New Evidence Say?                     |
| Dr. Craig P. Bauer    | The Langen-Yardley Correspondence  |

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## SESSION 6 9:45 AM – 11:15 AM

### SESSION 6A AUDITORIUM

#### The Timeless Need for Security

Moderator: Ms. Penny Horgan

Ms. Martine Diepenbroek	Aeneas Tacticus' Fire-Signaling and the German ADFGX and ADFGVX Ciphers
Mr. Ralph Sawyer	Secrecy: Historical Concepts and Practice in China
Mr. Marty Busse	COMSEC Lietuvos Partizanų
Sir Dermot Turing	The Typex Scare of 1943

### SESSION 6B CLASSROOM B

#### Exploring Topics of World War II

Moderator: Mr. Emmitt Baker

Dr. Allyn Enderlyn	A Portrait of Arthur Enderlin
Mr. Klaus Schmech	Steganography Used by Prisoners of War and Concentration Camp Inmates
Dr. Paul A. Thomsen	Terminating the Signal: How SIGINT Turned the Tide against Axis Submarine Predation in World War II
Mr. Robert J. Hanyok	Answering the Age-Old Commander's Question: What the Hell is Going on out There? – The U.S. Army's Signal Information and Monitoring Units and the Phantom Service

### SESSION 6C CLASSROOM C

#### A Public View of Cryptology

Moderator: Mr. John A. Tokar

Dr. Katherine Ellison	From 1719–2019: Daniel Defoe's Legacy in the Public Opinion of Intelligence and Cryptology
Dr. David J. Sherman	The Codebreakers' War: David Kahn, Macmillan, the Government and the Making of a Cryptologic History Masterpiece
Ms. Sarah Mainwaring	Cryptography and SIGINT – Half the Picture Revealed?
Ms. Jillian Foley	Lessons from Teaching the History of Cryptography

### FRIDAY LUNCH SESSIONS

11:15 AM – 1:00 PM

#### DINING ROOM SESSION

11:45 AM – 12:15 PM

Dr. David A. Hatch	Six Little Symposia and How They Grew: The History of History
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#### AUDITORIUM PERFORMANCE 12:30 PM – 1:00 PM

Mr. Bill and Mrs. Jew-Lee Briere	An Enduring Cryptologic Marriage: A Tribute to William and Elizebeth Friedman (A Reprise of the 2017 Presentation)
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## SESSION 7 1:15 PM – 2:45 PM

### SESSION 7A AUDITORIUM

#### Continuing Discourse on the Impact of World War I Cryptology

Moderator: Dr. John Ferris

- Dr. David A. Hatch            The Other Zimmermann Telegrams  
Dr. George Lasry            Deciphering German Diplomatic and Naval Codes from WWI  
Col Greg Eanes USAF (Ret)   Covert POW Communications in the First World War  
Mrs. Betsy Rohaly Smoot    Discovering the Cryptologists of World War I

### SESSION 7B CLASSROOM B

#### The History of Block Ciphers

Moderator: Prof. Jean-Jacques Quisquater

- Prof. Jean-Jacques Quisquater  
Dr. Nicolas T. Courtois  
Mr. Klaus Schmeh  
Mr. Marek Grajek

### SESSION 7C CLASSROOM C

#### Topics from Cold War-Era Cryptologic History

Moderator: Mr. Trumbull Soule

- Mr. Gabe Marshall            Innovation: From the United States Air Force Security Service (USAFSS) to the Twenty-Fifth Air Force (25-AF) – On Time Solutions in Cryptologic Operations  
Mr. Mark Borgerson           Pony Express: Telemetry Collection aboard the 1033-Class Destroyers  
Dr. John O'Hara              Analysis of Soviet Space and Missile Programs during the Early Cold War

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## SESSION 8 3:15 PM – 4:35 PM

### PLENARY AUDITORIUM

#### Concluding Remarks

Mr. John A. Tokar, Chief, CCH

#### Queens of Code: Stories from NSA's Computing Women

Moderator: Ms. Liza Mundy

- Ms. Eileen Buckholtz  
Ms. Kathleen Jackson  
Dr. Nancy Welker  
Ms. Jessica Garrett-Harsch

**SATURDAY, OCTOBER 19**

***EVENTS AT THE NATIONAL CRYPTOLOGIC MUSEUM, ANNAPOLIS JUNCTION, MD***

**SESSION 9 9:00 AM – 10:00 AM**

**MAGIC ROOM**

Research Workshop: Working with Personal Correspondence Collections

Moderator: Ms. Rene Stein

Ms. Maren Read

Mr. Robert Simpson

Tours of the National Cryptologic Museum begin at 9:00 am and 10:15 am

*\*A final program will be available to attendees during the Symposium. Unless speakers say otherwise, they are speaking under a policy of non-attribution and should not be quoted or cited without their permission. Presentations are the views of the speakers alone, and do not represent those of the US Government or the National Security Agency. Speakers and their presentations are not endorsed by the US Government or the National Security Agency.*